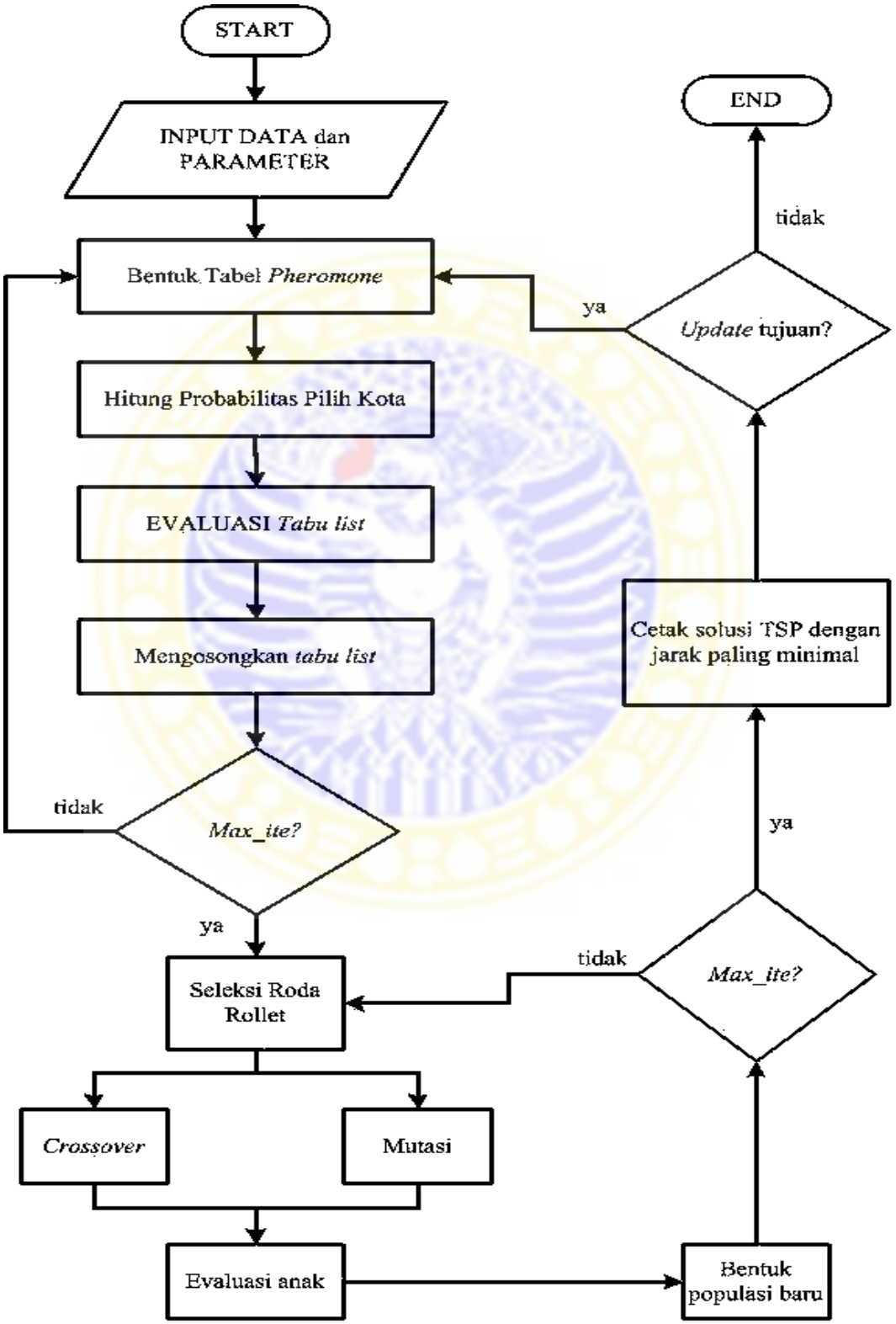
Lampiran 1 : *Flowchart hybrid* ACO dan GA :



Lampiran 2 : Data Kota Swiss42.xml

	0	1	2	3	4	5	6	7	8	9	10
0	0	15	30	23	32	55	33	37	92	114	92
1	15	0	34	23	27	40	19	32	93	117	88
2	30	34	0	11	18	57	36	65	62	84	64
3	23	23	11	0	11	48	26	54	70	94	69
4	32	27	18	11	0	40	20	58	67	92	61
5	55	40	57	48	40	0	23	55	96	123	78
6	33	19	36	26	20	23	0	45	85	111	75
7	37	32	65	54	58	55	45	0	124	149	118
8	92	93	62	70	67	96	85	124	0	28	29
9	114	117	84	94	92	123	111	149	28	0	54
10	92	88	64	69	61	78	75	118	29	54	0
11	110	100	89	89	78	75	82	126	68	91	39
12	96	87	76	75	65	62	69	113	63	88	34
13	90	75	93	84	76	36	60	80	122	150	99
14	74	63	95	84	83	56	63	42	148	174	134
15	76	67	100	89	89	66	70	42	155	181	142
16	82	71	104	92	91	63	71	49	156	182	141
17	67	69	98	89	95	95	85	40	159	181	157
18	72	62	57	54	43	37	44	87	67	95	44
19	78	63	88	78	72	34	52	60	129	157	110
20	82	96	99	99	110	137	115	94	148	159	161
21	159	164	130	141	141	174	161	195	78	50	103
22	122	132	100	111	116	156	136	158	80	65	109
23	131	131	101	109	105	129	122	163	39	27	52
24	206	212	179	190	190	224	210	242	129	102	154
25	112	106	86	89	81	90	91	135	46	65	22
26	57	44	51	44	34	15	25	65	82	110	63
27	28	33	4	11	19	59	37	63	65	87	68
28	43	51	18	29	35	75	54	79	55	73	66
29	70	77	43	54	57	96	78	106	40	50	61
30	65	75	45	56	63	103	81	101	61	68	81
31	66	72	95	89	97	105	90	50	157	176	158
32	37	52	45	47	58	91	68	66	97	112	107
33	103	118	115	118	129	158	136	118	159	166	175
34	84	99	93	96	107	139	116	104	135	142	151
35	125	132	152	147	156	164	150	109	212	229	216
36	129	132	159	151	158	156	147	103	221	241	219
37	72	67	100	90	92	78	76	36	159	184	150
38	126	139	112	122	129	169	148	160	110	99	137
39	141	148	114	126	127	163	147	178	72	46	100
40	183	186	153	163	161	191	180	218	95	69	115
41	124	122	94	101	95	115	111	153	35	38	37

Sumber : www.iwr.uni-heidelberg.de/groups/comopt/software/TSPLIB95/XML-TSPLIB/instances/swiss42.xml

	11	12	13	14	15	16	17	18	19	20	21
0	110	96	90	74	76	82	67	72	78	82	159
1	100	87	75	63	67	71	69	62	63	96	164
2	89	76	93	95	100	104	98	57	88	99	130
3	89	75	84	84	89	92	89	54	78	99	141
4	78	65	76	83	89	91	95	43	72	110	141
5	75	62	36	56	66	63	95	37	34	137	174
6	82	69	60	63	70	71	85	44	52	115	161
7	126	113	80	42	42	49	40	87	60	94	195
8	68	63	122	148	155	156	159	67	129	148	78
9	91	88	150	174	181	182	181	95	157	159	50
10	39	34	99	134	142	141	157	44	110	161	103
11	0	14	80	129	139	135	167	39	98	187	136
12	14	0	72	117	128	124	153	26	88	174	136
13	80	72	0	59	71	63	116	56	25	170	201
14	129	117	59	0	11	8	63	93	35	135	223
15	139	128	71	11	0	11	54	103	46	130	230
16	135	124	63	8	11	0	65	100	39	140	232
17	167	153	116	63	54	65	0	127	92	83	224
18	39	26	56	93	103	100	127	0	67	153	145
19	98	88	25	35	46	39	92	67	0	152	207
20	187	174	170	135	130	140	83	153	152	0	188
21	136	136	201	223	230	232	224	145	207	188	0
22	148	142	189	195	198	203	180	139	188	128	65
23	81	82	151	184	192	192	199	96	162	184	57
24	186	187	252	273	279	281	269	196	258	222	51
25	28	32	104	146	155	153	175	53	119	183	109
26	61	48	44	71	80	78	106	23	48	139	160
27	92	79	95	95	99	103	95	60	89	95	132
28	97	85	111	113	117	121	109	70	107	95	116
29	98	89	130	138	143	147	135	81	129	110	90
30	117	106	138	138	141	146	125	95	134	91	102
31	173	159	130	81	74	85	21	134	108	62	217
32	134	121	127	107	107	115	80	101	114	54	148
33	204	191	192	159	155	164	107	172	176	24	188
34	181	168	174	146	143	152	100	149	159	23	168
35	232	219	186	132	122	133	71	194	163	81	264
36	229	216	172	113	102	112	63	190	147	110	281
37	153	140	90	32	22	33	33	115	66	113	231
38	176	168	205	200	202	208	173	160	200	108	100
39	137	134	193	209	215	218	205	138	197	164	26
40	143	145	214	243	250	251	249	159	224	217	30
41	62	64	135	171	179	178	191	80	147	184	75

Sumber : www.iwr.uni-heidelberg.de/groups/comopt/software/TSPLIB95/XML-TSPLIB/instances/swiss42.xml

	22	23	24	25	26	27	29	30	31	32	33
0	122	131	206	112	57	28	70	65	66	37	103
1	132	131	212	106	44	33	77	75	72	52	118
2	100	101	179	86	51	4	43	45	95	45	115
3	111	109	190	89	44	11	54	56	89	47	118
4	116	105	190	81	34	19	57	63	97	58	129
5	156	129	224	90	15	59	96	103	105	91	158
6	136	122	210	91	25	37	78	81	90	68	136
7	158	163	242	135	65	63	106	101	50	66	118
8	80	39	129	46	82	65	40	61	157	97	159
9	65	27	102	65	110	87	50	68	176	112	166
10	109	52	154	22	63	68	61	81	158	107	175
11	148	81	186	28	61	92	98	117	173	134	204
12	142	82	187	32	48	79	89	106	159	121	191
13	189	151	252	104	44	95	130	138	130	127	192
14	195	184	273	146	71	95	138	138	81	107	159
15	198	192	279	155	80	99	143	141	74	107	155
16	203	192	281	153	78	103	147	146	85	115	164
17	180	199	269	175	106	95	135	125	210	80	107
18	139	96	196	53	23	60	81	95	134	101	172
19	188	162	258	119	48	89	129	134	108	114	176
20	128	184	222	183	139	95	110	91	62	54	24
21	65	57	51	109	160	132	90	102	217	148	188
22	0	91	94	126	145	100	60	57	167	99	126
23	91	0	106	53	115	104	74	94	196	134	192
24	94	106	0	158	211	180	136	145	259	190	218
25	126	53	158	0	75	89	83	103	178	129	197
26	145	115	211	75	0	53	86	95	114	90	160
27	100	104	180	89	53	0	44	45	92	42	112
28	82	94	163	88	68	18	27	27	103	42	109
29	60	74	136	83	86	44	0	21	128	62	119
30	57	94	145	103	95	45	21	0	115	46	98
31	167	196	259	178	114	92	128	115	0	69	86
32	99	134	190	129	90	42	62	46	69	0	71
33	126	192	218	197	160	112	119	98	86	71	0
34	106	168	200	173	139	89	96	75	81	49	24
35	208	251	302	236	173	149	179	163	60	117	94
36	230	260	323	238	168	156	192	179	65	133	127
37	194	197	278	166	92	99	142	136	54	98	137
38	36	126	120	156	162	111	79	67	158	95	100
39	39	64	65	111	150	116	72	81	195	127	163
40	94	64	49	115	176	155	115	129	243	175	218
41	103	19	124	34	101	97	74	95	190	132	194

Sumber : www.iwr.uni-heidelberg.de/groups/comopt/software/TSPLIB95/XML-TSPLIB/instances/swiss42.xml

	34	35	36	37	38	39	40	41
0	84	125	129	72	126	141	183	124
1	99	132	132	67	139	148	186	122
2	93	152	159	100	112	114	153	94
3	96	147	151	90	122	126	163	101
4	107	156	158	92	129	127	161	95
5	139	164	156	78	169	163	191	115
6	116	150	147	76	148	147	180	111
7	104	109	103	36	160	178	218	153
8	135	212	221	159	110	72	95	35
9	142	229	241	184	99	46	69	38
10	151	216	219	150	137	100	115	37
11	181	232	229	153	176	137	143	62
12	168	219	216	140	168	134	145	64
13	174	186	172	90	205	193	214	135
14	146	132	113	32	200	209	243	171
15	143	122	102	22	202	215	250	179
16	152	133	112	33	208	218	251	178
17	100	71	63	33	173	205	249	191
18	149	194	190	115	160	138	159	80
19	159	163	147	66	200	197	224	147
20	23	81	110	113	108	164	217	184
21	168	264	281	231	100	26	30	75
22	106	208	230	194	36	39	94	103
23	168	251	260	197	126	64	64	19
24	200	302	323	278	120	65	49	124
25	173	236	238	166	156	111	115	34
26	139	173	168	92	162	150	176	101
27	89	149	156	99	111	116	155	97
28	85	157	168	115	94	98	140	90
29	96	179	192	142	79	72	115	74
30	75	163	179	136	67	81	129	95
31	81	60	65	54	158	195	243	190
32	49	117	133	98	95	127	175	132
33	24	94	127	137	100	163	218	194
34	0	104	133	127	85	143	197	170
35	104	0	39	100	190	241	292	246
36	133	39	0	81	216	259	307	253
37	127	100	81	0	193	214	253	187
38	85	190	216	193	0	74	129	137
39	143	241	259	214	74	0	55	80
40	197	292	307	253	129	55	0	81
41	170	246	253	187	137	80	81	0

Sumber : www.iwr.uni-heidelberg.de/groups/comopt/software/TSPLIB95/XML-TSPLIB/instances/swiss42.xml

Tabel Jarak Kota kroA150 :

KOTA	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
A	0,000	1692,830	2252,271	1103,610	2522,814	396,853	1446,765	424,537	1424,059	749,106	902,269	1546,992	2553,845	2378,370	1014,754	1259,356	1017,529
B	1692,830	0,000	1708,470	2402,816	1185,960	2056,613	1391,806	1619,841	1342,505	2441,831	2358,836	1606,488	969,752	1661,985	2445,813	2830,615	2455,096
C	2252,271	1708,470	0,000	3332,923	1073,736	2622,806	811,321	2501,898	829,191	2793,510	2264,730	782,466	1532,654	221,298	2279,527	3482,277	2292,553
D	1103,610	2402,816	3332,923	0,000	3447,026	822,125	2538,425	850,719	2511,710	1030,069	1695,417	2649,139	3362,051	3441,610	1794,275	624,772	1789,490
E	2522,814	1185,960	1073,736	3447,026	0,000	2919,352	1423,989	2605,818	1400,121	3218,195	2883,284	1552,618	502,333	890,906	2934,403	3770,098	2946,543
F	396,853	2056,613	2622,806	822,125	2919,352	0,000	1812,307	533,670	1793,854	436,023	907,181	1891,778	2940,778	2758,120	1014,677	867,139	1012,354
G	1446,765	1391,806	811,321	2538,425	1423,989	1812,307	0,000	1724,840	50,249	1989,205	1511,092	216,113	1709,036	963,351	1545,006	2670,956	1557,711
H	424,537	1619,841	2501,898	850,719	2605,818	533,670	1724,840	0,000	1693,384	969,693	1307,469	1858,842	2553,934	2600,322	1420,535	1210,842	1421,951
I	1424,059	1342,505	829,191	2511,710	1400,121	1793,854	50,249	1693,384	0,000	1980,892	1518,626	266,271	1674,207	972,260	1555,998	2654,910	1568,604
J	749,106	2441,831	2793,510	1030,069	3218,195	436,023	1989,205	969,693	1980,892	0,000	721,261	2024,655	3286,984	2952,336	802,173	769,801	794,769
K	902,269	2358,836	2264,730	1695,417	2883,284	907,181	1511,092	1307,469	1518,626	721,261	0,000	1483,066	3056,087	2450,311	113,071	1487,711	115,261
L	1546,992	1606,488	782,466	2649,139	1552,618	1891,778	216,113	1858,842	266,271	2024,655	1483,066	0,000	1876,009	969,149	1501,456	2735,858	1514,444
M	2553,845	969,752	1532,654	3362,051	502,333	2940,778	1709,036	2553,934	1674,207	3286,984	3056,087	1876,009	0,000	1370,372	3122,307	3756,476	3133,575
N	2378,370	1661,985	221,298	3441,610	890,906	2758,120	963,351	2600,322	972,260	2952,336	2450,311	969,149	1370,372	0,000	2470,595	3622,684	2483,580
O	1014,754	2445,813	2279,527	1794,275	2934,403	1014,677	1545,006	1420,535	1555,998	802,173	113,071	1501,456	3122,307	2470,595	0,000	1560,854	13,038
P	1259,356	2830,615	3482,277	624,772	3770,098	867,139	2670,956	1210,842	2654,910	769,801	1487,711	2735,858	3756,476	3622,684	1560,854	0,000	1552,217
Q	1017,529	2455,096	2292,553	1789,490	2946,543	1012,354	1557,711	1421,951	1568,604	794,769	115,261	1514,444	3133,575	2483,580	13,038	1552,217	0,000
R	1167,469	2836,891	3286,385	928,903	3681,029	781,952	2480,832	1257,132	2471,469	493,377	1161,234	2518,003	3720,485	3443,488	1219,447	399,406	1209,446
S	813,706	2310,216	3065,975	372,340	3277,007	473,701	2259,775	691,035	2237,656	664,254	1323,964	2352,087	3243,398	3190,107	1422,139	523,321	1417,271
T	1404,843	1603,242	934,013	2508,212	1655,731	1743,555	242,200	1728,844	281,311	1871,215	1334,152	153,584	1950,941	1116,198	1355,951	2584,532	1368,892
U	885,113	2501,843	2582,163	1444,921	3135,404	737,130	1806,204	1228,328	1807,973	420,387	348,931	1800,001	3267,833	2760,057	402,226	1162,011	392,622
V	1329,531	2896,747	3551,541	660,867	3839,753	937,243	2740,228	1276,915	2724,370	829,608	1544,613	2804,087	3824,394	3692,408	1615,358	70,178	1606,450
W	882,220	1921,433	1703,470	1928,375	2328,645	1110,786	942,251	1295,391	950,853	1136,555	569,014	921,092	2531,764	1884,426	606,923	1885,910	619,317
X	1206,067	2894,556	3245,720	1101,311	3691,817	843,282	2447,785	1350,988	2442,029	473,625	1060,317	2469,696	3755,487	3410,872	1105,601	578,070	1094,658
Y	1194,021	893,071	1183,943	2203,686	1343,501	1590,114	555,792	1355,059	506,320	1874,710	1592,270	767,607	1464,176	1254,771	1661,003	2452,439	1672,005
Z	1510,639	2670,971	3716,831	417,062	3765,138	1238,998	2931,316	1216,004	2902,397	1416,404	2102,426	3050,373	3639,889	3816,033	2198,409	839,803	2192,993
AA	1571,560	1737,337	846,132	2675,056	1675,524	1899,799	345,685	1904,643	394,833	2003,397	1427,017	136,488	2008,757	1046,561	1436,023	2730,457	1449,061
AB	415,637	1363,365	1855,776	1478,049	2113,827	811,006	1062,015	670,858	1033,993	1117,595	1026,078	1188,354	2170,080	1972,457	1125,430	1674,988	1132,686
AC	2080,504	1500,966	214,021	3149,956	972,749	2458,473	663,193	2312,646	671,253	2651,649	2158,992	685,810	1397,141	301,042	2183,249	3322,441	2196,179
AD	2144,575	1190,745	592,084	3152,300	553,166	2538,561	894,880	2301,667	878,080	2792,855	2390,684	1005,199	956,622	482,374	2432,383	3403,924	2444,890
AE	886,713	1592,385	2769,949	844,352	2700,639	944,034	2040,947	464,969	2002,808	1366,023	1771,007	2201,489	2561,278	2838,505	1884,021	1387,548	1885,128
AF	790,226	2165,918	2086,779	1696,563	2683,121	880,777	1320,123	1210,889	1325,474	795,616	201,854	1304,345	2854,358	2267,401	280,032	1562,868	289,178
AG	2640,852	1069,318	1532,922	3458,916	474,659	3029,285	1756,407	2648,022	1723,487	3371,100	3126,635	1916,314	100,663	1360,581	3190,700	3848,766	3202,118
AH	1803,870	1451,480	448,413	2886,524	1178,072	2175,125	366,895	2059,711	381,283	2355,763	1859,024	395,410	1542,654	598,021	1884,710	3035,951	1897,610
AI	1576,118	1893,081	983,246	2674,076	1851,225	1879,611	508,992	1934,297	555,714	1944,726	1329,080	312,195	2186,907	1192,559	1326,217	2688,485	1339,198
AJ	1172,711	2857,569	3047,000	1336,013	3569,123	876,622	2265,813	1410,090	2265,536	441,192	804,480	2265,173	3672,724	3222,913	830,832	876,621	818,912
AK	2518,195	1143,124	1133,382	3428,180	69,231	2914,201	1453,675	2590,029	1427,878	3220,139	2899,678	1589,216	433,175	954,510	2953,099	3761,276	2965,128
AL	1224,827	2917,257	3215,884	1189,673	3688,565	878,009	2423,198	1397,243	2419,356	478,481	1004,973	2437,032	3765,053	3385,059	1042,701	674,111	1031,303
AM	2102,314	961,138	850,565	3060,989	437,385	2499,152	1005,726	2212,886	977,492	2786,951	2446,652	1154,612	733,485	740,648	2499,040	3356,250	2511,105
AN	1358,106	336,506	1730,968	2087,302	1413,017	1720,118	1258,792	1288,820	1208,591	2107,211	2052,778	1473,784	1274,762	1727,452	2144,226	2498,687	2152,897
AO	2697,599	1984,454	450,787	3771,112	1079,082	3071,176	1261,300	2933,783	1277,436	3244,043	2705,464	1227,825	1580,214	343,634	2715,524	3931,970	2728,562
AP	661,461	1536,060	2591,882	867,682	2593,881	764,294	1843,694	247,778	1807,637	1197,602	1553,669	1996,184	2494,471	2672,005	1666,734	1333,688	1668,376
AQ	2250,860	1834,545	171,026	3343,369	1244,740	2610,478	805,096	2524,469	832,325	2755,668	2196,001	731,016	1701,277	379,348	2203,004	3462,080	2216,038
AR	1668,394	256,564	1452,251	2479,002	1007,246	2050,534	1165,011	1660,676	1116,882	2409,844	2252,610	1376,802	894,911	1410,115	2332,035	2861,572	2342,154
AS	923,018	2124,214	1895,680	1895,498	2548,369	1074,241	1153,735	1347,312	1165,088	1017,209	370,005	1114,842	2751,828	2083,279	391,281	1783,544	404,011
AT	2114,686	1636,498	139,262	3197,562	1107,079	2484,166	672,309	2369,010	690,974	2654,480	2130,136	647,093	1541,718	329,953	2146,923	3343,225	2159,935
AU	429,197	1932,617	2138,574	1394,723	2591,878	574,186	1332,884	849,763	1324,547	656,410	485,242	1375,182	2702,533	2295,937	595,185	1367,090	599,471
AV	2522,633	1595,606	507,055	3555,861	652,150	2911,479	1164,605	2706,768	1163,598	3136,008	2672,887	1207,359	1150,514	287,587	2700,788	3778,616	2713,666
AW	442,289	2094,273	2669,801	785,495	2964,122	47,074	1859,252	553,176	1840,873	420,595	931,181	1938,079	2982,436	2805,193	1037,102	820,289	1034,262
AX	1706,572	416,125	1292,653	2568,818	887,029	2096,312	1051,981	1736,749	1005,684	2437,387	2231,727	1258,814	849,632	1248,360	2305,313	2924,850	2315,972
AY	1128,690	1146,963	1137,949	2195,775	1498,040	1513,779	382,782	1365,057	341,697	1749,771	1391,604	570,737	1674,839	1250,960	1451,161	2380,740	1462,762
AZ	2474,052	1302,292	823,310	3447,685	259,239	2870,307	1263,396	2598,659	1246,645	3141,824	2757,153	1366,931	755,008	633,515	2800,167	3731,499	2812,637
BA	1010,451	2577,251	3246,178	497,636	3515,597	623,910	2435,298	958,175	2417,447	617,288	1334,044	2508,791	3501,008	3381,939	1418,817	255,691	1411,667
BB	1394,180	331,303	1827,943	2071,580	1468,374	1745,029	1362,062	1293,209	1311,876	2141,976	2118,403	1576,912	1296,446	1819,148	2212,258	2503,866	2220,573
BC	1707,546	1529,080	567,121	2801,622	1342,827	2068,132	264,151	1988,892	297,558	2226,894	1706,967	229,924	1693,549	743,347	1728,448	2922,548	1741,407
BD	795,343	1902,790	2916,618	500,372	2961,862	697,689	2144,672	420,640	2112,597	1078,645	1592,137	2279,369	2863,712	3008,841	1702,576	1020,655	1701,366
BE	1359,818	1400,389	902,656	2454,438	1499,523	1722,478	93,048	1646,536	99,765	1896,264	1421,527	240,751	1767,786	1056,381	1457,504	2579,867	1470,145
BF	718,229	1160,701	1572,472	1763,011	1818,490	1113,115	800,236	930,407	765,873	1401,862	1199,965	955,118	1900,228	1679,315	1285,222	1977,584	1294,602
BG	1030,897	2626,074	2625,838	1572,779	3221,863	886,001	1866,831	1379,078	1872,344	542,720	361,271	1843,949	3371,640	2810,484	370,473	1247,616	358,240
BH	1152,289	1851,157	1377,631	2235,153	2087,726	1428,743	666,108	1539,016	687,608	1481,270	888,381	598,820	2342,807	1567,949	902,765	2226,071	915,765
BI	1043,219	1006,106	1275,467	2076,108	1506,111	1437,614	561,805	1233,105	517,349	1712,779	1431,616	756,128	1626,493	1367,231	1502,704	2302,570	1513,503
BJ	1259,659	1802,543	1227,893	2353,394	1965,284	1555,526	541,613	1630,718	569,526	1626,016	1039,233	452,093	2240,202	1420,274	1051,701	2365,289	1064,722
BK	288,087	1979,198	2473,699	973,903	2799,737	157,258	1662,569	554,049	1645,479	465,465	791,768	1737,551	2840,720	2612,659	902,703	1010,032	901,885
BL	1365,662	331,717	1650,529	2131,240	1349,999	1735,622	1187,472	1320,959	1137,226	2114,008	2031,863	1403,002	1234,187	1647,539	2120,785	2527,810	2129,801
BM	1250,234	2526,658	3479,702	147,177	3583,507	960,026	2685,577	993,620	2658,799	1136,891	1819,139	2796,121	3489,321	3587,556	1915,411	630,892	1910,081
BN	1286,439	2618,487	3529,201	216,113	3661,452	970,271	2729,887	1061,075	2704,793	1102,391	1800,883	2833,129	3578,136	3642,558	1893,371	534,196	1887,346
BO	593,189	1102,743	1872,406	1502,068	1971,112	973,536	1130,682	651,464	1092,440	1340,554	1324,606	1296,087	1967,417	1958,181	1425,294	1802,515	1432,330
BP	1617,693	710,539	1020,785	2575,057	905,806	2014,442	740,945	1725,779	696,581	2315,189	2027,116	943,401	1033,008	1013,876	2090,681	2868,854	2102,086
BQ	1240,504	573,266	1423,781	2132,529	1316,706	1630,606	895,317	1289,126	845,185	1973,398	1807,754	1109,877	1314,330	1450,674	1889,442	2464,076	1899,297
BR	1386,559	2887,443	3630,577	554,476	3869,008	1007,922	2820,225	1275,731	2801,495	969,929	1690,795	2896,076	3829,444	3763,347	1767,321	214,849	1759,036
BS	2635,283	1901,814	401,005	3704,462	1007,263	3011,410	1205,231	2865,053	1219,059	3192,026	2664,748	1183,264	1507,061	267,552	2677,850	3873,844	2690,884
BT	801,539	2458,647	2640,376	1293,387	3145,426	604,467	1850,603	1113,801	1848,368	269,652	467,087	1861,198	3254,743	2811,120	538,164	1023,137	529,918
BU	1531,160	462,243	1287,392	2416,405	1030,674	1922,574	934,848	1577,345	886,276	2259,184	2054,658	1147,966	1028,409	1273,980	2129,607	2756,813	2140,137
BV	941,982	2543,907	2582,748	1507,782	3156,847	802,886	1814,365	1291,329	1817,945	480,585	328,694	1800,285	3298,394	2763,839	364,918	1211,137	354,154
BW	628,046	2076,212	2870,338	477,200	3049,347	374,233	2070,016	456,984	2045,110	712,198	1280,112	2174,949	3009,980	2986,956	1386,394	755,791	1383,583

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KOTA	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
BX	2648,724	1045,017	1615,070	3443,823	564,022	3034,312	1810,520	2641,094	1776,015	3383,749	3158,016	1975,966	102,825	1446,327	3224,588	3845,842	3235,833
BY	1048,429	1663,860	1333,015	2147,805	1957,628	1361,379	560,016	1411,559	569,573	1469,706	951,156	555,645	2186,840	1507,455	986,426	2189,994	999,032
BZ	2442,328	1262,333	832,663	3412,103	242,167	2838,767	1245,829	2563,430	1227,732	3113,283	2735,056	1354,709	730,034	649,059	2779,342	3699,185	2791,765
CA	1007,911	2647,112	3193,361	718,357	3530,726	611,658	2382,856	1047,852	2369,325	454,235	1173,365	2438,237	3547,620	3340,397	1248,908	315,628	1240,621
CB	862,975	1670,005	2811,808	758,022	2768,475	886,488	2071,418	438,508	2034,617	1301,624	1733,538	2226,231	2637,903	2885,916	1846,290	1301,410	1846,849
CC	1219,592	842,630	1192,821	2215,774	1310,247	1616,268	593,671	1365,776	543,737	1908,690	1638,251	807,372	1419,324	1254,783	1708,169	2476,307	1719,084
CD	2186,072	569,941	1530,889	2965,158	704,495	2567,160	1508,624	2163,983	1466,806	2927,253	2745,896	1700,403	399,846	1415,411	2819,887	3370,580	2830,536
CE	1715,552	1513,225	552,953	2808,106	1319,489	2078,011	269,683	1992,994	299,923	2240,564	1725,001	250,874	1670,752	725,581	1747,397	2933,648	1760,344
CF	888,474	2581,301	2913,172	1061,233	3354,736	560,972	2112,275	1092,477	2105,547	140,036	781,220	2140,160	3426,637	3075,611	848,067	714,582	839,031
CG	1733,841	832,314	880,571	2712,552	805,348	2130,503	714,194	1862,130	675,883	2415,414	2088,984	899,552	1002,726	863,020	2146,056	2990,088	2157,861
CH	1508,300	1752,072	926,742	2611,056	1738,268	1830,299	369,432	1849,796	415,409	1926,371	1346,001	185,970	2059,720	1125,880	1354,889	2656,633	1367,927
CI	1254,928	1218,501	1001,000	2332,155	1442,083	1633,844	237,994	1506,360	195,489	1848,411	1442,339	435,784	1660,762	1124,463	1492,381	2499,229	1504,495
CJ	1219,447	2806,434	3435,262	644,050	3734,719	825,112	2624,000	1187,765	2608,582	713,085	1430,236	2686,401	3727,584	3577,375	1502,969	58,138	1494,299
CK	806,490	1419,509	2587,070	992,363	2515,890	942,648	1867,182	416,329	1827,888	1376,939	1707,304	2033,100	2386,257	2652,870	1820,122	1495,199	1822,462
CL	643,770	2301,799	2842,383	747,466	3166,417	249,327	2031,081	738,875	2015,521	300,027	954,112	2096,932	3189,995	2984,551	1049,488	640,102	1044,177
CM	752,973	1978,321	1885,106	1760,316	2468,075	938,870	1108,953	1175,924	1112,763	945,011	415,496	1104,001	2644,319	2061,380	478,874	1696,622	489,802
CN	302,552	1769,469	2515,463	819,319	2701,296	329,074	1719,108	206,306	1692,607	764,697	1127,817	1832,688	2682,304	2629,438	1240,452	1075,375	1240,890
CO	412,976	1399,746	1845,799	1491,484	2128,814	804,205	1046,941	696,604	1020,769	1095,562	982,153	1166,277	2195,082	1967,077	1080,600	1670,480	1088,016
CP	1358,848	2963,133	3554,434	784,623	3879,304	962,252	2744,016	1345,786	2730,506	791,770	1491,464	2797,849	3880,203	3701,491	1555,117	160,705	1545,518
CQ	2431,135	793,771	1633,182	3196,274	670,547	2811,480	1707,420	2402,840	1668,262	3172,559	2984,601	1889,648	215,641	1490,620	3056,804	3611,101	3067,612
CR	2376,684	1200,941	826,461	3344,205	253,140	2773,242	1196,338	2495,666	1176,478	3050,340	2679,090	1312,494	715,437	655,080	2724,894	3633,055	2737,258
CS	814,877	2093,036	3018,377	324,230	3124,039	609,584	2229,602	527,057	2201,182	933,774	1516,320	2348,604	3047,171	3122,904	1622,852	804,555	1620,086
CT	782,653	1911,411	1786,235	1821,031	2373,915	1002,960	1009,757	1199,805	1013,984	1035,705	509,734	1005,561	2557,735	1962,030	565,100	1780,899	576,642
CU	1468,252	3155,994	3314,916	1498,552	3863,268	1154,045	2544,231	1683,737	2546,214	725,827	1053,230	2532,478	3971,847	3495,991	1057,651	950,962	1044,889
CV	2643,494	1830,805	454,279	3701,246	894,152	3024,699	1231,348	2857,269	1240,416	3220,440	2712,872	1229,993	1395,545	268,168	2730,564	3889,774	2743,574
CW	2097,024	1059,835	722,754	3081,984	499,009	2493,051	925,000	2231,649	901,338	2764,688	2394,737	1059,246	850,085	619,267	2442,318	3355,128	2454,599
CX	1513,397	3205,861	3419,544	1445,116	3943,801	1177,174	2641,855	1698,492	2642,087	764,368	1164,302	2637,219	4038,706	3597,508	1175,459	870,588	1162,861
CY	2662,811	1147,896	1419,298	3515,004	347,311	3054,937	1701,297	2693,142	1671,570	3383,899	3108,513	1849,783	224,163	1238,199	3168,135	3885,729	3179,832
CZ	1370,173	3062,972	3312,230	1323,588	3814,349	1030,866	2527,455	1552,158	2525,930	621,167	1071,825	2530,861	3901,674	3486,406	1094,701	773,644	1082,540
DA	473,193	1221,283	1945,112	1406,770	2083,078	854,112	1182,466	560,057	1147,476	1221,101	1231,189	1334,657	2086,666	2040,375	1334,700	1687,937	1341,101
DB	846,180	2489,062	3041,823	693,745	3368,969	449,755	2230,733	898,614	2216,070	362,221	1078,355	2291,664	3386,450	3186,083	1163,084	445,136	1156,004
DC	2055,408	1150,125	588,463	3067,123	622,774	2449,091	811,121	2216,688	792,548	2702,412	2302,515	930,002	996,386	511,893	2345,195	3314,713	2357,664
DD	824,357	941,883	1603,746	1782,152	1704,935	1218,362	893,801	931,709	851,150	1552,155	1417,950	1078,141	1734,950	1682,052	1507,237	2065,232	1516,148
DE	719,401	2045,660	1997,156	1684,185	2569,246	862,324	1219,082	1143,753	1221,886	838,848	321,310	1216,112	2735,093	2172,940	400,196	1595,856	409,684
DF	1016,736	1671,003	1368,316	2115,024	1984,452	1326,875	592,220	1383,418	600,308	1433,813	918,970	591,434	2207,928	1541,974	956,228	2154,391	968,765
DG	1508,792	3201,366	3457,028	1383,309	3960,973	1160,011	2673,733	1673,832	2672,488	761,215	1210,714	2675,314	4045,589	3632,117	1228,243	798,076	1215,846
DH	2057,183	1332,538	379,120	3103,472	803,204	2444,047	705,063	2257,753	699,263	2666,061	2216,085	780,933	1209,944	359,050	2249,376	3311,040	2262,128
DI	532,673	2201,840	2497,500	1163,198	2933,428	382,284	1692,635	856,893	1684,300	296,609	534,072	1730,593	3019,037	2655,734	637,628	1030,653	634,353
DJ	1548,941	281,114	1465,945	2366,373	1103,778	1931,021	1110,693	1544,205	1061,407	2290,813	2142,690	1325,409	1013,367	1441,613	2223,856	2743,391	2233,791
DK	1989,030	1852,771	482,116	3091,443	1488,248	2329,712	590,161	2298,252	632,096	2442,374	1855,643	442,340	1900,043	702,599	1857,053	3166,879	1870,060
DL	1951,443	446,587	1375,388	2775,018	739,797	2337,602	1265,735	1956,353	1222,260	2687,385	2489,664	1463,520	603,253	1290,381	2562,785	3155,206	2573,497
DM	1502,140	1362,235	751,130	2589,212	1353,250	1871,817	73,389	1769,361	78,109	2056,241	1584,028	248,847	1646,077	896,228	1618,330	2732,565	1631,029
DN	1370,013	2475,529	3549,189	335,431	3574,891	1134,035	2770,945	1047,855	2740,418	1365,413	2022,982	2897,246	3444,718	3643,083	2123,729	889,163	2119,332
DO	1018,415	2107,593	3161,168	340,588	3189,672	854,289	2388,576	663,827	2356,782	1179,004	1761,447	2521,284	3074,086	3252,558	1868,806	945,822	1866,293
DP	1974,389	1856,930	503,605	3077,124	1505,327	2313,554	582,220	2285,996	625,080	2423,797	1835,064	428,515	1914,467	723,896	1836,013	3149,504	1849,017
DQ	2125,857	1170,708	604,053	3131,982	556,594	2520,065	884,413	2281,320	866,615	2776,015	2377,441	998,618	950,985	499,917	2419,899	3385,213	2432,378
DR	709,087	1574,327	2651,274	828,697	2643,048	785,875	1904,339	288,062	1868,187	1215,528	1595,264	2056,994	2535,912	2730,206	1708,319	1315,019	1709,619
DS	2146,990	1814,107	253,931	3243,039	1306,998	2502,224	706,060	2430,358	737,222	2639,921	2075,047	616,042	1746,840	474,782	2081,356	3350,741	2094,389
DT	1471,180	2631,639	3675,668	381,072	3724,329	1203,170	2890,528	1174,704	2861,510	1388,456	2070,650	3010,103	3600,384	3774,676	2167,383	829,344	2162,118
DU	1146,917	1129,956	1123,855	2210,964	1474,538	1533,039	378,978	1378,295	336,109	1771,619	1415,311	572,102	1651,470	1233,986	1474,810	2400,104	1486,418
DV	2327,233	681,224	1630,089	3083,950	721,766	2705,665	1651,096	2292,670	1610,156	3070,371	2896,180	1839,579	315,163	1500,133	2970,457	3501,608	2981,086
DW	1113,913	2743,063	2776,775	1542,005	3364,232	918,286	2015,874	1433,469	2020,706	525,001	512,316	1994,799	3505,358	2961,018	516,807	1164,302	504,223
DX	2413,260	2027,661	330,194	3510,912	1375,678	2764,643	975,304	2699,874	1006,833	2889,702	2303,063	873,499	1849,375	485,161	2301,634	3608,794	2314,607
DY	1546,108	2800,601	3779,779	446,857	3873,983	1238,474	2984,713	1292,395	2958,295	1359,169	2064,677	3092,949	3767,030	3887,784	2155,292	711,961	2148,921
DZ	77,524	1626,105	2238,455	1102,220	2477,579	444,830	1437,812	371,615	1412,731	817,906	974,589	1547,823	2497,003	2358,520	1086,698	1296,039	1089,817
EA	419,687	1616,604	1875,299	1519,258	2268,447	750,726	1064,004	805,986	1048,051	956,454	750,150	1142,430	2372,929	2017,953	846,551	1607,071	854,256
EB	2139,151	1447,503	270,283	3195,469	849,143	2522,494	751,061	2352,396	752,521	2731,143	2257,936	796,264	1282,823	250,731	2285,940	3388,626	2298,808
EC	729,452	1230,061	2356,406	1173,798	2297,427	960,042	1644,716	436,976	1604,302	1393,300	1623,382	1816,047	2188,613	2421,038	1734,366	1623,547	1738,242
ED	1000,246	2585,214	3228,434	543,203	3512,047	609,141	2417,234	968,310	2400,241	576,147	1294,898	2487,165	3504,240	3366,530	1378,243	259,193	1370,905
EE	1676,607	1160,206	644,517	2727,572	1034,242	2063,675	390,466	1884,712	366,154	2292,503	1873,335	546,385	1330,085	715,819	1915,655	2930,740	1928,119
EF	2409,464	1843,651	161,447	3492,492	1118,494	2777,606	965,298	2662,685	985,483	2940,060	2396,143	919,959	1597,962	228,022	2406,277	3635,154	2419,316
EG	1098,692	2727,537	3288,281	715,967	3621,240	701,924	2477,762	1120,722	2464,177	541,133	1256,171	2532,945	3633,249	3435,174	1328,345	232,665	1319,655
EH	936,654	1066,004	2340,100	1346,739	2182,559	1182,027	1676,616	657,754	1632,568	1614,856	1818,263	1863,046	2034,420	2384,827	1927,726	1828,563	1932,334
EI	648,531	1802,106	2767,354	611,121	2836,383	599,771	1992,495	267,726	1960,847	1009,137	1472,541	2125,994	2755,414	2862,464	1584,259	1064,057	1583,829
EJ	1494,519	1118,000	803,598	2548,738	1174,660	1881,549	296,998	1708,125	255,368	2113,916	1713,338	498,896	1423,089	892,926	1760,899	2748,632	1773,147
EK	1007,182	2596,402	2595,187	1570,786	3189,919	872,351	1835,268	1360,168	1840,659	541,502	331,014	1813,183	3340,147	2779,456	345,006	1257,751	333,042
EL	426,439	1266,848	2012,223	1338,484	2147,493	798,159	1246,315	491,929	1212,033	1175,491	1222,497	1395,122	2143,904	2108,413	1328,279	1624,938	1334,093
EM	878,053	1975,895	3007,217	434,232	3044,842	752,787	2235,323	511,004	2203,303	1113,584	1655,044	2369,470	2939,442	3098,906	1764,445	989,532	1762,737
EN	1521,665	209,747	1581,010	2296,566	1197,879	1895,913	1199,427	1486,826	1149,596	2268,477	2157,639	1415,221	1068,101	1558,012	2242,829	2692,980	2252,317
EO	1277,047	1213,763	979,809	2353,170	1421,352	1656,402	225,743	1526,254	181,011	1871,406	1463,653	428,841	1643,814	1102,037	1513,052	2521,898	1525,197
EP	2649,997	1104,940	1477,271	3484,829	411,428	3040,345	1728,171	2668,392	1696,732	3376,048	3116,661	1882,809	154,263	1300,842	3178,617	3865,481	3190,171
EQ	2271,419	876,102	1152,611	3161,654	309,958	2665,897	1309,712	2327,001	1277,063	2984,766	2700,468	1471,003	407,578	1012,423	2760,442	3506,426	2772,106
ER	533,175	1187,941	2078,480	1316,372	2136,681	870,480	1336,794	469,233	1299,066	1272,404	1368,772	1498,665	2097,575	2160,953	1475,820	1658,906	1481,273
ES	1724,970	1629,420	596,360	2824,674	1436,714	2075,742	310,788	2023,487	353,927	2214,246	1668,499	189,789	1796,170	790,424	1683,568	2922,994	1696,587
ET	1382,167	1770,476	1075,372	2482,003	1847,692	1692,792	436,371	1737,903	473,271	1777,322	1194,060	308,177	2145,391	1270,832	1204,504	2511,861	1217,537

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KOTA	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
A	1167,469	813,706	1404,843	885,113	1329,531	882,220	1206,067	1194,021	1510,639	1571,560	415,637	2080,504	2144,575	886,713	790,226	2640,852	1803,870
B	2836,891	2310,216	1603,242	2501,843	2896,747	1921,433	2894,556	893,071	2670,971	1737,337	1363,365	1500,966	1190,745	1592,385	2165,918	1069,318	1451,480
C	3286,385	3065,975	934,013	2582,163	3551,541	1703,470	3245,720	1183,943	3716,831	846,132	1855,776	214,021	592,084	2769,949	2086,779	1532,922	448,413
D	928,903	372,340	2508,212	1444,921	660,867	1928,375	1101,311	2203,686	417,062	2675,056	1478,049	3149,956	3152,300	844,352	1696,563	3458,916	2886,524
E	3681,029	3277,007	1655,731	3135,404	3839,753	2328,645	3691,817	1343,501	3765,138	1675,524	2113,827	972,749	553,166	2700,639	2683,121	474,659	1178,072
F	781,952	473,701	1743,555	737,130	937,243	1110,786	843,282	1590,114	1238,998	1899,799	811,006	2458,473	2538,561	944,034	880,777	3029,285	2175,125
G	2480,832	2259,775	242,200	1806,204	2740,228	942,251	2447,785	555,792	2931,316	345,685	1062,015	663,193	894,880	2040,947	1320,123	1756,407	366,895
H	1257,132	691,035	1728,844	1228,328	1276,915	1295,391	1350,988	1355,059	1216,004	1904,643	670,858	2312,646	2301,667	464,969	1210,889	2648,022	2059,711
I	2471,469	2237,656	281,311	1807,973	2724,370	950,853	2442,029	506,320	2902,397	394,833	1033,993	671,253	878,080	2002,808	1325,474	1723,487	381,283
J	493,377	664,254	1871,215	420,387	829,608	1136,555	473,625	1874,710	1416,404	2003,397	1117,595	2651,649	2792,855	1366,023	795,616	3371,100	2355,763
K	1161,234	1323,964	1334,152	348,931	1544,613	569,014	1060,317	1592,270	2102,426	1427,017	1026,078	2158,992	2390,684	1771,007	201,854	3126,635	1859,024
L	2518,003	2352,087	153,584	1800,001	2804,087	921,092	2469,696	767,607	3050,373	136,488	1188,354	685,810	1005,199	2201,489	1304,345	1916,314	395,410
M	3720,485	3243,398	1950,941	3267,833	3824,394	2531,764	3755,487	1464,176	3639,889	2008,757	2170,080	1397,141	956,622	2561,278	2854,358	100,663	1542,654
N	3443,488	3190,107	1116,198	2760,057	3692,408	1884,426	3410,872	1254,771	3816,033	1046,561	1972,457	301,042	482,374	2838,505	2267,401	1360,581	598,021
O	1219,447	1422,139	1355,951	402,226	1615,358	606,923	1105,601	1661,003	2198,409	1436,023	1125,430	2183,249	2432,383	1884,021	280,032	3190,700	1884,710
P	399,406	523,321	2584,532	1162,011	70,178	1885,910	578,070	2452,439	839,803	2730,457	1674,988	3322,441	3403,924	1387,548	1562,868	3848,766	3035,951
Q	1209,446	1417,271	1368,892	392,622	1606,450	619,317	1094,658	1672,005	2192,993	1449,061	1132,686	2196,179	2444,890	1885,128	289,178	3202,118	1897,610
R	0,000	671,096	2364,545	817,665	431,613	1624,766	181,339	2340,538	1218,250	2495,536	1567,843	3142,608	3271,963	1548,566	1269,538	3808,047	2847,601
S	671,096	0,000	2206,181	1074,811	587,554	1583,622	819,499	1981,893	780,186	2366,346	1218,760	2893,122	2937,195	889,139	1331,914	3336,850	2617,575
T	2364,545	2206,181	0,000	1648,175	2652,601	769,796	2316,191	730,003	2911,959	180,569	1058,186	827,374	1116,936	2085,815	1153,173	1997,455	530,080
U	817,665	1074,811	1648,175	0,000	1215,020	879,069	711,418	1810,478	1836,158	1754,459	1138,566	2464,293	2665,353	1671,498	496,790	3344,292	2163,847
V	431,613	587,554	2652,601	1215,020	0,000	1950,854	604,822	2522,571	842,327	2797,794	1745,162	3392,115	3474,100	1442,506	1624,279	3916,864	3105,361
W	1624,766	1583,622	769,796	879,069	1950,854	0,000	1560,375	1083,289	2345,125	878,429	749,096	1591,320	1825,868	1739,569	383,377	2596,651	1291,036
X	181,339	819,499	2316,191	711,418	604,822	1560,375	0,000	2348,335	1399,297	2437,876	1588,460	3110,978	3263,862	1676,665	1190,531	3840,613	2813,074
Y	2340,538	1981,893	730,003	1810,478	2522,571	1083,289	2348,335	0,000	2567,275	885,131	779,164	980,206	955,304	1587,561	1390,692	1536,697	774,497
Z	1218,250	780,186	2911,959	1836,158	842,327	2345,125	1399,297	2567,275	0,000	3081,169	1869,367	3528,613	3504,567	1078,635	2110,955	3738,776	3273,021
AA	2495,536	2366,346	180,569	1754,459	2797,794	878,429	2437,876	885,131	3081,169	0,000	1234,689	778,052	1124,936	2265,785	1257,746	2047,416	503,843
AB	1567,843	1218,760	1058,186	1138,566	1745,162	749,096	1588,460	779,164	1869,367	1234,689	0,000	1676,967	1728,963	1049,915	851,115	2253,625	1408,707
AC	3142,608	2893,122	827,374	2464,293	3392,115	1591,320	3110,978	980,206	3528,613	778,052	1676,967	0,000	440,519	2567,753	1973,449	1409,070	300,501
AD	3271,963	2937,195	1116,936	2665,353	3474,100	1825,868	3263,862	955,304	3504,567	1124,936	1728,963	440,519	0,000	2482,342	2194,178	970,164	625,161
AE	1548,566	889,139	2085,815	1671,498	1442,506	1739,569	1676,665	1587,561	1078,635	2265,785	1049,915	2567,753	2482,342	0,000	1675,444	2660,227	2344,639
AF	1269,538	1331,914	1153,173	496,790	1624,279	383,377	1190,531	1390,692	2110,955	1257,746	851,115	1973,449	2194,178	1675,444	0,000	2924,793	1672,998
AG	3808,047	3336,850	1997,455	3344,292	3916,864	2596,651	3840,613	1536,697	3738,776	2047,416	2253,625	1409,070	970,164	2660,227	2924,793	0,000	1571,776
AH	2847,601	2617,575	530,080	2163,847	3105,361	1291,036	2813,074	774,497	3273,021	503,843	1408,707	300,501	625,161	2344,639	1672,998	1571,776	0,000
AI	2432,793	2351,395	293,015	1666,849	2754,441	808,282	2363,642	1023,000	3085,296	178,216	1272,530	937,850	1299,580	2318,394	1174,003	2225,608	675,740
AJ	478,979	1007,925	2113,009	465,967	910,532	1344,625	313,402	2231,703	1670,491	2220,417	1508,472	2926,060	3113,604	1793,803	962,749	3753,263	2625,842
AK	3679,442	3264,862	1688,042	3146,301	3830,766	2348,487	3693,628	1346,739	3741,295	1714,158	2111,610	1025,222	597,818	2673,486	2698,944	407,774	1220,246
AL	276,848	896,420	2283,824	657,167	700,258	1521,935	96,047	2345,563	1493,828	2400,363	1595,183	3086,036	3251,098	1739,560	1146,342	3848,801	2787,040
AM	3254,088	2871,816	1243,557	2698,192	3426,189	1894,118	3260,495	913,592	3395,852	1284,374	1689,893	683,633	261,237	2349,325	2246,258	764,197	809,373
AN	2500,423	1979,831	1440,401	2179,058	2565,300	1647,984	2558,453	710,721	2373,487	1594,809	1041,674	1517,105	1291,175	1297,852	1864,400	1371,706	1401,468
AO	3737,007	3511,016	1380,627	3027,305	4001,325	2148,238	3695,144	1594,481	4149,782	1279,630	2296,859	621,342	793,802	3180,208	2531,044	1551,569	896,172
AP	1438,277	813,261	1875,853	1473,915	1394,930	1510,635	1549,194	1417,236	1173,269	2055,006	829,402	2394,002	2337,779	229,020	1451,518	2591,495	2159,201
AQ	3249,019	3062,931	884,509	2522,352	3530,717	1644,312	3199,379	1242,411	3734,702	769,016	1866,153	337,925	754,540	2815,998	2025,570	1702,997	471,432
AR	2831,831	2349,153	1386,550	2426,898	2929,520	1778,347	2873,871	708,467	2775,704	1510,201	1300,963	1244,438	944,256	1702,520	2054,513	987,701	1200,284
AS	1490,725	1535,822	967,337	705,088	1845,360	220,810	1408,016	1299,871	2311,684	1057,012	885,268	1793,988	2042,107	1806,263	221,840	2817,145	1494,824
AT	3147,297	2928,374	797,564	2445,596	3412,466	1567,348	3107,230	1062,262	3583,142	717,681	1719,866	148,408	585,746	2644,601	1950,724	1551,037	311,236
AU	1148,157	1046,207	1222,437	571,357	1434,127	537,629	1120,208	1254,131	1811,784	1363,845	571,349	1995,240	2146,544	1314,161	361,332	2780,895	1699,548
AV	3622,840	3326,138	1346,465	2970,663	3848,709	2104,029	3601,445	1352,178	3915,974	1299,025	2109,260	522,015	427,126	2904,130	2484,069	1126,675	816,469
AW	742,847	431,802	1789,661	745,067	890,409	1151,823	810,630	1636,025	1201,816	1945,379	857,029	2505,547	2584,976	948,873	913,085	3071,285	2222,147
AX	2873,962	2419,199	1282,076	2426,502	2993,602	1733,896	2906,273	650,760	2879,381	1394,108	1320,482	1086,103	783,600	1813,650	2031,285	934,561	1055,881
AY	2230,728	1939,263	501,881	1637,744	2450,779	856,977	2220,683	254,230	2579,088	671,253	721,672	955,421	1043,197	1661,915	1190,121	1740,644	694,719
AZ	3615,922	3252,622	1483,338	3027,409	3801,573	2193,434	3614,334	1280,207	3784,333	1482,086	2059,369	742,647	368,635	2737,270	2559,868	733,377	978,461
BA	433,129	279,873	2358,856	1034,567	324,581	1683,080	603,680	2201,328	825,109	2509,822	1425,598	3082,368	3154,243	1165,374	1383,370	3593,196	2798,730
BB	2521,966	1982,400	1542,054	2231,705	2569,521	1729,370	2586,745	812,863	2343,630	1697,463	1099,138	1614,309	1375,913	1265,166	1933,048	1395,165	1503,597
BC	2719,958	2519,555	372,930	2018,508	2991,469	1141,475	2678,627	771,114	3195,292	335,407	1325,934	456,177	790,869	2299,879	1524,689	1726,825	168,630
BD	1198,409	530,084	2148,626	1432,218	1075,603	1676,772	1337,215	1757,079	812,503	2323,763	1091,146	2724,456	2692,064	366,958	1534,093	2960,976	2476,494
BE	2387,990	2172,078	203,747	1714,305	2649,058	853,150	2354,739	535,728	2849,478	349,594	980,397	756,239	977,581	1973,096	1229,478	1818,679	459,619
BF	1863,090	1517,584	844,077	1372,415	2047,758	785,493	1875,113	478,282	2144,390	1024,645	302,597	1386,960	1426,371	1246,467	1005,454	1979,994	1129,315
BG	879,932	1205,724	1694,549	150,864	1295,643	926,884	748,954	1909,412	1956,177	1788,123	1265,101	2518,162	2739,560	1822,136	546,882	3445,903	2217,915
BH	1970,057	1902,228	455,927	1215,630	2291,724	345,324	1904,526	963,756	2649,725	539,335	911,412	1282,532	1560,670	1955,688	719,242	2398,348	986,002
BI	2181,479	1840,559	686,721	1645,995	2372,746	934,137	2186,362	164,712	2448,946	857,422	627,615	1080,949	1101,356	1500,713	1230,386	1700,085	844,001
BJ	2116,210	2027,760	315,835	1366,435	2431,538	493,042	2053,377	909,479	2765,925	388,290	981,901	1137,620	1430,825	2031,787	869,874	2291,736	843,534
BK	883,240	630,601	1588,678	674,443	1079,754	955,586	917,990	1462,846	1390,954	1743,702	685,930	2312,418	2405,152	1000,981	743,275	2927,184	2026,691
BL	2517,288	2011,509	1374,052	2170,254	2595,043	1610,975	2569,926	644,152	2425,981	1525,657	1031,721	1436,674	1213,406	1353,627	1840,753	1329,558	1322,908
BM	977,880	497,112	2654,981	1555,772	652,334	2069,134	1156,215	2347,929	283,341	2821,489	1625,064	3296,292	3295,124	951,135	1828,600	3586,743	3033,436
BN	899,067	497,116	2689,693	1522,777	549,181	2080,686	1079,505	2410,169	323,200	2853,283	1673,486	3349,194	3361,024	1052,913	1822,981	3675,022	3081,770
BO	1754,433	1306,075	1188,445	1415,729	1871,736	1029,891	1799,094	706,208	1861,099	1369,001	300,847	1676,249	1650,234	910,383	1151,838	2056,463	1439,272
BP	2775,396	2382,973	976,566	2253,982	2938,719	1498,805	2788,633	444,528	2915,955	1079,379	1208,022	808,013	601,839	1882,707	1825,263	1100,038	741,978
BQ	2407,887	1963,395	1077,004	1979,451	2533,173	1350,296	2441,197	347,001	2463,057	1230,488	858,518	1210,753	1061,701	1422,650	1610,851	1400,446	1060,747
BR	612,083	592,001	2746,316	1370,751	186,132	2066,957	788,379	2569,437	669,164	2897,427	1799,200	3464,419	3524,348	1380,557	1756,400	3923,718	3182,715
BS	3684,531	3448,188	1335,003	2983,122	3943,351	2104,343	3645,789	1521,873	4080,991	1242,334	2232,258	555,296	711,138	3106,054	2487,608	1481,001	838,630
BT	697,252	923,643	1708,012	151,714	1078,687	947,275	613,942	1809,025	1684,595	1825,484	1099,244	2512,741	2691,153	1546,435	577,291	3334,122	2213,217
BU	2698,601	2254,934	1154,250	2246,862	2825,863	1563,504	2728,730	483,803	2737,587	1280,435	1141,858	1074,728	838,505	1682,099	1854,622	1111,960	995,080
BV	857,324	1138,320	1649,457	66,008	1262,401	879,721	740,771	1838,049	1896,988	1749,995	1181,682	2469,585	2680,532	1736,074	496,456	3373,682	2169,097
BW	853,797	234,079	2032,807	1083,661	820,954	1458,528	979,400	1765,361	890,021	2198,624	1015,332	2692,194	2720,008	697,402	1252,952	3103,653	2422,598

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KOTA	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
BX	3814,699	3331,301	2052,307	3368,209	3913,518	2634,441	3851,530	1565,917	3715,819	2108,306	2267,422	1485,899	1045,781	2637,319	2956,322	92,195	1639,006
BY	1962,936	1830,411	402,061	1252,622	2257,492	382,237	1914,371	780,862	2558,129	540,774	760,485	1212,055	1446,570	1810,372	761,838	2246,454	911,554
BZ	3586,249	3218,943	1468,416	3002,805	3769,234	2172,457	3586,049	1248,885	3747,581	1471,806	2027,979	742,055	351,574	2699,370	2537,251	712,832	968,922
CA	229,652	441,491	2285,955	852,997	376,969	1575,313	386,264	2198,368	1043,348	2427,700	1419,607	3039,496	3142,153	1321,005	1247,604	3637,164	2749,227
CB	1468,699	806,113	2106,699	1619,413	1355,977	1729,440	1599,880	1632,339	1002,884	2285,963	1060,063	2611,674	2538,386	87,207	1646,481	2736,547	2382,401
CC	2371,356	2001,032	775,341	1852,199	2546,380	1132,857	2382,223	51,478	2574,950	927,371	806,311	986,222	938,043	1584,061	1436,856	1493,076	793,300
CD	3348,777	2854,632	1748,053	2935,029	3437,959	2246,665	3391,592	1163,518	3240,186	1836,782	1816,150	1355,378	941,760	2161,556	2545,641	499,410	1424,004
CE	2733,479	2528,067	391,492	2035,218	3002,660	1158,858	2693,361	764,232	3200,726	358,454	1331,542	436,323	767,566	2300,209	1541,914	1703,782	145,962
CF	386,804	711,000	1986,577	447,599	767,524	1239,897	338,917	2011,271	1427,266	2113,521	1256,957	2775,342	2924,945	1471,854	882,783	3510,565	2478,187
CG	2882,941	2510,966	956,060	2332,048	3060,128	1545,287	2888,970	542,441	3058,684	1035,773	1320,247	670,231	450,871	2031,607	1887,689	1058,418	643,609
CH	2418,083	2298,444	155,425	1674,055	2723,723	798,912	2358,904	884,299	3018,807	81,154	1181,790	854,162	1189,929	2219,829	1177,426	2101,166	573,888
CI	2334,453	2067,944	390,128	1708,906	2569,072	887,393	2315,880	340,212	2718,659	546,795	854,785	825,680	956,663	1808,183	1243,225	1719,815	554,585
CJ	346,175	506,744	2534,783	1103,959	118,596	1832,305	526,275	2413,332	882,164	2679,524	1634,959	3276,918	3363,452	1383,131	1506,935	3819,332	2989,425
CK	1615,105	979,615	1921,815	1644,189	1554,383	1621,670	1728,531	1403,698	1255,827	2102,256	905,284	2383,804	2294,625	187,771	1594,008	2484,677	2164,618
CL	535,093	375,586	1946,113	700,158	709,186	1266,815	612,412	1833,703	1148,955	2094,778	1054,883	2684,007	2778,525	1092,471	979,455	3278,587	2396,384
CM	1433,196	1408,787	951,329	698,720	1761,142	191,635	1370,606	1182,212	2177,370	1067,279	709,663	1765,642	1979,447	1632,256	215,244	2713,600	1465,172
CN	1076,746	576,945	1694,173	1027,189	1144,009	1180,858	1159,036	1407,611	1217,869	1864,200	659,697	2335,396	2362,629	648,680	1049,120	2774,035	2068,354
CO	1552,284	1223,058	1033,155	1102,435	1740,649	702,285	1567,830	789,518	1886,559	1208,196	47,676	1670,189	1734,413	1086,584	805,438	2277,579	1397,915
CP	341,920	667,471	2645,305	1152,912	133,645	1926,240	500,992	2552,329	975,554	2785,064	1773,176	3400,612	3499,210	1542,800	1585,776	3971,386	3110,410
CQ	3593,237	3093,823	1949,047	3178,143	3678,201	2478,329	3636,768	1397,056	3462,052	2025,085	2061,210	1477,349	1042,927	2384,068	2783,861	311,014	1585,323
CR	3522,241	3151,937	1422,264	2943,927	3703,084	2117,981	3523,318	1183,731	3679,436	1432,248	1962,631	719,611	307,417	2631,357	2480,714	707,636	931,427
CS	996,835	325,862	2211,031	1316,802	859,624	1674,133	1144,023	1881,414	702,160	2381,406	1167,588	2832,825	2828,693	583,062	1484,857	3143,369	2573,320
CT	1525,906	1475,713	852,678	798,110	1846,203	107,935	1466,896	1098,597	2237,865	971,393	683,697	1666,234	1882,176	1648,813	312,083	2625,685	1365,766
CU	572,552	1209,685	2381,772	738,241	963,968	1612,043	397,336	2528,215	1786,112	2480,045	1808,179	3201,240	3401,477	2044,105	1228,739	4052,055	2900,740
CV	3711,648	3454,294	1379,058	3025,334	3959,547	2148,455	3678,589	1505,961	4071,995	1299,720	2235,898	569,171	643,693	3081,987	2531,714	1366,501	865,520
CW	3238,102	2879,259	1157,726	2657,330	3425,236	1835,632	3237,445	903,005	3426,226	1185,655	1682,050	556,821	136,927	2391,942	2195,826	873,582	699,217
CX	517,673	1179,780	2485,631	837,611	875,825	1716,128	361,708	2604,436	1710,214	2588,671	1869,897	3301,304	3490,623	2037,024	1333,006	4120,593	3000,942
CY	3829,924	3378,558	1939,903	3338,499	3954,408	2568,492	3855,578	1528,101	3806,240	1977,992	2267,161	1308,551	875,673	2729,190	2906,803	149,164	1491,432
CZ	395,702	1044,150	2378,407	733,160	788,448	1610,938	225,211	2473,049	1608,124	2487,499	1731,851	3188,817	3367,713	1894,045	1229,753	3984,322	2888,873
DA	1634,615	1196,505	1217,435	1306,129	1757,380	978,001	1678,986	796,990	1775,687	1397,443	229,264	1753,656	1748,574	868,380	1065,809	2175,346	1505,944
DB	359,006	357,532	2140,059	781,300	512,622	1443,504	476,765	2037,456	1061,886	2285,345	1258,479	2885,367	2982,526	1200,403	1132,264	3475,800	2596,581
DC	3181,633	2849,383	1036,851	2575,762	3384,891	1738,464	3173,415	867,698	3421,637	1052,935	1639,848	412,572	90,449	2404,372	2105,620	1017,892	559,129
DD	1991,239	1577,743	990,051	1566,818	2134,940	1018,168	2020,757	427,720	2140,707	1167,709	437,375	1403,933	1370,228	1167,015	1227,228	1819,891	1178,493
DE	1324,748	1326,775	1063,423	587,487	1659,554	301,100	1259,443	1271,110	2100,740	1178,671	739,851	1876,844	2085,555	1605,700	121,017	2806,086	1576,423
DF	1927,050	1796,349	437,852	1218,255	2221,850	350,565	1878,734	792,456	2525,825	576,213	736,414	1246,134	1476,195	1785,852	728,457	2268,581	945,650
DG	462,050	1131,203	2523,072	876,056	800,000	1754,831	324,052	2619,344	1637,777	2630,371	1875,524	3334,793	3514,850	1998,606	1372,837	4128,659	3034,743
DH	3152,712	2864,054	906,502	2506,995	3381,080	1647,308	3132,039	905,108	3471,767	891,852	1645,572	192,044	255,812	2483,228	2024,263	1225,686	388,075
DI	788,885	793,202	1577,336	371,446	1095,231	855,697	763,791	1590,599	1573,256	1712,921	851,496	2355,041	2500,084	1302,065	547,317	3100,926	2059,237
DJ	2712,294	2231,850	1323,257	2311,710	2811,452	1677,641	2754,512	622,014	2668,320	1456,237	1183,292	1254,434	989,959	1598,347	1945,535	1105,421	1181,418
DK	2934,516	2792,421	586,352	2188,227	3234,513	1315,526	2875,764	1118,537	3492,581	438,990	1628,632	515,644	948,135	2629,069	1692,220	1917,968	403,448
DL	3117,604	2644,134	1502,744	2683,615	3223,372	1988,566	3154,517	905,455	3068,699	1599,974	1572,264	1183,799	808,065	1993,425	2289,122	693,675	1212,941
DM	2547,260	2315,750	306,198	1877,789	2801,994	1015,286	2516,272	554,777	2979,267	384,666	1111,328	595,413	822,061	2074,120	1392,622	1691,554	303,424
DN	1237,031	705,028	2761,828	1779,437	906,722	2224,925	1414,539	2391,228	196,573	2933,645	1710,979	3358,157	3322,983	883,532	2014,314	3543,728	3107,552
DO	1198,314	542,797	2389,168	1565,211	989,376	1893,563	1356,895	1999,972	576,067	2563,398	1332,956	2968,729	2931,438	521,967	1723,140	3172,334	2721,077
DP	2915,779	2776,870	570,695	2168,103	3217,058	1296,034	2856,362	1114,964	3478,853	420,469	1616,020	533,105	963,769	2619,362	1672,238	1933,240	410,005
DQ	3254,601	2917,725	1108,313	2650,691	3455,387	1813,218	3247,244	935,855	3483,795	1119,616	1710,226	446,861	21,633	2461,006	2180,597	966,719	621,619
DR	1436,243	798,534	1936,579	1504,750	1374,747	1565,377	1552,909	1475,506	1122,396	2115,691	889,297	2452,945	2393,024	177,629	1497,938	2633,385	2219,168
DS	3133,163	2957,559	769,025	2402,440	3419,159	1524,987	3081,587	1172,819	3637,250	648,340	1767,885	352,800	791,154	2733,336	1905,657	1755,074	399,005
DT	1202,509	747,302	2871,920	1807,696	835,259	2308,036	1383,175	2525,849	41,437	3041,363	1828,622	3487,333	3463,162	1039,255	2076,764	3699,207	3231,954
DU	2252,027	1956,697	509,259	1661,147	2470,167	880,305	2242,754	236,890	2592,977	676,043	738,488	939,381	1021,243	1670,129	1213,827	1717,120	682,246
DV	3487,582	2983,702	1891,461	3083,356	3568,548	2397,353	3533,221	1314,243	3349,043	1975,717	1961,649	1464,001	1038,024	2271,088	2696,030	414,484	1551,300
DW	780,557	1183,940	1845,222	241,290	1206,915	1077,007	633,344	2045,591	1910,235	1939,161	1379,739	2668,320	2885,897	1862,206	695,779	3580,955	2367,995
DX	3382,262	3222,459	1024,262	2637,006	3676,845	1764,660	3324,803	1434,394	3906,088	887,229	2036,757	527,159	920,426	3001,518	2141,219	1843,495	660,462
DY	1104,994	765,722	2950,808	1778,909	703,018	2349,113	1286,014	2647,251	183,848	3115,949	1924,805	3596,558	3593,106	1211,575	2090,658	3865,187	3333,353
DZ	1223,647	832,145	1408,923	962,634	1366,082	924,373	1269,381	1157,368	1503,059	1579,016	386,621	2062,305	2111,173	827,218	856,015	2585,041	1790,500
EA	1437,101	1210,200	995,981	898,137	1676,440	502,064	1428,648	927,337	1928,917	1157,810	281,704	1717,163	1836,654	1240,054	570,307	2451,354	1428,930
EB	3220,179	2949,035	932,549	2557,189	3458,531	1689,133	3194,040	1004,490	3567,702	895,177	1730,403	126,063	329,134	2587,778	2069,520	1291,112	402,573
EC	1693,383	1100,313	1709,863	1607,423	1686,844	1468,947	1787,514	1172,674	1467,972	1890,419	728,402	2152,571	2064,447	418,626	1489,040	2285,814	1936,098
ED	390,287	303,384	2336,675	991,817	329,342	1653,646	558,541	2193,249	872,193	2485,925	1415,863	3066,575	3144,820	1192,307	1348,518	3595,881	2781,465
EE	2777,001	2484,046	627,348	2150,341	3000,800	1308,910	2760,744	542,808	3100,278	680,507	1265,368	437,677	517,349	2130,326	1676,968	1372,573	291,431
EF	3433,302	3223,112	1073,137	2718,619	3704,248	1839,601	3388,898	1344,815	3877,342	970,316	2014,899	369,112	690,592	2931,196	2222,203	1588,598	606,318
EG	213,565	482,713	2380,607	929,349	288,804	1667,815	391,155	2290,504	1010,680	2521,917	1511,486	3134,288	3235,386	1371,082	1336,384	3723,299	2844,117
EH	1912,200	1306,767	1770,967	1819,826	1890,274	1618,193	2008,729	1163,990	1605,483	1950,036	869,097	2130,828	1998,209	526,972	1673,735	2133,298	1938,307
EI	1191,380	546,937	1995,020	1336,249	1124,452	1530,751	1315,010	1612,971	954,322	2170,124	937,691	2576,552	2553,130	363,072	1403,174	2851,624	2326,150
EJ	2597,130	2302,461	536,631	1981,524	2818,699	1154,458	2583,227	383,991	2924,097	634,478	1083,707	605,707	684,446	1966,484	1514,867	1475,324	392,800
EK	894,566	1202,383	1663,616	135,237	1306,971	895,625	767,816	1877,774	1957,111	1758,028	1236,023	2486,939	2707,681	1805,539	515,233	3414,308	2186,658
EL	1579,843	1130,673	1275,351	1279,497	1694,216	1001,178	1628,912	865,243	1707,722	1454,901	255,766	1821,331	1816,461	811,804	1064,305	2233,380	1572,321
EM	1195,732	524,818	2238,289	1480,913	1040,720	1757,795	1342,536	1846,694	724,997	2413,137	1181,154	2814,844	2780,039	411,924	1604,484	3037,129	2567,206
EN	2677,844	2177,215	1404,200	2310,522	2760,340	1712,921	2727,308	686,739	2587,993	1543,823	1174,225	1369,082	1105,398	1513,371	1963,228	1163,564	1288,506
EO	2357,449	2089,922	391,394	1731,230	2591,752	907,650	2338,842	341,797	2739,052	543,399	876,112	803,473	934,222	1825,167	1264,749	1702,132	533,985
EP	3817,466	3355,760	1968,235	3340,289	3933,872	2581,698	3846,704	1530,370	3770,269	2012,625	2258,524	1359,356	922,649	2692,217	2914,822	71,694	1531,547
EQ	3436,628	3005,745	1550,735	2931,647	3575,634	2161,708	3457,388	1121,807	3471,055	1602,944	1870,253	1001,532	563,724	2401,852	2498,749	446,723	1135,257
ER	1649,171	1148,671	1386,857	1408,601	1726,906	1153,219	1712,227	906,735	1664,332	1567,333	405,080	1881,122	1840,966	704,278	1214,686	2189,970	1646,366
ES	2707,610	2533,303	343,372	1988,145	2991,397	1109,076	2659,432	849,852	3222,832	258,544	1355,465	519,711	883,652	2349,717	1492,005	1827,849	258,799
ET	2268,402	2163,138	194,672	1521,739	2578,572	647,244	2207,542	883,469	2892,215	233,054	1076,413	992,676	1305,644	2123,158	1025,137	2192,124	703,466

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KOTA	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY
A	1576,118	1172,711	2518,195	1224,827	2102,314	1358,106	2697,599	661,461	2250,860	1668,394	923,018	2114,686	429,197	2522,633	442,289	1706,572	1128,690
B	1893,081	2857,569	1143,124	2917,257	961,138	336,506	1984,454	1536,060	1834,545	256,564	2124,214	1636,498	1932,617	1595,606	2094,273	416,125	1146,963
C	983,246	3047,000	1133,382	3215,884	850,565	1730,968	450,787	2591,882	171,026	1452,251	1895,680	139,262	2138,574	507,055	2669,801	1292,653	1137,949
D	2674,076	1336,013	3428,180	1189,673	3060,989	2087,302	3771,112	867,682	3343,369	2479,002	1895,498	3197,562	1394,723	3555,861	785,495	2568,818	2195,775
E	1851,225	3569,123	69,231	3688,565	437,385	1413,017	1079,082	2593,881	1244,740	1007,246	2548,369	1107,079	2591,878	652,150	2964,122	887,029	1498,040
F	1879,611	876,622	2914,201	878,009	2499,152	1720,118	3071,176	764,294	2610,478	2050,534	1074,241	2484,166	574,186	2911,479	47,074	2096,312	1513,779
G	508,992	2265,813	1453,675	2423,198	1005,726	1258,792	1261,300	1843,694	805,096	1165,011	1153,735	672,309	1332,884	1164,605	1859,252	1051,981	382,782
H	1934,297	1410,090	2590,029	1397,243	2212,886	1288,820	2933,783	247,778	2524,469	1660,676	1347,312	2369,010	849,763	2706,768	553,176	1736,749	1365,057
I	555,714	2265,536	1427,878	2419,356	977,492	1208,591	1277,436	1807,637	832,325	1116,882	1165,088	690,974	1324,547	1163,598	1840,873	1005,684	341,697
J	1944,726	441,192	3220,139	478,481	2786,951	2107,211	3244,043	1197,602	2755,668	2409,844	1017,209	2654,480	656,410	3136,008	420,595	2437,387	1749,771
K	1329,080	804,480	2899,678	1004,973	2446,652	2052,778	2705,464	1553,669	2196,001	2252,610	370,005	2130,136	485,242	2672,887	931,181	2231,727	1391,604
L	312,195	2265,173	1589,216	2437,032	1154,612	1473,784	1227,825	1996,184	731,016	1376,802	1114,842	647,093	1375,182	1207,359	1938,079	1258,814	570,737
M	2186,907	3672,724	433,175	3765,053	733,485	1274,762	1580,214	2494,471	1701,277	894,911	2751,828	1541,718	2702,533	1150,514	2982,436	849,632	1674,839
N	1192,559	3222,913	954,510	3385,059	740,648	1727,452	343,634	2672,005	379,348	1410,115	2083,279	329,953	2295,937	287,587	2805,193	1248,360	1250,960
O	1326,217	830,832	2953,099	1042,701	2499,040	2144,226	2715,524	1666,734	2203,004	2332,035	391,281	2146,923	595,185	2700,788	1037,102	2305,313	1451,161
P	2688,485	876,621	3761,276	674,111	3356,250	2498,687	3931,970	1333,688	3462,080	2861,572	1783,544	3343,225	1367,090	3778,616	820,289	2924,850	2380,740
Q	1339,198	818,912	2965,128	1031,303	2511,105	2152,897	2728,562	1668,376	2216,038	2342,154	404,011	2159,935	599,471	2713,666	1034,262	2315,972	1462,762
R	2432,793	478,979	3679,442	276,848	3254,088	2500,423	3737,007	1438,277	3249,019	2831,831	1490,725	3147,297	1148,157	3622,840	742,847	2873,962	2230,728
S	2351,395	1007,925	3264,862	896,420	2871,816	1979,831	3511,016	813,261	3062,931	2349,153	1535,822	2928,374	1046,207	3326,138	431,802	2419,199	1939,263
T	293,015	2113,009	1688,042	2283,824	1243,557	1440,401	1380,627	1875,853	884,509	1386,550	967,337	797,564	1222,437	1346,465	1789,661	1282,076	501,881
U	1666,849	465,967	3146,301	657,167	2698,192	2179,058	3027,305	1473,915	2522,352	2426,898	705,088	2445,596	571,357	2970,663	745,067	2426,502	1637,744
V	2754,441	910,532	3830,766	700,258	3426,189	2565,300	4001,325	1394,930	3530,717	2929,520	1845,360	3412,466	1434,127	3848,709	890,409	2993,602	2450,779
W	808,282	1344,625	2348,487	1521,935	1894,118	1647,984	2148,238	1510,635	1644,312	1778,347	220,810	1567,348	537,629	2104,029	1151,823	1733,896	856,977
X	2363,642	313,402	3693,628	96,047	3260,495	2558,453	3695,144	1549,194	3199,379	2873,871	1408,016	3107,230	1120,208	3601,445	810,630	2906,273	2220,683
Y	1023,000	2231,703	1346,739	2345,563	913,592	710,721	1594,481	1417,236	1242,411	708,467	1299,871	1062,262	1254,131	1352,178	1636,025	650,760	254,230
Z	3085,296	1670,491	3741,295	1493,828	3395,852	2373,487	4149,782	1173,269	3734,702	2775,704	2311,684	3583,142	1811,784	3915,974	1201,816	2879,381	2579,088
AA	178,216	2220,417	1714,158	2400,363	1284,374	1594,809	1279,630	2055,006	769,016	1510,201	1057,012	717,681	1363,845	1299,025	1945,379	1394,108	671,253
AB	1272,530	1508,472	2111,610	1595,183	1689,893	1041,674	2296,859	829,402	1866,153	1300,963	885,268	1719,866	571,349	2109,260	857,029	1320,482	721,672
AC	937,850	2926,060	1025,222	3086,036	683,633	1517,105	621,342	2394,002	337,925	1244,438	1793,988	148,408	1995,240	522,015	2505,547	1086,103	955,421
AD	1299,580	3113,604	597,818	3251,098	261,237	1291,175	793,802	2337,779	754,540	944,256	2042,107	585,746	2146,544	427,126	2584,976	783,600	1043,197
AE	2318,394	1793,803	2673,486	1739,560	2349,325	1297,852	3180,208	229,020	2815,998	1702,520	1806,263	2644,601	1314,161	2904,130	948,873	1813,650	1661,915
AF	1174,003	962,749	2698,944	1146,342	2246,258	1864,400	2531,044	1451,518	2025,570	2054,513	221,840	1950,724	361,332	2484,069	913,085	2031,285	1190,121
AG	2225,608	3753,263	407,774	3848,801	764,197	1371,706	1551,569	2591,495	1702,997	987,701	2817,145	1551,037	2780,895	1126,675	3071,285	934,561	1740,644
AH	675,740	2625,842	1220,246	2787,040	809,373	1401,468	896,172	2159,201	471,432	1200,284	1494,824	311,236	1699,548	816,469	2222,147	1055,881	694,719
AI	0,000	2131,080	1890,726	2320,250	1462,443	1733,277	1400,357	2101,243	884,984	1671,883	962,094	862,745	1324,236	1454,786	1923,908	1560,970	791,250
AJ	2131,080	0,000	3576,441	227,759	3133,218	2525,588	3492,763	1634,534	2988,286	2809,380	1169,001	2910,099	977,806	3429,114	858,400	2824,694	2076,904
AK	1890,726	3576,441	0,000	3692,175	454,472	1381,279	1147,791	2571,736	1304,227	974,598	2568,723	1162,028	2598,697	720,001	2958,618	861,966	1510,852
AL	2320,250	227,759	3692,175	0,000	3255,399	2581,911	3664,226	1603,407	3164,915	2888,256	1360,448	3077,875	1104,559	3581,313	849,096	2915,424	2208,791
AM	1462,443	3133,218	454,472	3255,399	0,000	1104,624	1037,622	2222,840	1009,507	727,396	2114,295	831,782	2156,526	634,850	2544,531	573,810	1060,685
AN	1733,277	2525,588	1381,279	2581,911	1104,624	0,000	2065,821	1219,794	1832,992	406,739	1840,945	1636,662	1612,955	1716,085	1757,776	535,765	948,899
AO	1400,357	3492,763	1147,791	3664,226	1037,622	2065,821	0,000	3011,278	515,396	1736,432	2335,621	590,028	2589,299	432,650	3118,210	1575,071	1575,858
AP	2101,243	1634,534	2571,736	1603,407	2222,840	1219,794	3011,278	0,000	2629,425	1614,007	1578,387	2463,424	1090,250	2754,096	777,078	1710,040	1469,248
AQ	884,984	2988,286	1304,227	3164,915	1009,507	1832,992	515,396	2629,425	0,000	1578,027	1826,000	198,323	2105,317	666,688	2657,199	1421,042	1161,824
AR	1671,883	2809,380	974,598	2888,256	727,396	406,739	1736,432	1614,007	1578,027	0,000	1989,541	1380,018	1855,751	1357,279	2091,394	161,756	960,121
AS	962,094	1169,001	2568,723	1360,448	2114,295	1840,945	2335,621	1578,387	1826,000	1989,541	0,000	1761,636	515,197	2310,444	1110,006	1949,753	1077,000
AT	862,745	2910,099	1162,028	3077,875	831,782	1636,662	590,028	2463,424	198,323	1380,018	1761,636	0,000	1999,421	598,820	2531,147	1223,432	1004,117
AU	1324,236	977,806	2598,697	1104,559	2156,526	1612,955	2589,299	1090,250	2105,317	1855,751	515,197	1999,421	0,000	2481,504	614,487	1858,192	1104,602
AV	1454,786	3429,114	720,001	3581,313	634,850	1716,085	432,650	2754,096	666,688	1357,279	2310,444	598,820	2481,504	0,000	2958,355	1199,266	1398,531
AW	1923,908	858,400	2958,618	849,096	2544,531	1757,776	3118,210	777,078	2657,199	2091,394	1110,006	2531,147	614,487	2958,355	0,000	2138,789	1560,743
AX	1560,970	2824,694	861,966	2915,424	573,810	535,765	1575,071	1710,040	1421,042	161,756	1949,753	1223,432	1858,192	1199,266	2138,789	0,000	891,224
AY	791,250	2076,904	1510,852	2208,791	1060,685	948,899	1575,858	1469,248	1161,824	960,121	1077,000	1004,117	1104,602	1398,531	1560,743	891,224	0,000
AZ	1653,807	3472,303	325,678	3604,613	388,624	1480,984	826,197	2611,400	994,132	1089,091	2410,174	868,384	2500,909	395,506	2916,176	945,423	1396,418
BA	2477,003	849,467	3506,356	692,407	3103,003	2244,655	3694,857	1092,627	3231,264	2606,097	1600,016	3107,419	1152,882	3532,570	576,840	2669,179	2136,212
BB	1834,795	2565,806	1432,866	2613,757	1179,914	103,586	2155,866	1204,758	1932,410	463,350	1918,184	1735,637	1669,780	1798,753	1781,000	606,572	1048,653
BC	508,717	2482,464	1383,284	2649,243	962,682	1443,400	1017,222	2105,195	543,386	1285,032	1340,239	428,672	1572,647	977,475	2114,932	1150,579	638,036
BD	2349,000	1485,161	2940,575	1406,787	2585,824	1589,322	3344,791	370,195	2942,767	1984,200	1698,843	2784,831	1184,736	3103,988	687,164	2079,230	1781,871
BE	493,077	2173,409	1526,817	2330,248	1075,716	1245,972	1353,006	1772,181	891,045	1182,805	1066,419	763,488	1239,978	1256,359	1769,372	1079,473	330,048
BF	1096,686	1773,324	1818,783	1876,013	1391,231	867,785	2008,185	1044,259	1594,773	1057,666	973,333	1438,889	803,359	1808,673	1159,292	1054,834	434,775
BG	1687,489	461,850	3235,387	679,230	2784,519	2306,774	3066,730	1624,760	2557,050	2542,282	731,175	2491,042	693,897	3030,353	892,292	2535,312	1724,538
BH	463,600	1681,509	2114,937	1864,170	1663,077	1620,898	1817,092	1730,472	1308,220	1671,278	518,556	1244,330	865,078	1802,323	1471,938	1598,097	711,181
BI	973,934	2067,204	1510,429	2182,468	1074,225	780,437	1701,426	1316,865	1315,297	845,059	1147,750	1146,571	1089,543	1485,910	1483,911	803,299	186,271
BJ	324,607	1832,356	1995,287	2014,019	1546,558	1594,045	1666,348	1809,969	1157,173	1608,429	669,299	1095,347	999,986	1658,650	1599,665	1523,391	655,739
BK	1722,397	898,347	2797,091	938,088	2375,259	1643,832	2922,855	799,530	2458,355	1956,340	928,073	2334,823	420,880	2771,793	201,837	1992,670	1373,263
BL	1667,067	2527,261	1320,600	2590,487	1031,136	80,449	1986,245	1265,191	1752,902	349,756	1808,279	1556,458	1601,368	1638,918	1774,517	466,840	887,354
BM	2819,243	1411,567	3563,593	1248,337	3200,662	2215,190	3917,508	996,113	3490,505	2609,993	2030,680	3344,440	1533,938	3700,002	921,640	2703,092	2342,381
BN	2844,048	1347,414	3643,076	1173,385	3273,384	2303,394	3969,811	1083,718	3534,906	2695,003	2030,153	3393,000	1543,319	3762,076	928,873	2784,179	2393,960
BO	1440,090	1755,108	1960,022	1817,536	1567,737	770,731	2295,339	720,059	1909,803	1077,433	1180,705	1743,450	859,265	2056,213	1015,020	1125,342	751,825
BP	1249,021	2676,129	905,037	2787,847	488,861	714,659	1354,141	1744,812	1133,746	458,312	1718,821	935,543	1698,641	1027,796	2059,461	319,507	641,843
BQ	1370,000	2366,250	1302,000	2451,738	932,802	364,321	1794,062	1290,062	1509,714	447,675	1556,170	1317,653	1408,461	1486,460	1673,308	466,075	591,047
BR	2863,554	1090,482	3856,749	884,173	3463,121	2560,737	4078,585	1362,223	3617,668	2936,402	1975,535	3492,005	1539,322	3908,422	961,001	3009,653	2515,045
BS	1370,350	3448,001	1075,603	3616,541	955,263	1984,724	82,680	2939,080	489,842	1653,941	2295,376	538,677	2536,405	356,923	3058,472	1492,623	1510,676
BT	1749,715	423,795	3153,019	575,840	2709,445	2130,547	3088,486	1356,187	2589,221	2398,620	796,519	2502,513	554,907	3011,658	607,595	2408,262	1653,323
BU	1440,493	2645,098	1012,790	2737,015	669,795	454,670	1611,425	1564,891	1399,657	232,744	1777,793	1201,601	1678,392	1264,801	1965,511	179,825	731,974
BV	1656,486	475,786	3169,091	679,831	2719,471	2223,211	3026,087	1537,346	2518,813	2463,755	694,953	2446,944	611,310	2978,880	811,050	2459,657	1658,824
BW	2196,943	1115,292	3036,080	1044,093	2647,641	1745,756	3312,187	591,486	2875,024	2116,010	1440,703	2733,831	930,817	3114,230	349,322	2187,877	1736,784

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KOTA	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY
BX	2286,501	3771,409	496,327	3861,987	829,673	1357,629	1642,171	2576,157	1784,629	985,431	2854,465	1629,213	2802,277	1216,148	3075,652	947,114	1777,493
BY	527,755	1715,758	1980,467	1882,986	1526,239	1430,100	1781,321	1588,693	1286,422	1489,325	595,626	1195,305	824,152	1722,503	1406,590	1422,449	531,519
BZ	1644,658	3446,349	305,630	3577,090	351,757	1441,516	854,415	2574,522	1003,686	1049,209	2389,804	871,556	2473,864	422,214	2884,544	905,884	1369,765
CA	2380,392	627,781	3525,835	471,832	3109,297	2311,329	3643,893	1217,723	3167,063	2654,974	1468,527	3054,117	1064,249	3506,411	567,670	2705,589	2108,327
CB	2332,206	1725,145	2742,592	1664,623	2411,315	1370,763	3226,636	231,138	2853,290	1773,903	1785,819	2684,798	1286,098	2958,368	888,046	1881,545	1695,083
CC	1068,316	2270,211	1311,482	2380,997	883,629	667,438	1596,152	1419,090	1257,833	657,012	1348,898	1074,291	1293,261	1341,460	1661,878	601,047	305,308
CD	2011,200	3324,446	646,302	3405,705	680,921	878,934	1688,349	2097,479	1687,285	517,722	2463,330	1503,615	2364,985	1261,106	2607,648	514,584	1397,840
CE	532,015	2498,846	1359,943	2664,589	939,670	1431,685	1003,534	2106,815	535,557	1268,246	1358,759	414,035	1585,810	957,046	2124,860	1132,644	638,377
CF	2047,357	322,025	3357,304	338,541	2922,737	2246,478	3363,215	1313,682	2870,856	2549,869	1104,091	2774,399	782,164	3263,667	539,416	2577,018	1881,766
CG	1211,056	2763,824	814,256	2884,200	371,553	864,432	1202,135	1889,477	1002,288	575,876	1766,094	804,190	1786,530	875,563	2176,126	420,954	697,829
CH	141,057	2139,990	1775,136	2320,752	1340,151	1594,949	1360,784	2006,384	850,000	1531,003	976,000	797,516	1289,597	1375,817	1875,608	1421,042	657,141
CI	683,124	2157,449	1461,118	2299,233	1006,814	1050,922	1443,264	1614,684	1018,458	1011,485	1107,773	865,430	1195,815	1288,397	1680,912	921,651	146,373
CJ	2635,851	821,523	3726,749	622,268	3319,089	2473,471	3885,229	1319,894	3413,440	2832,735	1727,824	3296,141	1315,777	3735,788	778,544	2893,431	2337,471
CK	2162,397	1814,512	2489,621	1783,480	2162,052	1117,664	2994,922	180,422	2636,046	1520,611	1706,833	2462,779	1234,525	2716,594	956,620	1628,880	1486,341
CL	2060,024	702,756	3161,964	659,758	2744,592	1965,330	3292,247	944,768	2822,242	2299,343	1191,917	2703,295	735,833	3145,675	208,125	2345,634	1747,159
CM	999,914	1162,155	2484,212	1334,156	2031,309	1686,154	2331,816	1403,868	1830,772	1856,157	179,045	1748,007	365,941	2273,519	977,949	1826,729	976,459
CN	1875,144	1205,600	2690,169	1200,654	2294,883	1434,198	2955,874	447,182	2524,079	1787,502	1204,878	2379,537	693,311	2755,814	352,139	1849,608	1380,056
CO	1240,724	1479,830	2128,066	1571,985	1702,412	1080,534	2288,882	864,139	1851,929	1331,084	837,614	1709,142	533,026	2109,751	850,716	1345,901	716,450
CP	2733,482	813,001	3872,587	594,013	3460,983	2629,525	4005,000	1480,692	3527,219	2985,615	1807,609	3415,184	1422,955	3866,195	916,559	3043,545	2467,796
CQ	2201,809	3569,378	602,702	3651,009	794,484	1114,833	1728,938	2329,090	1797,392	762,923	2696,244	1625,084	2608,569	1296,295	2851,762	753,449	1624,981
CR	1606,567	3385,970	307,924	3515,100	283,637	1375,177	883,698	2506,370	997,088	984,594	2336,007	854,626	2412,460	451,686	2818,945	839,774	1309,075
CS	2390,845	1315,771	3105,839	1218,657	2736,832	1772,877	3454,163	558,348	3033,494	2160,700	1667,894	2883,908	1154,671	3233,432	585,844	2247,496	1880,457
CT	909,797	1261,311	2390,970	1431,823	1937,541	1626,641	2233,285	1419,805	1733,226	1781,002	214,367	1649,005	429,694	2174,276	1043,918	1746,147	886,141
CU	2380,316	299,708	3871,598	313,383	3426,818	2823,440	3757,597	1899,085	3249,062	3109,079	1423,141	3179,233	1274,123	3708,779	1130,763	3124,079	2368,498
CV	1437,028	3488,798	962,925	3652,277	874,649	1931,359	185,068	2921,372	571,833	1587,147	2344,829	583,672	2564,049	251,746	3071,767	1426,969	1515,140
CW	1362,944	3099,038	530,665	3228,643	128,016	1175,838	926,779	2255,499	881,511	816,838	2054,482	704,716	2125,704	542,006	2539,007	657,761	1022,145
CX	2493,290	377,131	3950,267	301,347	3508,342	2871,483	3864,016	1904,239	3357,431	3168,604	1533,135	3283,127	1351,925	3805,586	1149,408	3189,565	2453,219
CY	2155,644	3756,509	285,955	3860,069	696,501	1433,021	1414,102	2649,453	1590,165	1036,031	2789,301	1446,821	2780,425	993,844	3097,908	961,002	1717,386
CZ	2398,790	267,711	3819,618	155,438	3379,746	2728,214	3758,639	1758,843	3255,028	3028,807	1436,709	3175,031	1223,814	3689,386	1002,960	3052,202	2327,715
DA	1454,643	1637,565	2073,400	1697,782	1675,313	888,091	2374,511	662,192	1973,902	1197,379	1112,490	1813,576	757,492	2149,151	895,940	1243,277	812,081
DB	2244,135	651,332	3363,955	545,619	2947,929	2152,994	3492,032	1080,867	3018,862	2494,193	1350,607	2902,646	921,982	3349,018	405,739	2543,945	1950,573
DC	1229,069	3023,543	661,910	3160,704	271,459	1230,629	839,434	2256,615	742,195	898,909	1955,261	560,904	2056,154	500,036	2495,547	737,197	952,748
DD	1263,716	1945,750	1697,335	2030,407	1294,169	638,464	2020,864	990,437	1649,914	864,026	1204,708	1477,623	995,617	1775,964	1262,230	885,528	511,376
DE	1108,120	1050,274	2584,057	1222,258	2132,084	1745,549	2443,926	1379,150	1942,733	1933,497	213,354	1860,000	302,794	2383,675	898,947	1910,671	1073,932
DF	559,521	1681,036	2006,488	1847,601	1552,094	1431,721	1816,802	1563,317	1322,262	1500,642	566,079	1230,498	788,384	1755,622	1371,992	1437,153	545,990
DG	2539,241	410,206	3966,001	284,185	3526,524	2866,071	3902,948	1873,240	3398,406	3170,818	1577,515	3320,018	1370,810	3836,009	1129,615	3196,005	2474,817
DH	1062,452	2963,317	851,189	3112,824	491,753	1374,804	702,636	2320,623	524,765	1076,998	1858,122	340,414	2011,925	470,129	2490,996	916,413	930,301
DI	1661,068	657,508	2937,311	755,154	2500,311	1871,290	2948,125	1102,550	2461,456	2152,128	762,079	2358,416	359,801	2840,119	400,671	2170,033	1456,923
DJ	1612,498	2691,475	1075,169	2769,187	792,692	313,944	1774,856	1503,069	1582,243	119,541	1886,510	1383,980	1740,392	1411,370	1971,919	221,822	876,088
DK	532,358	2653,865	1539,912	2836,963	1171,633	1785,740	871,519	2428,531	357,561	1602,829	1486,435	391,900	1801,247	984,210	2375,738	1459,306	972,825
DL	1772,091	3078,811	698,946	3165,766	554,994	695,589	1592,573	1909,507	1521,270	296,285	2205,302	1329,498	2114,677	1183,300	2379,201	258,070	1140,342
DM	556,087	2336,728	1383,874	2492,629	937,666	1245,931	1199,592	1880,802	755,499	1129,476	1227,066	612,870	1399,832	1092,876	1918,830	1010,006	412,238
DN	2945,709	1663,383	3550,200	1505,919	3209,419	2179,852	3978,733	986,936	3572,026	2582,911	2207,046	3416,690	1698,600	3736,774	1101,368	2688,518	2412,870
DO	2584,483	1549,148	3166,427	1436,989	2819,977	1803,247	3588,900	597,227	3187,208	2203,294	1900,067	3029,426	1385,059	3345,037	832,640	2304,462	2026,438
DP	510,941	2633,671	1556,555	2817,242	1185,118	1785,913	893,537	2417,967	379,684	1607,734	1465,984	411,539	1783,536	1005,028	2359,516	1465,270	965,001
DQ	1294,853	3098,246	599,241	3234,893	247,073	1269,709	813,748	2316,767	764,980	923,719	2029,860	593,196	2130,371	448,759	2566,445	762,921	1026,575
DR	2161,405	1649,539	2619,990	1610,124	2275,227	1262,000	3069,798	60,811	2689,524	1659,017	1629,089	2523,079	1136,631	2810,231	795,291	1758,048	1529,614
DS	762,980	2868,405	1363,417	3046,256	1036,356	1790,742	637,377	2542,512	122,053	1558,583	1705,075	205,448	1991,224	760,978	2548,809	1405,276	1073,268
DT	3046,227	1650,436	3700,617	1477,222	3354,658	2333,416	4108,487	1132,166	3693,801	2735,391	2276,506	3542,033	1775,352	3874,539	1166,503	2838,683	2537,962
DU	800,068	2099,906	1487,232	2231,212	1037,197	936,812	1560,239	1479,211	1150,695	940,592	1100,404	990,745	1127,172	1378,752	1579,973	869,807	23,707
DV	2151,116	3470,121	656,775	3548,693	781,476	1004,117	1754,989	2216,921	1790,788	660,982	2614,069	1612,371	2512,943	1323,306	2745,600	665,217	1547,963
DW	1837,857	329,509	3376,685	555,023	2926,848	2419,877	3217,780	1675,099	2708,074	2667,579	882,227	2641,888	812,428	3179,819	916,857	2665,608	1866,263
DX	975,461	3102,494	1438,656	3286,137	1180,019	2029,829	480,817	2811,687	196,881	1771,098	1934,397	393,997	2245,481	755,008	2811,056	1613,165	1342,465
DY	3109,638	1571,776	3852,670	1381,804	3495,232	2495,348	4217,768	1281,211	3789,746	2893,792	2298,544	3644,405	1811,856	3999,146	1197,373	2991,166	2642,574
DZ	1592,208	1245,287	2471,237	1291,326	2060,631	1290,591	2681,406	599,733	2242,888	1608,575	979,065	2101,712	496,681	2495,184	488,109	1651,670	1107,560
EA	1156,707	1304,946	2273,592	1420,909	1834,586	1304,522	2324,899	1011,536	1859,842	1529,707	610,797	1736,314	329,607	2187,064	797,386	1529,016	794,008
EB	1058,419	3016,750	902,931	3171,873	583,104	1490,537	593,372	2421,653	426,517	1192,272	1895,491	259,979	2075,312	415,008	2569,533	1031,415	1010,464
EC	1959,000	1834,425	2273,331	1832,075	1936,188	914,158	2763,156	306,193	2407,424	1310,694	1577,016	2232,818	1139,496	2485,707	984,329	1411,410	1262,623
ED	2450,284	802,100	3503,730	646,480	3097,420	2251,687	3677,631	1111,731	3211,229	2609,433	1566,169	3089,524	1126,116	3520,366	562,161	2669,832	2122,904
EE	858,175	2601,450	1063,227	2744,413	616,231	1117,678	1052,842	1958,540	721,435	909,766	1525,847	530,615	1640,845	848,411	2110,604	768,032	550,173
EF	1093,549	3184,216	1182,388	3356,952	951,766	1880,239	309,364	2753,328	211,625	1588,503	2026,280	295,081	2286,506	495,564	2824,548	1427,597	1298,276
EG	2473,569	665,256	3615,779	484,175	3200,766	2392,258	3738,809	1280,018	3261,878	2739,829	1557,722	3149,037	1158,700	3600,617	657,180	2792,704	2202,391
EH	2035,941	2055,892	2153,062	2053,937	1846,562	773,336	2728,448	495,631	2406,116	1179,513	1744,445	2223,306	1333,021	2424,271	1206,391	1297,213	1295,415
EI	2195,823	1432,556	2817,160	1376,781	2453,619	1481,165	3197,331	271,693	2791,609	1869,309	1560,640	2635,007	1048,945	2962,441	598,078	1957,711	1631,432
EJ	803,866	2429,183	1196,717	2568,463	742,529	1025,053	1226,000	1789,143	858,522	881,305	1373,841	679,117	1464,122	1030,263	1928,471	759,953	368,307
EK	1658,422	485,874	3203,466	700,406	2752,576	2277,649	3036,394	1606,373	2527,005	2511,625	701,018	2460,270	664,694	2998,901	880,184	2504,142	1692,616
EL	1507,406	1597,200	2137,043	1650,409	1741,415	931,760	2442,285	601,122	2039,696	1252,458	1124,422	1880,367	742,590	2217,414	838,962	1302,922	878,022
EM	2436,967	1507,670	3022,728	1416,310	2671,481	1666,077	3435,079	451,009	3033,503	2063,320	1774,014	2875,497	1259,044	3192,743	737,610	2160,979	1872,593
EN	1695,581	2677,288	1165,379	2745,892	903,615	216,171	1891,138	1430,003	1695,537	190,801	1916,933	1497,387	1739,777	1525,735	1935,409	329,912	939,915
EO	683,948	2180,085	1440,868	2322,122	986,471	1052,135	1421,466	1632,738	999,090	1003,758	1127,865	844,569	1218,762	1265,405	1703,468	910,996	163,518
EP	2190,649	3753,695	346,347	3853,112	728,295	1399,173	1485,066	2618,092	1647,792	1008,100	2802,425	1499,723	2779,281	1062,115	3082,826	944,043	1727,514
EQ	1781,156	3352,329	272,523	3459,671	326,741	1108,788	1267,030	2302,857	1317,500	702,086	2382,501	1148,359	2375,379	836,747	2709,658	593,028	1309,489
ER	1630,601	1703,233	2121,359	1740,704	1744,783	851,630	2499,251	513,422	2117,000	1202,667	1277,940	1950,059	885,891	2251,773	907,013	1270,846	958,833
ES	421,514	2453,594	1479,039	2626,489	1064,133	1534,282	1039,174	2150,066	541,477	1387,144	1299,331	463,609	1564,054	1040,481	2122,226	1254,486	693,568
ET	196,431	1987,668	1881,006	2168,838	1437,761	1586,967	1511,962	1905,383	1002,050	1562,168	824,061	944,172	1144,993	1514,611	1737,606	1464,461	638,074

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KOTA	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP
A	2474,052	1010,451	1394,180	1707,546	795,343	1359,818	718,229	1030,897	1152,289	1043,219	1259,659	288,087	1365,662	1250,234	1286,439	593,189	1617,693
B	1302,292	2577,251	331,303	1529,080	1902,790	1400,389	1160,701	2626,074	1851,157	1006,106	1802,543	1979,198	331,717	2526,658	2618,487	1102,743	710,539
C	823,310	3246,178	1827,943	567,121	2916,618	902,656	1572,472	2625,838	1377,631	1275,467	1227,893	2473,699	1650,529	3479,702	3529,201	1872,406	1020,785
D	3447,685	497,636	2071,580	2801,622	500,372	2454,438	1763,011	1572,779	2235,153	2076,108	2353,394	973,903	2131,240	147,177	216,113	1502,068	2575,057
E	259,239	3515,597	1468,374	1342,827	2961,862	1499,523	1818,490	3221,863	2087,726	1506,111	1965,284	2799,737	1349,999	3583,507	3661,452	1971,112	905,806
F	2870,307	623,910	1745,029	2068,132	697,689	1722,478	1113,115	886,001	1428,743	1437,614	1555,526	157,258	1735,622	960,026	970,271	973,536	2014,442
G	1263,396	2435,298	1362,062	264,151	2144,672	93,048	800,236	1866,831	666,108	561,805	541,613	1662,569	1187,472	2685,577	2729,887	1130,682	740,945
H	2598,659	958,175	1293,209	1988,892	420,640	1646,536	930,407	1379,078	1539,016	1233,105	1630,718	554,049	1320,959	993,620	1061,075	651,464	1725,779
I	1246,645	2417,447	1311,876	297,558	2112,597	99,765	765,873	1872,344	687,608	517,349	569,526	1645,479	1137,226	2658,799	2704,793	1092,440	696,581
J	3141,824	617,288	2141,976	2226,894	1078,645	1896,264	1401,862	542,720	1481,270	1712,779	1626,016	465,465	2114,008	1136,891	1102,391	1340,554	2315,189
K	2757,153	1334,044	2118,403	1706,967	1592,137	1421,527	1199,965	361,271	888,381	1431,616	1039,233	791,768	2031,863	1819,139	1800,883	1324,606	2027,116
L	1366,931	2508,791	1576,912	229,924	2279,369	240,751	955,118	1843,949	598,820	756,128	452,093	1737,551	1403,002	2796,121	2833,129	1296,087	943,401
M	755,008	3501,008	1296,446	1693,549	2863,712	1767,786	1900,228	3371,640	2342,807	1626,493	2240,202	2840,720	1234,187	3489,321	3578,136	1967,417	1033,008
N	633,515	3381,939	1819,148	743,347	3008,841	1056,381	1679,315	2810,484	1567,949	1367,231	1420,274	2612,659	1647,539	3587,556	3642,558	1958,181	1013,876
O	2800,167	1418,817	2212,258	1728,448	1702,576	1457,504	1285,222	370,473	902,765	1502,704	1051,701	902,703	2120,785	1915,411	1893,371	1425,294	2090,681
P	3731,499	255,691	2503,866	2922,548	1020,655	2579,867	1977,584	1247,616	2226,071	2302,570	2365,289	1010,032	2527,810	630,892	534,196	1802,515	2868,854
Q	2812,637	1411,667	2220,573	1741,407	1701,366	1470,145	1294,602	358,240	915,765	1513,503	1064,722	901,885	2129,801	1910,081	1887,346	1432,330	2102,086
R	3615,922	433,129	2521,966	2719,958	1198,409	2387,990	1863,090	879,932	1970,057	2181,479	2116,210	883,240	2517,288	977,880	899,067	1754,433	2775,396
S	3252,622	279,873	1982,400	2519,555	530,084	2172,078	1517,584	1205,724	1902,228	1840,559	2027,760	630,601	2011,509	497,112	497,116	1306,075	2382,973
T	1483,338	2358,856	1542,054	372,930	2148,626	203,747	844,077	1694,549	455,927	686,721	315,835	1588,678	1374,052	2654,981	2689,693	1188,445	976,566
U	3027,409	1034,567	2231,705	2018,508	1432,218	1714,305	1372,415	150,864	1215,630	1645,995	1366,435	674,443	2170,254	1555,772	1522,777	1415,729	2253,982
V	3801,573	324,581	2569,521	2991,469	1075,603	2649,058	2047,758	1295,643	2291,724	2372,746	2431,538	1079,754	2595,043	652,334	549,181	1871,736	2938,719
W	2193,434	1683,080	1729,370	1141,475	1676,772	853,150	785,493	926,884	345,324	934,137	493,042	955,586	1610,975	2069,134	2080,686	1029,891	1498,805
X	3614,334	603,680	2586,745	2678,627	1337,215	2354,739	1875,113	748,954	1904,526	2186,362	2053,377	917,990	2569,926	1156,215	1079,505	1799,094	2788,633
Y	1280,207	2201,328	812,863	771,114	1757,079	535,728	478,282	1909,412	963,756	164,712	909,479	1462,846	644,152	2347,929	2410,169	706,208	444,528
Z	3784,333	825,109	2343,630	3195,292	812,503	2849,478	2144,390	1956,177	2649,725	2448,946	2765,925	1390,954	2425,981	283,341	323,200	1861,099	2915,955
AA	1482,086	2509,822	1697,463	335,407	2323,763	349,594	1024,645	1788,123	539,335	857,422	388,290	1743,702	1525,657	2821,489	2853,283	1369,001	1079,379
AB	2059,369	1425,598	1099,138	1325,934	1091,146	980,397	302,597	1265,101	911,412	627,615	981,901	685,930	1031,721	1625,064	1673,486	300,847	1208,022
AC	742,647	3082,368	1614,309	456,177	2724,456	756,239	1386,960	2518,162	1282,532	1080,949	1137,620	2312,418	1436,674	3296,292	3349,194	1676,249	808,013
AD	368,635	3154,243	1375,913	790,869	2692,064	977,581	1426,371	2739,560	1560,670	1101,356	1430,825	2405,152	1213,406	3295,124	3361,024	1650,234	601,839
AE	2737,270	1165,374	1265,166	2299,879	366,958	1973,096	1246,467	1822,136	1955,688	1500,713	2031,787	1000,981	1353,627	951,135	1052,913	910,383	1882,707
AF	2559,868	1383,370	1933,048	1524,689	1534,093	1229,478	1005,454	546,882	719,242	1230,386	869,874	743,275	1840,753	1828,600	1822,981	1151,838	1825,263
AG	733,377	3593,196	1395,165	1726,825	2960,976	1818,679	1979,994	3445,903	2398,348	1700,085	2291,736	2927,184	1329,558	3586,743	3675,022	2056,463	1100,038
AH	978,461	2798,730	1503,597	168,630	2476,494	459,619	1129,315	2217,915	986,002	844,001	843,534	2026,691	1322,908	3033,436	3081,770	1439,272	741,978
AI	1653,807	2477,003	1834,795	508,717	2349,000	493,077	1096,686	1687,489	463,600	973,934	324,607	1722,397	1667,067	2819,243	2844,048	1440,090	1249,021
AJ	3472,303	849,467	2565,806	2482,464	1485,161	2173,409	1773,324	461,850	1681,509	2067,204	1832,356	898,347	2527,261	1411,567	1347,414	1755,108	2676,129
AK	325,678	3506,356	1432,866	1383,284	2940,575	1526,817	1818,783	3235,387	2114,937	1510,429	1995,287	2797,091	1320,600	3563,593	3643,076	1960,022	905,037
AL	3604,613	692,407	2613,757	2649,243	1406,787	2330,248	1876,013	679,230	1864,170	2182,468	2014,019	938,088	2590,487	1248,337	1173,385	1817,536	2787,847
AM	388,624	3103,003	1179,914	962,682	2585,824	1075,716	1391,231	2784,519	1663,077	1074,225	1546,558	2375,259	1031,136	3200,662	3273,384	1567,737	488,861
AN	1480,984	2244,655	103,586	1443,400	1589,322	1245,972	867,785	2306,774	1620,898	780,437	1594,045	1643,832	80,449	2215,190	2303,394	770,731	714,659
AO	826,197	3694,857	2155,866	1017,222	3344,791	1353,006	2008,185	3066,730	1817,092	1701,426	1666,348	2922,855	1986,245	3917,508	3969,811	2295,339	1354,141
AP	2611,400	1092,627	1204,758	2105,195	370,195	1772,181	1044,259	1624,760	1730,472	1316,865	1809,969	799,530	1265,191	996,113	1083,718	720,059	1744,812
AQ	994,132	3231,264	1932,410	543,386	2942,767	891,045	1594,773	2557,050	1308,220	1315,297	1157,173	2458,355	1752,902	3490,505	3534,906	1909,803	1133,746
AR	1089,091	2606,097	463,350	1285,032	1984,200	1182,805	1057,666	2542,282	1671,278	845,059	1608,429	1956,340	349,756	2609,993	2695,003	1077,433	458,312
AS	2410,174	1600,016	1918,184	1340,239	1698,843	1066,419	973,333	731,175	518,556	1147,750	669,299	928,073	1808,279	2030,680	2030,153	1180,705	1718,821
AT	868,384	3107,419	1735,637	428,672	2784,831	763,488	1438,889	2491,042	1244,330	1146,571	1095,347	2334,823	1556,458	3344,440	3393,000	1743,450	935,543
AU	2500,909	1152,882	1669,780	1572,647	1184,736	1239,978	803,359	693,897	865,078	1089,543	999,986	420,880	1601,368	1533,938	1543,319	859,265	1698,641
AV	395,506	3532,570	1798,753	977,475	3103,988	1256,359	1808,673	3030,353	1802,323	1485,910	1658,650	2771,793	1638,918	3700,002	3762,076	2056,213	1027,796
AW	2916,176	576,840	1781,000	2114,932	687,164	1769,372	1159,292	892,292	1471,938	1483,911	1599,665	201,837	1774,517	921,640	928,873	1015,020	2059,461
AX	945,423	2669,179	606,572	1150,579	2079,230	1079,473	1054,834	2535,312	1598,097	803,299	1523,391	1992,670	466,840	2703,092	2784,179	1125,342	319,507
AY	1396,418	2136,212	1048,653	638,036	1781,871	330,048	434,775	1724,538	711,181	186,271	655,739	1373,263	887,354	2342,381	2393,960	751,825	641,843
AZ	0,000	3479,380	1550,216	1146,683	2974,025	1346,184	1757,957	3104,388	1928,967	1435,460	1798,017	2742,036	1410,105	3587,854	3659,576	1951,324	872,886
BA	3479,380	0,000	2251,344	2689,790	801,984	2345,042	1728,056	1143,082	2017,555	2053,083	2152,585	773,078	2272,988	562,140	502,475	1547,167	2615,208
BB	1550,216	2251,344	0,000	1546,818	1571,638	1348,413	945,410	2362,448	1713,663	877,490	1690,582	1676,933	180,693	2195,852	2287,295	816,767	808,970
BC	1146,683	2689,790	1546,818	0,000	2408,605	347,761	1063,008	2067,172	826,736	807,961	681,446	1916,716	1367,424	2948,792	2992,086	1389,607	831,274
BD	2974,025	801,984	1571,638	2408,605	0,000	2066,917	1348,000	1579,257	1942,174	1643,516	2040,915	800,562	1635,353	626,007	715,732	1051,122	2104,286
BE	1346,184	2345,042	1348,413	347,761	2066,917	0,000	727,987	1776,326	588,260	515,396	473,080	1572,100	1177,679	2601,614	2644,393	1064,324	777,006
BF	1757,957	1728,056	945,410	1063,008	1348,000	727,987	0,000	1484,949	826,068	325,042	851,170	984,563	837,927	1909,334	1963,246	344,726	913,760
BG	3104,388	1143,082	2362,448	2067,172	1579,257	1776,326	1484,949	0,000	1249,640	1745,818	1400,463	825,264	2295,025	1678,252	1638,971	1548,551	2350,557
BH	1928,967	2017,555	1713,663	826,736	1942,174	588,260	826,068	1249,640	0,000	847,305	151,053	1271,649	1569,591	2378,660	2397,630	1140,809	1324,424
BI	1435,460	2053,083	877,490	807,961	1643,516	515,396	325,042	1745,818	847,305	0,000	813,615	1306,775	724,509	2221,576	2279,464	597,006	609,200
BJ	1798,017	2152,585	1690,582	681,446	2040,915	473,080	851,170	1400,463	151,053	813,615	0,000	1398,281	1537,162	2498,078	2521,183	1183,325	1236,012
BK	2742,036	773,078	1676,933	1916,716	800,562	1572,100	984,563	825,264	1271,649	1306,775	1398,281	0,000	1652,946	1113,693	1126,675	881,152	1893,931
BL	1410,105	2272,988	180,693	1367,424	1635,353	1177,679	837,927	2295,025	1569,591	724,509	1537,162	1652,946	0,000	2261,303	2347,324	773,606	634,436
BM	3587,854	562,140	2195,852	2948,792	626,007	2601,614	1909,334	1678,252	2378,660	2221,576	2498,078	1113,693	2261,303	0,000	114,769	1645,048	2715,626
BN	3659,576	502,475	2287,295	2992,086	715,732	2644,393	1963,246	1638,971	2397,630	2279,464	2521,183	1126,675	2347,324	114,769	0,000	1711,342	2786,737
BO	1951,324	1547,167	816,767	1389,607	1051,122	1064,324	344,726	1548,551	1140,809	597,006	1183,325	881,152	773,606	1645,048	1711,342	0,000	1079,120
BP	872,886	2615,208	808,970	831,274	2104,286	777,006	913,760	2350,557	1324,424	609,200	1236,012	1893,931	634,436	2715,626	2786,737	1079,120	0,000
BQ	1321,339	2208,593	467,132	1088,537	1653,469	881,717	610,328	2094,636	1282,655	435,394	1243,628	1526,752	297,379	2270,699	2346,228	661,876	460,405
BR	3843,075	387,621	2557,444	3075,741	1018,426	2730,367	2100,555	1460,214	2403,294	2424,973	2539,279	1159,353	2595,794	512,001	400,216	1898,045	2974,342
BS	752,163	3635,289	2074,393	967,345	3274,720	1297,584	1941,510	3025,949	1776,984	1632,071	1626,779	2864,133	1905,248	3850,652	3904,244	2224,462	1273,798
BT	3049,069	885,874	2177,243	2073,957	1293,539	1757,821	1354,514	287,564	1290,852	1644,416	1440,043	562,226	2127,135	1404,087	1371,745	1361,032	2253,542
BU	1056,080	2501,291	545,220	1067,155	1931,890	950,508	875,034	2356,199	1442,803	630,052	1376,893	1816,464	375,714	2552,870	2630,964	954,755	266,721
BV	3044,056	1091,462	2277,775	2021,136	1498,192	1723,070	1407,284	89,000	1210,661	1673,961	1361,711	737,829	2212,595	1617,221	1582,393	1463,005	2280,465
BW	3030,187	506,354	1748,607	2332,218	370,000	1984,541	1308,772	1227,060	1759,715	1628,648	1876,566	512,640	1777,674	623,032	659,883	1080,080	2158,863

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KOTA	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP
BX	821,926	3590,546	1374,396	1791,397	2944,683	1869,854	1999,564	3472,686	2445,431	1727,949	2342,408	2935,947	1320,237	3569,723	3659,812	2060,777	1135,651
BY	1814,771	1969,172	1522,674	767,006	1823,685	471,275	643,121	1307,851	191,024	658,478	221,416	1204,765	1379,344	2293,364	2320,615	967,856	1159,697
BZ	40,000	3446,794	1510,465	1136,599	2937,571	1327,417	1726,948	3081,142	1911,842	1405,157	1782,399	2711,320	1370,826	3552,039	3624,214	1916,760	837,860
CA	3478,247	223,009	2327,542	2630,393	969,033	2290,908	1720,305	948,129	1917,208	2043,411	2058,249	737,011	2332,513	784,659	720,151	1580,773	2625,510
CB	2799,697	1081,124	1341,457	2332,118	280,801	2001,035	1273,076	1769,593	1958,049	1538,733	2039,766	954,082	1424,396	866,848	967,497	943,764	1940,575
CC	1255,193	2224,299	770,166	799,723	1763,521	578,727	508,335	1952,871	1015,197	207,171	960,084	1491,662	599,101	2359,339	2423,585	714,787	406,872
CD	894,564	3115,562	897,036	1552,186	2466,170	1551,077	1562,692	3046,454	2096,735	1317,771	2011,657	2474,042	843,128	3091,408	3181,168	1594,659	775,774
CE	1123,643	2700,116	1535,013	23,345	2412,392	356,041	1065,773	2084,975	846,218	805,732	701,617	1927,051	1355,337	2955,259	2999,349	1390,201	813,553
CF	3275,602	606,388	2280,453	2346,103	1167,227	2019,236	1539,677	539,708	1585,203	1848,845	1732,200	603,523	2253,720	1154,477	1106,684	1480,353	2452,522
CG	741,974	2737,658	956,732	755,905	2246,395	766,851	1020,525	2421,828	1340,491	702,672	1238,125	2004,967	784,547	2854,154	2923,067	1212,279	153,405
CH	1550,064	2437,799	1696,794	405,423	2267,726	352,366	985,292	1707,075	458,628	841,609	307,651	1673,800	1528,027	2757,195	2787,088	1329,981	1110,261
CI	1318,936	2257,570	1152,948	491,708	1924,321	197,517	576,321	1786,062	685,718	324,139	601,824	1489,496	984,002	2479,016	2528,250	897,977	638,797
CJ	3693,039	229,752	2480,848	2874,598	1017,009	2532,670	1937,452	1189,555	2173,128	2262,256	2312,976	965,107	2501,029	662,146	570,636	1769,604	2832,295
CK	2550,127	1259,480	1090,000	2124,241	494,502	1801,840	1078,718	1794,844	1816,503	1321,436	1884,223	970,216	1171,113	1109,759	1205,899	737,532	1694,936
CL	3113,671	417,080	1987,418	2282,459	785,856	1939,874	1355,714	834,233	1600,491	1679,096	1735,664	373,976	1982,535	865,924	847,854	1222,648	2261,037
CM	2344,872	1497,423	1759,969	1320,319	1537,619	1017,641	819,563	760,428	536,862	1023,891	683,744	786,703	1657,459	1898,894	1905,664	1007,254	1613,641
CN	2675,814	819,684	1449,229	1982,327	496,588	1635,240	950,645	1178,053	1454,752	1270,180	1560,585	353,412	1458,087	966,479	1013,973	730,247	1806,049
CO	2068,788	1422,947	1140,044	1310,242	1115,633	963,422	311,262	1226,857	871,271	634,003	945,838	673,374	1068,387	1638,638	1684,144	347,252	1223,399
CP	3832,534	389,307	2638,354	2991,179	1176,317	2652,037	2075,009	1221,190	2269,901	2399,083	2412,707	1094,931	2655,858	783,779	682,112	1918,600	2975,397
CQ	905,647	3356,370	1124,769	1725,186	2696,404	1756,770	1805,739	3288,360	2315,420	1554,110	2223,688	2719,137	1083,414	3320,430	3412,038	1839,420	991,061
CR	106,231	3380,481	1445,053	1097,871	2869,461	1276,242	1661,951	3023,781	1862,382	1340,839	1735,033	2646,466	1304,080	3484,068	3556,389	1849,310	770,276
CS	3123,467	589,482	1761,845	2493,484	216,113	2147,434	1446,362	1458,462	1963,967	1756,203	2074,348	741,971	1814,234	466,615	537,425	1178,519	2250,828
CT	2248,079	1576,259	1703,841	1221,164	1575,537	918,578	758,980	858,587	446,230	942,886	590,407	847,927	1594,395	1961,565	1972,787	974,307	1525,709
CU	3762,061	1000,954	2862,283	2753,426	1716,913	2452,440	2072,062	692,936	1941,004	2363,586	2092,000	1189,728	2825,980	1550,376	1469,629	2053,312	2972,738
CV	642,216	3648,392	2018,091	1007,036	3262,838	1324,358	1940,757	3073,523	1827,902	1625,251	1679,019	2879,802	1852,722	3846,814	3903,559	2211,726	1227,370
CW	377,895	3103,478	1257,124	857,877	2614,256	1000,850	1380,371	2738,098	1588,928	1057,592	1466,387	2364,245	1099,514	3223,408	3292,622	1581,848	510,730
CX	3848,980	950,723	2906,130	2856,119	1698,923	2549,584	2141,970	807,092	2049,336	2440,190	2200,383	1229,218	2877,483	1485,862	1399,064	2103,878	3048,541
CY	605,607	3630,046	1465,894	1651,235	3019,616	1768,852	1985,127	3435,115	2354,022	1692,715	2241,090	2947,063	1384,263	3645,562	3731,019	2085,950	1084,772
CZ	3724,113	826,398	2761,892	2747,018	1559,013	2434,812	2007,486	724,334	1948,783	2309,189	2099,559	1085,029	2735,142	1373,073	1291,716	1961,628	2916,582
DA	2056,795	1432,956	930,577	1444,867	971,511	1110,045	382,341	1441,466	1123,485	673,276	1180,756	761,079	892,908	1551,279	1613,347	120,154	1186,468
DB	3317,507	255,828	2170,923	2480,413	861,539	2139,167	1559,566	895,116	1782,215	1883,068	1920,644	577,728	2173,095	786,820	743,864	1419,344	2463,853
DC	454,974	3065,303	1318,382	721,374	2609,201	892,236	1337,288	2650,691	1477,229	1012,246	1349,401	2315,280	1151,851	3210,286	3275,321	1565,238	529,469
DD	1675,372	1810,961	713,477	1144,035	1329,772	838,888	232,693	1687,014	1041,061	336,610	1049,167	1108,529	613,922	1925,326	1990,892	280,360	805,420
DE	2450,104	1402,430	1815,257	1432,201	1487,442	1127,437	885,032	654,316	646,124	1110,309	794,119	715,010	1721,035	1820,373	1822,364	1040,623	1706,986
DF	1844,143	1933,930	1523,139	802,075	1794,366	502,642	631,677	1274,847	195,041	664,906	247,407	1170,156	1382,572	2260,436	2287,030	951,237	1178,925
DG	3871,222	892,498	2897,868	2892,212	1655,089	2581,145	2152,885	858,073	2091,315	2455,590	2242,226	1222,239	2874,413	1418,711	1329,361	2101,284	3062,690
DH	591,571	3066,123	1468,608	556,692	2662,127	794,833	1347,043	2571,131	1359,862	1027,759	1222,295	2303,160	1294,558	3248,645	3307,223	1611,077	660,147
DI	2851,253	838,048	1914,917	1931,115	1079,044	1599,707	1123,271	522,245	1197,693	1427,353	1339,661	303,026	1871,010	1289,996	1278,616	1100,608	2033,360
DJ	1167,120	2487,852	387,939	1251,958	1873,116	1120,104	945,040	2428,454	1585,167	748,174	1529,851	1836,910	246,376	2498,467	2582,237	957,892	448,642
DK	1256,409	2943,675	1888,873	347,508	2718,891	656,415	1384,395	2215,631	973,062	1149,028	822,944	2174,572	1708,771	3238,408	3274,885	1719,449	1144,592
DL	863,531	2899,610	737,625	1329,351	2279,688	1303,396	1311,440	2793,107	1841,459	1060,288	1759,420	2238,677	644,376	2905,599	2991,048	1364,183	526,408
DM	1190,484	2495,360	1349,491	226,385	2188,216	163,487	840,729	1939,413	738,649	581,946	612,053	1723,267	1172,531	2736,281	2782,599	1164,057	694,713
DN	3598,027	816,002	2148,698	3035,096	634,289	2690,988	1978,260	1908,095	2518,816	2277,326	2629,574	1279,426	2233,304	260,279	357,649	1685,388	2731,626
DO	3208,504	770,887	1778,034	2652,582	244,598	2310,337	1592,470	1706,517	2170,254	1887,782	2273,389	980,159	1853,576	430,763	536,680	1294,472	2340,901
DP	1274,624	2926,879	1889,155	344,819	2706,622	646,302	1374,061	2194,929	953,184	1142,368	803,264	2158,245	1709,246	3224,045	3259,965	1710,134	1149,687
DQ	380,316	3135,353	1354,590	786,304	2671,292	966,240	1407,630	2725,690	1550,448	1082,664	1421,616	2387,047	1191,898	3274,726	3340,838	1629,916	580,298
DR	2663,845	1078,406	1243,191	2165,745	328,466	1832,940	1105,000	1655,591	1788,754	1376,510	1869,339	831,535	1309,614	953,411	1044,192	779,916	1798,762
DS	1063,350	3121,689	1891,764	441,969	2849,774	788,602	1502,886	2436,000	1187,674	1234,077	1036,625	2349,246	1711,309	3390,216	3432,528	1824,435	1105,957
DT	3743,126	802,901	2304,043	3154,527	771,101	2808,808	2103,247	1929,195	2611,495	2407,608	2727,144	1354,474	2385,652	252,248	303,949	1819,671	2874,646
DU	1373,755	2155,119	1037,123	630,765	1794,357	331,472	448,684	1748,155	731,062	184,253	672,617	1393,178	874,142	2357,462	2409,814	760,671	618,501
DV	940,666	3247,069	1012,373	1684,721	2583,990	1695,891	1711,286	3195,590	2245,388	1468,466	2158,594	2615,314	974,598	3207,830	3299,666	1734,767	922,658
DW	3250,008	1087,379	2471,766	2217,751	1596,408	1925,088	1612,242	151,053	1400,691	1881,428	1551,516	882,145	2411,453	1637,672	1589,052	1655,371	2488,145
DX	1118,665	3382,286	2129,163	711,153	3119,357	1056,788	1772,491	2662,400	1422,157	1501,397	1272,118	2610,804	1949,720	3658,087	3699,353	2093,204	1329,322
DY	3882,911	746,877	2471,073	3247,712	912,152	2900,349	2209,600	1889,928	2664,842	2521,654	2787,275	1394,594	2544,308	300,270	268,734	1943,515	3011,361
DZ	2435,534	1044,058	1324,073	1700,346	762,871	1352,823	686,706	1108,385	1179,303	1011,053	1280,033	353,293	1300,562	1249,365	1292,147	531,252	1574,034
EA	2185,686	1371,996	1368,446	1317,853	1205,704	973,271	474,371	1013,178	736,471	763,204	840,101	598,930	1287,028	1665,175	1695,473	582,477	1371,483
EB	616,731	3145,744	1584,602	566,615	2759,660	843,342	1434,772	2615,616	1388,469	1119,740	1246,002	2379,183	1410,250	3341,138	3397,572	1708,710	775,934
EC	2324,645	1376,477	898,780	1899,645	675,167	1582,111	865,994	1755,646	1634,910	1094,242	1691,890	949,510	961,250	1301,055	1389,789	521,418	1465,705
ED	3472,375	47,381	2260,517	2670,481	831,178	2326,578	1718,460	1098,517	1989,825	2043,464	2126,102	754,777	2278,450	609,487	549,401	1546,108	2610,226
EE	884,526	2685,572	1218,831	389,173	2293,131	465,800	967,856	2222,642	1053,658	651,835	932,065	1923,407	1038,307	2873,210	2929,974	1242,807	451,602
EF	860,517	3400,498	1975,920	714,071	3077,718	1055,540	1732,954	2757,405	1507,764	1436,881	1356,997	2627,622	1799,806	3639,342	3688,077	2033,834	1167,125
EG	3570,574	223,376	2406,240	2725,298	1012,593	2385,822	1812,636	1016,619	2010,235	2136,113	2151,740	830,319	2415,023	765,154	689,406	1667,450	2716,359
EH	2232,058	1585,137	738,196	1921,044	847,270	1623,796	942,215	1966,894	1749,805	1115,221	1790,573	1168,148	832,657	1465,131	1560,828	609,148	1396,525
EI	2841,139	826,799	1471,054	2256,521	153,639	1914,258	1197,080	1485,582	1791,203	1495,932	1888,505	682,690	1522,564	747,553	826,545	906,838	1969,522
EJ	1046,282	2503,408	1128,335	419,142	2118,899	345,059	787,269	2058,423	924,426	475,429	817,127	1741,551	948,612	2694,640	2750,235	1070,679	445,250
EK	3072,475	1147,186	2333,838	2036,171	1567,347	1744,706	1454,182	31,953	1219,345	1714,230	1370,228	806,916	2265,461	1678,258	1641,060	1520,498	2318,812
EL	2123,509	1369,669	968,614	1509,210	904,478	1172,629	446,203	1417,800	1164,148	741,232	1227,601	712,373	941,015	1482,972	1545,199	177,767	1252,557
EM	3059,852	784,873	1645,197	2499,273	90,736	2157,449	1438,736	1626,060	2027,453	1733,896	2127,791	865,647	1713,963	550,841	646,426	1140,951	2190,984
EN	1273,500	2438,010	276,875	1352,695	1800,062	1202,514	957,883	2431,818	1642,110	796,492	1595,650	1809,532	166,090	2426,067	2512,669	928,500	561,894
EO	1296,840	2280,090	1154,513	475,176	1943,878	193,933	595,961	1807,916	700,928	336,430	613,463	1512,214	984,224	2499,993	2549,598	915,240	624,468
EP	670,667	3609,808	1427,310	1688,938	2988,017	1792,989	1980,673	3439,527	2375,607	1694,521	2265,945	2935,424	1353,715	3614,007	3700,931	2068,965	1089,796
EQ	466,991	3251,057	1160,767	1286,089	2672,195	1372,647	1583,673	3027,385	1954,166	1286,515	1845,724	2553,399	1048,554	3296,113	3376,908	1703,911	677,676
ER	2131,313	1403,439	874,643	1596,387	852,222	1268,967	543,813	1550,118	1305,080	803,488	1360,991	807,075	872,700	1456,971	1528,625	207,251	1258,753
ES	1233,469	2694,402	1637,843	106,042	2444,035	378,112	1105,807	2029,670	781,315	871,271	631,880	1922,286	1459,338	2971,801	3011,364	1439,920	935,013
ET	1670,296	2295,819	1686,624	537,777	2152,851	387,001	908,309	1555,217	306,320	813,354	155,322	1535,814	1524,721	2627,537	2654,253	1249,989	1164,002

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KOTA	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG
A	1240,504	1386,559	2635,283	801,539	1531,160	941,982	628,046	2648,724	1048,429	2442,328	1007,911	862,975	1219,592	2186,072	1715,552	888,474	1733,841
B	573,266	2887,443	1901,814	2458,647	462,243	2543,907	2076,212	1045,017	1663,860	1262,333	2647,112	1670,005	842,630	569,941	1513,225	2581,301	832,314
C	1423,781	3630,577	401,005	2640,376	1287,392	2582,748	2870,338	1615,070	1333,015	832,663	3193,361	2811,808	1192,821	1530,889	552,953	2913,172	880,571
D	2132,529	554,476	3704,462	1293,387	2416,405	1507,782	477,200	3443,823	2147,805	3412,103	718,357	758,022	2215,774	2965,158	2808,106	1061,233	2712,552
E	1316,706	3869,008	1007,263	3145,426	1030,674	3156,847	3049,347	564,022	1957,628	242,167	3530,726	2768,475	1310,247	704,495	1319,489	3354,736	805,348
F	1630,606	1007,922	3011,410	604,467	1922,574	802,886	374,233	3034,312	1361,379	2838,767	611,658	886,488	1616,268	2567,160	2078,011	560,972	2130,503
G	895,317	2820,225	1205,231	1850,603	934,848	1814,365	2070,016	1810,520	560,016	1245,829	2382,856	2071,418	593,671	1508,624	269,683	2112,275	714,194
H	1289,126	1275,731	2865,053	1113,801	1577,345	1291,329	456,984	2641,094	1411,559	2563,430	1047,852	438,508	1365,776	2163,983	1992,994	1092,477	1862,130
I	845,185	2801,495	1219,059	1848,368	886,276	1817,945	2045,110	1776,015	569,573	1227,732	2369,325	2034,617	543,737	1466,806	299,923	2105,547	675,883
J	1973,398	969,929	3192,026	269,652	2259,184	480,585	712,198	3383,749	1469,706	3113,283	454,235	1301,624	1908,690	2927,253	2240,564	140,036	2415,414
K	1807,754	1690,795	2664,748	467,087	2054,658	328,694	1280,112	3158,016	951,156	2735,056	1173,365	1733,538	1638,251	2745,896	1725,001	781,220	2088,984
L	1109,877	2896,076	1183,264	1861,198	1147,966	1800,285	2174,949	1975,966	555,645	1354,709	2438,237	2226,231	807,372	1700,403	250,874	2140,160	899,552
M	1314,330	3829,444	1507,061	3254,743	1028,409	3298,394	3009,980	102,825	2186,840	730,034	3547,620	2637,903	1419,324	399,846	1670,752	3426,637	1002,726
N	1450,674	3763,347	267,552	2811,120	1273,980	2763,839	2986,956	1446,327	1507,455	649,059	3340,397	2885,916	1254,783	1415,411	725,581	3075,611	863,020
O	1889,442	1767,321	2677,850	538,164	2129,607	364,918	1386,394	3224,588	986,426	2779,342	1248,908	1846,290	1708,169	2819,887	1747,397	848,067	2146,056
P	2464,076	214,849	3873,844	1023,137	2756,813	1211,137	755,791	3845,842	2189,994	3699,185	315,628	1301,410	2476,307	3370,580	2933,648	714,582	2990,088
Q	1899,297	1759,036	2690,884	529,918	2140,137	354,154	1383,583	3235,833	999,032	2791,765	1240,621	1846,849	1719,084	2830,536	1760,344	839,031	2157,861
R	2407,887	612,083	3684,531	697,252	2698,601	857,324	853,797	3814,699	1962,936	3586,249	229,652	1468,699	2371,356	3348,777	2733,479	386,804	2882,941
S	1963,395	592,001	3448,188	923,643	2254,934	1138,320	234,079	3331,301	1830,411	3218,943	441,491	806,113	2001,032	2854,632	2528,067	711,000	2510,966
T	1077,004	2746,316	1335,003	1708,012	1154,250	1649,457	2032,807	2052,307	402,061	1468,416	2285,955	2106,699	775,341	1748,053	391,492	1986,577	956,060
U	1979,451	1370,751	2983,122	151,714	2246,862	66,008	1083,661	3368,209	1252,622	3002,805	852,997	1619,413	1852,199	2935,029	2035,218	447,599	2332,048
V	2533,173	186,132	3943,351	1078,687	2825,863	1262,401	820,954	3913,518	2257,492	3769,234	376,969	1355,977	2546,380	3437,959	3002,660	767,524	3060,128
W	1350,296	2066,957	2104,343	947,275	1563,504	879,721	1458,528	2634,441	382,237	2172,457	1575,313	1729,440	1132,857	2246,665	1158,858	1239,897	1545,287
X	2441,197	788,379	3645,789	613,942	2728,730	740,771	979,400	3851,530	1914,371	3586,049	386,264	1599,880	2382,223	3391,592	2693,361	338,917	2888,970
Y	347,001	2569,437	1521,873	1809,025	483,803	1838,049	1765,361	1565,917	780,862	1248,885	2198,368	1632,339	51,478	1163,518	764,232	2011,271	542,441
Z	2463,057	669,164	4080,991	1684,595	2737,587	1896,988	890,021	3715,819	2558,129	3747,581	1043,348	1002,884	2574,950	3240,186	3200,726	1427,266	3058,684
AA	1230,488	2897,427	1242,334	1825,484	1280,435	1749,995	2198,624	2108,306	540,774	1471,806	2427,700	2285,963	927,371	1836,782	358,454	2113,521	1035,773
AB	858,518	1799,200	2232,258	1099,244	1141,858	1181,682	1015,332	2267,422	760,485	2027,979	1419,607	1060,063	806,311	1816,150	1331,542	1256,957	1320,247
AC	1210,753	3464,419	555,296	2512,741	1074,728	2469,585	2692,194	1485,899	1212,055	742,055	3039,496	2611,674	986,222	1355,378	436,323	2775,342	670,231
AD	1061,701	3524,348	711,138	2691,153	838,505	2680,532	2720,008	1045,781	1446,570	351,574	3142,153	2538,386	938,043	941,760	767,566	2924,945	450,871
AE	1422,650	1380,557	3106,054	1546,435	1682,099	1736,074	697,402	2637,319	1810,372	2699,370	1321,005	87,207	1584,061	2161,556	2300,209	1471,854	2031,607
AF	1610,851	1756,400	2487,608	577,291	1854,622	496,456	1252,952	2956,322	761,838	2537,251	1247,604	1646,481	1436,856	2545,641	1541,914	882,783	1887,689
AG	1400,446	3923,718	1481,001	3334,122	1111,960	3373,682	3103,653	92,195	2246,454	712,832	3637,164	2736,547	1493,076	499,410	1703,782	3510,565	1058,418
AH	1060,747	3182,715	838,630	2213,217	995,080	2169,097	2422,598	1639,006	911,554	968,922	2749,227	2382,401	793,300	1424,004	145,962	2478,187	643,609
AI	1370,000	2863,554	1370,350	1749,715	1440,493	1656,486	2196,943	2286,501	527,755	1644,658	2380,392	2332,206	1068,316	2011,200	532,015	2047,357	1211,056
AJ	2366,250	1090,482	3448,001	423,795	2645,098	475,786	1115,292	3771,409	1715,758	3446,349	627,781	1725,145	2270,211	3324,446	2498,846	322,025	2763,824
AK	1302,000	3856,749	1075,603	3153,019	1012,790	3169,091	3036,080	496,327	1980,467	305,630	3525,835	2742,592	1311,482	646,302	1359,943	3357,304	814,256
AL	2451,738	884,173	3616,541	575,840	2737,015	679,831	1044,093	3861,987	1882,986	3577,090	471,832	1664,623	2380,997	3405,705	2664,589	338,541	2884,200
AM	932,802	3463,121	955,263	2709,445	669,795	2719,471	2647,641	829,673	1526,239	351,757	3109,297	2411,315	883,629	680,921	939,670	2922,737	371,553
AN	364,321	2560,737	1984,724	2130,547	454,670	2223,211	1745,756	1357,629	1430,100	1441,516	2311,329	1370,763	667,438	878,934	1431,685	2246,478	864,432
AO	1794,062	4078,585	82,680	3088,486	1611,425	3026,087	3312,187	1642,171	1781,321	854,415	3643,893	3226,636	1596,152	1688,349	1003,534	3363,215	1202,135
AP	1290,062	1362,223	2939,080	1356,187	1564,891	1537,346	591,486	2576,157	1588,693	2574,522	1217,723	231,138	1419,090	2097,479	2106,815	1313,682	1889,477
AQ	1509,714	3617,668	489,842	2589,221	1399,657	2518,813	2875,024	1784,629	1286,422	1003,686	3167,063	2853,290	1257,833	1687,285	535,557	2870,856	1002,288
AR	447,675	2936,402	1653,941	2398,620	232,744	2463,755	2116,010	985,431	1489,325	1049,209	2654,974	1773,903	657,012	517,722	1268,246	2549,869	575,876
AS	1556,170	1975,535	2295,376	796,519	1777,793	694,953	1440,703	2854,465	595,626	2389,804	1468,527	1785,819	1348,898	2463,330	1358,759	1104,091	1766,094
AT	1317,653	3492,005	538,677	2502,513	1201,601	2446,944	2733,831	1629,213	1195,305	871,556	3054,117	2684,798	1074,291	1503,615	414,035	2774,399	804,190
AU	1408,461	1539,322	2536,405	554,907	1678,392	611,310	930,817	2802,277	824,152	2473,864	1064,249	1286,098	1293,261	2364,985	1585,810	782,164	1786,530
AV	1486,460	3908,422	356,923	3011,658	1264,801	2978,880	3114,230	1216,148	1722,503	422,214	3506,411	2958,368	1341,460	1261,106	957,046	3263,667	875,563
AW	1673,308	961,001	3058,472	607,595	1965,511	811,050	349,322	3075,652	1406,590	2884,544	567,670	888,046	1661,878	2607,648	2124,860	539,416	2176,126
AX	466,075	3009,653	1492,623	2408,262	179,825	2459,657	2187,877	947,114	1422,449	905,884	2705,589	1881,545	601,047	514,584	1132,644	2577,018	420,954
AY	591,047	2515,045	1510,676	1653,323	731,974	1658,824	1736,784	1777,493	531,519	1369,765	2108,327	1695,083	305,308	1397,840	638,377	1881,766	697,829
AZ	1321,339	3843,075	752,163	3049,069	1056,080	3044,056	3030,187	821,926	1814,771	40,000	3478,247	2799,697	1255,193	894,564	1123,643	3275,602	741,974
BA	2208,593	387,621	3635,289	885,874	2501,291	1091,462	506,354	3590,546	1969,172	3446,794	223,009	1081,124	2224,299	3115,562	2700,116	606,388	2737,658
BB	467,132	2557,444	2074,393	2177,243	545,220	2277,775	1748,607	1374,396	1522,674	1510,465	2327,542	1341,457	770,166	897,036	1535,013	2280,453	956,732
BC	1088,537	3075,741	967,345	2073,957	1067,155	2021,136	2332,218	1791,397	767,006	1136,599	2630,393	2332,118	799,723	1552,186	23,345	2346,103	755,905
BD	1653,469	1018,426	3274,720	1293,539	1931,890	1498,192	370,000	2944,683	1823,685	2937,571	969,033	280,801	1763,521	2466,170	2412,392	1167,227	2246,395
BE	881,717	2730,367	1297,584	1757,821	950,508	1723,070	1984,541	1869,854	471,275	1327,417	2290,908	2001,035	578,727	1551,077	356,041	2019,236	766,851
BF	610,328	2100,555	1941,510	1354,514	875,034	1407,284	1308,772	1999,564	643,121	1726,948	1720,305	1273,076	508,335	1562,692	1065,773	1539,677	1020,525
BG	2094,636	1460,214	3025,949	287,564	2356,199	89,000	1227,060	3472,686	1307,851	3081,142	948,129	1769,593	1952,871	3046,454	2084,975	539,708	2421,828
BH	1282,655	2403,294	1776,984	1290,852	1442,803	1210,661	1759,715	2445,431	191,024	1911,842	1917,208	1958,049	1015,197	2096,735	846,218	1585,203	1340,491
BI	435,394	2424,973	1632,071	1644,416	630,052	1673,961	1628,648	1727,949	658,478	1405,157	2043,411	1538,733	207,171	1317,771	805,732	1848,845	702,672
BJ	1243,628	2539,279	1626,779	1440,043	1376,893	1361,711	1876,566	2342,408	221,416	1782,399	2058,249	2039,766	960,084	2011,657	701,617	1732,200	1238,125
BK	1526,752	1159,353	2864,133	562,226	1816,464	737,829	512,640	2935,947	1204,765	2711,320	737,011	954,082	1491,662	2474,042	1927,051	603,523	2004,967
BL	297,379	2595,794	1905,248	2127,135	375,714	2212,595	1777,674	1320,237	1379,344	1370,826	2332,513	1424,396	599,101	843,128	1355,337	2253,720	784,547
BM	2270,699	512,001	3850,652	1404,087	2552,870	1617,221	623,032	3569,723	2293,364	3552,039	784,659	866,848	2359,339	3091,408	2955,259	1154,477	2854,154
BN	2346,228	400,216	3904,244	1371,745	2630,964	1582,393	659,883	3659,812	2320,615	3624,214	720,151	967,497	2423,585	3181,168	2999,349	1106,684	2923,067
BO	661,876	1898,045	2224,462	1361,032	954,755	1463,005	1080,080	2060,777	967,856	1916,760	1580,773	943,764	714,787	1594,659	1390,201	1480,353	1212,279
BP	460,405	2974,342	1273,798	2253,542	266,721	2280,465	2158,863	1135,651	1159,697	837,860	2625,510	1940,575	406,872	775,774	813,553	2452,522	153,405
BQ	0,000	2555,101	1715,727	1953,203	292,884	2016,092	1734,127	1410,464	1093,812	1284,524	2240,452	1481,562	303,117	958,428	1078,230	2113,213	611,061
BR	2555,101	0,000	4018,167	1229,160	2846,365	1421,465	821,776	3916,001	2356,758	3809,650	518,418	1293,351	2589,967	3438,251	3085,794	924,426	3101,186
BS	1715,727	4018,167	0,000	3041,137	1530,206	2983,450	3247,459	1571,103	1733,841	779,100	3587,856	3153,350	1522,277	1608,081	952,431	3312,631	1121,494
BT	1953,203	1229,160	3041,137	0,000	2228,471	214,704	939,580	3353,996	1307,378	3022,929	710,744	1490,744	1848,105	2911,527	2089,506	314,239	2340,162
BU	292,884	2846,365	1530,206	2228,471	0,000	2280,268	2024,949	1126,426	1262,912	1017,822	2532,849	1746,135	432,834	691,400	1051,576	2398,704	411,618
BV	2016,092	1421,465	2983,450	214,704	2280,268	0,000	1149,529	3399,146	1257,621	3020,122	905,055	1684,505	1880,725	2969,730	2038,368	497,039	2354,998
BW	1734,127	821,776	3247,459	939,580	2024,949	1149,529	0,000	3097,618	1670,605	2996,019	629,051	620,742	1782,291	2620,774	2339,468	797,295	2289,389

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KOTA	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG
BX	1410,464	3916,001	1571,103	3353,996	1126,426	3399,146	3097,618	0,000	2289,654	800,156	3640,074	2715,001	1520,801	478,759	1768,512	3523,499	1105,210
BY	1093,812	2356,758	1733,841	1307,378	1262,912	1257,621	1670,605	2289,654	0,000	1794,752	1888,396	1818,615	832,325	1926,453	783,125	1584,523	1188,689
BZ	1284,524	3809,650	779,100	3022,929	1017,822	3020,122	2996,019	800,156	1794,752	0,000	3447,222	2762,089	1223,002	858,121	1113,444	3247,421	709,138
CA	2240,452	518,418	3587,856	710,744	2532,849	905,055	629,051	3640,074	1888,396	3447,222	0,000	1240,445	2225,859	3169,932	2642,374	408,883	2739,853
CB	1481,562	1293,351	3153,350	1490,744	1746,135	1684,505	620,742	2715,001	1818,615	2762,089	1240,445	0,000	1631,209	2238,413	2333,263	1403,619	2088,169
CC	303,117	2589,967	1522,277	1848,105	432,834	1880,725	1782,291	1520,801	832,325	1223,002	2225,859	1631,209	0,000	1114,474	791,619	2045,833	514,249
CD	958,428	3438,251	1608,081	2911,527	691,400	2969,730	2620,774	478,759	1926,453	858,121	3169,932	2238,413	1114,474	0,000	1531,166	3067,264	801,482
CE	1078,230	3085,794	952,431	2089,506	1051,576	2038,368	2339,468	1768,512	783,125	1113,444	2642,374	2333,263	791,619	1531,166	0,000	2360,369	735,870
CF	2113,213	924,426	3312,631	314,239	2398,704	497,039	797,295	3523,499	1584,523	3247,421	408,883	1403,619	2045,833	3067,264	2360,369	0,000	2551,275
CG	611,061	3101,186	1121,494	2340,162	411,618	2354,998	2289,389	1105,210	1188,689	709,138	2739,853	2088,169	514,249	801,482	735,870	2551,275	0,000
CH	1231,234	2825,318	1323,346	1746,157	1299,515	1669,227	2134,166	2160,000	469,129	1538,631	2352,761	2237,512	929,002	1875,295	427,926	2035,464	1076,699
CI	687,123	2638,945	1380,360	1735,605	778,918	1725,123	1869,643	1763,549	526,643	1295,170	2220,790	1840,940	385,219	1412,568	492,327	1977,430	662,216
CJ	2431,459	272,007	3827,635	965,365	2724,318	1153,007	735,853	3817,622	2139,313	3661,007	259,332	1297,661	2438,005	3343,231	2885,932	656,494	2952,075
CK	1234,893	1509,868	2920,419	1529,992	1495,370	1706,876	764,393	2464,208	1663,198	2512,305	1392,838	253,292	1398,996	1987,020	2123,880	1493,862	1843,870
CL	1879,903	803,698	3234,573	549,596	2171,803	764,232	416,454	3283,402	1554,005	3082,576	364,726	1022,605	1861,135	2815,706	2293,548	382,154	2375,130
CM	1416,124	1879,831	2286,106	758,599	1651,452	705,437	1296,440	2746,493	553,925	2322,135	1385,142	1614,128	1229,299	2341,313	1336,792	1048,563	1673,589
CN	1390,124	1168,438	2890,548	909,304	1682,522	1090,946	358,469	2772,589	1347,461	2642,059	878,319	606,067	1425,401	2299,002	1988,788	889,640	1934,300
CO	886,508	1799,458	2225,370	1067,579	1166,695	1144,208	1024,707	2293,008	724,556	2037,971	1409,540	1094,149	819,151	1844,884	1316,621	1234,342	1331,785
CP	2580,338	313,014	3949,040	1024,541	2873,208	1195,613	895,644	3970,877	2246,722	3801,019	361,188	1457,088	2578,435	3497,366	3003,272	710,303	3092,682
CQ	1203,173	3675,568	1652,374	3155,959	932,177	3212,203	2859,813	259,788	2149,702	875,134	3413,308	2462,660	1349,016	245,308	1703,198	3312,570	993,324
CR	1216,379	3742,784	806,043	2962,395	949,961	2961,990	2928,743	791,940	1741,624	68,154	3382,076	2693,995	1157,156	813,462	1074,595	3184,812	643,007
CS	1808,883	807,820	3386,619	1170,942	2093,591	1382,492	236,544	3130,461	1863,098	3087,906	767,294	496,858	1892,726	2651,717	2499,119	1005,629	2388,434
CT	1344,861	1960,625	2187,220	856,033	1572,379	804,612	1351,928	2660,105	454,582	2225,680	1471,242	1635,812	1146,606	2260,501	1237,553	1142,512	1581,888
CU	2665,923	1150,016	3715,527	719,220	2944,440	732,323	1351,659	4070,662	1989,191	3736,750	782,971	1970,913	2567,310	3624,143	2770,595	593,334	3058,243
CV	1678,038	4029,171	121,433	3078,000	1477,014	3028,152	3249,333	1457,115	1773,050	671,316	3608,224	3132,052	1502,282	1512,409	990,116	3343,531	1074,010
CW	969,389	3468,918	844,116	2675,467	727,927	2675,779	2658,437	943,645	1461,609	348,604	3100,581	2450,755	879,311	808,305	834,621	2898,824	369,584
CX	2728,372	1060,447	3820,456	799,931	3010,359	838,689	1340,167	4136,678	2090,057	3822,859	741,772	1960,865	2642,087	3685,179	2872,809	625,703	3138,454
CY	1424,816	3968,026	1345,384	3335,101	1132,397	3365,237	3146,485	240,354	2209,646	589,406	3665,214	2803,369	1487,385	586,287	1627,973	3522,690	1023,238
CZ	2589,925	974,579	3713,226	677,942	2873,274	743,180	1197,925	3999,241	1980,043	3697,386	611,110	1818,632	2509,813	3545,793	2763,132	481,740	3009,192
DA	778,617	1787,974	2305,347	1246,849	1071,389	1355,071	973,580	2180,305	960,927	2022,823	1462,330	891,669	810,600	1714,701	1447,207	1360,818	1315,809
DB	2078,702	625,429	3435,059	631,547	2371,044	839,601	503,001	3479,119	1744,940	3286,340	161,941	1123,178	2064,608	3009,532	2491,918	368,307	2578,695
DC	986,697	3436,032	757,355	2601,001	776,137	2591,271	2632,927	1089,296	1359,950	435,184	3052,262	2459,197	851,780	945,104	698,033	2834,498	376,428
DD	421,495	2168,952	1948,916	1534,746	708,232	1606,253	1354,889	1831,596	853,038	1641,397	1829,860	1208,147	434,504	1378,778	1142,167	1691,907	934,607
DE	1489,902	1782,364	2398,152	646,877	1733,852	596,201	1227,580	2836,959	665,548	2426,827	1282,899	1581,879	1316,974	2424,957	1448,580	939,281	1771,756
DF	1099,565	2321,496	1769,087	1272,063	1275,621	1223,855	1637,833	2310,753	35,903	1823,728	1852,618	1792,860	843,822	1943,078	818,022	1548,726	1211,601
DG	2733,087	983,588	3858,033	824,842	3017,267	882,755	1301,217	4142,901	2125,340	3844,467	690,294	1920,904	2655,871	3688,084	2908,465	621,203	3155,881
DH	1091,707	3443,677	625,304	2544,509	923,949	2517,202	2655,408	1300,441	1265,077	584,113	3037,064	2532,178	901,588	1164,062	533,904	2794,061	512,606
DI	1709,838	1216,193	2895,750	269,201	1990,738	434,867	749,801	3117,121	1176,589	2823,290	719,689	1252,307	1626,491	2667,644	1944,595	424,887	2129,066
DJ	335,006	2819,791	1692,913	2281,642	186,344	2349,327	1998,948	1104,525	1400,384	1127,621	2535,667	1667,993	570,790	637,133	1236,723	2430,845	585,817
DK	1433,940	3331,257	847,238	2262,788	1393,991	2181,250	2617,049	1991,924	977,149	1257,198	2865,443	2657,449	1147,138	1815,017	355,985	2552,304	1046,039
DL	714,077	3232,007	1510,246	2663,611	436,940	2717,199	2411,237	697,284	1669,713	823,848	2944,400	2066,178	856,515	258,103	1309,352	2827,232	573,482
DM	885,016	2879,502	1141,620	1920,710	901,959	1886,479	2122,963	1747,179	633,078	1173,196	2446,431	2107,129	587,892	1455,497	226,153	2180,222	656,896
DN	2276,774	753,824	3908,870	1628,037	2548,828	1842,573	767,819	3520,229	2417,957	3561,012	1039,008	809,133	2397,142	3044,950	3039,701	1395,276	2875,673
DO	1887,176	894,465	3518,612	1419,060	2161,626	1630,872	484,025	3152,307	2057,838	3171,683	972,303	439,414	2005,540	2675,002	2656,517	1244,807	2484,453
DP	1432,837	3314,482	869,373	2243,248	1397,426	2160,856	2602,433	2006,738	959,576	1275,007	2847,653	2647,125	1144,388	1825,627	354,645	2533,318	1053,427
DQ	1040,224	3505,102	731,107	2675,624	816,947	2666,258	2700,255	1041,204	1434,462	361,419	3124,058	2517,154	918,131	927,994	762,971	2908,328	429,471
DR	1342,719	1334,575	2997,375	1383,527	1615,218	1568,771	584,098	2616,485	1648,129	2626,787	1212,982	170,801	1476,705	2138,067	2167,299	1327,844	1944,169
DS	1456,715	3508,537	610,044	2470,726	1368,690	2398,335	2772,768	1833,855	1170,228	1069,030	3054,097	2768,108	1192,289	1705,376	437,385	2754,028	984,322
DT	2421,871	666,108	4039,661	1656,039	2696,612	1868,938	851,826	3676,557	2518,945	3706,393	1022,752	962,998	2533,514	3200,723	3159,909	1402,481	3017,321
DU	577,260	2533,429	1494,478	1676,285	711,756	1682,353	1753,169	1754,138	552,661	1346,956	2128,615	1704,350	287,501	1375,649	630,280	1903,840	674,143
DV	1105,206	3564,653	1676,568	3058,325	841,537	3118,530	2749,652	371,049	2076,026	907,298	3306,093	2349,741	1265,221	150,748	1663,265	3210,406	940,070
DW	2220,035	1378,904	3176,935	319,953	2486,089	207,740	1234,058	3605,998	1457,423	3226,343	879,503	1804,223	2088,109	3174,930	2235,466	483,260	2562,636
DX	1706,055	3769,545	487,899	2711,932	1595,527	2629,344	3039,790	1928,117	1421,724	1133,612	3309,577	3036,956	1451,277	1860,688	706,969	3000,699	1195,918
DY	2563,913	520,808	4150,919	1628,804	2843,843	1837,037	918,062	3845,352	2585,174	3846,830	952,962	1131,290	2658,122	3368,018	3254,377	1352,727	3150,966
DZ	1185,852	1413,932	2617,569	878,167	1477,746	1019,478	632,380	2591,057	1064,937	2403,152	1055,773	808,743	1180,356	2125,900	1707,353	956,561	1694,050
EA	1082,050	1757,925	2267,109	883,394	1349,259	934,050	1042,166	2472,702	629,235	2157,467	1322,628	1233,795	965,290	2036,892	1328,122	1089,956	1463,564
EB	1203,765	3525,408	518,276	2600,623	1040,068	2564,676	2743,410	1369,609	1307,794	616,718	3110,440	2635,245	1004,077	1262,072	545,390	2857,070	628,797
EC	1006,350	1663,166	2688,585	1509,030	1272,105	1666,664	870,178	2270,028	1472,568	2287,127	1481,393	475,299	1167,367	1791,380	1898,629	1521,003	1613,892
ED	2207,942	413,489	3618,762	843,842	2500,791	1048,067	521,875	3594,443	1945,154	3440,106	176,045	1108,873	2217,190	3120,352	2681,143	560,879	2731,031
EE	788,280	3063,123	981,675	2180,169	703,855	2164,388	2276,617	1430,418	930,768	864,001	2658,089	2174,940	548,800	1165,148	369,314	2422,166	366,749
EF	1579,433	3785,523	278,298	2781,129	1432,860	2717,012	3028,910	1674,319	1474,566	876,845	3344,237	2973,212	1353,018	1631,295	701,879	3057,957	1022,848
EG	2328,056	443,600	3682,745	790,866	2620,673	978,726	688,620	3725,184	1982,813	3539,388	94,921	1288,600	2317,537	3253,945	2737,289	481,976	2831,664
EH	938,998	1856,268	2651,234	1725,473	1176,769	1877,908	1080,268	2111,019	1576,544	2193,453	1698,011	604,041	1149,066	1634,765	1917,338	1742,964	1548,814
EI	1523,161	1090,923	3127,865	1203,897	1805,709	1401,809	337,617	2838,774	1670,876	2805,140	965,945	292,851	1621,087	2360,039	2260,529	1110,903	2109,576
EJ	674,093	2881,059	1156,946	2006,877	656,149	1997,775	2095,933	1525,280	783,751	1022,719	2476,570	2008,292	400,586	1211,829	406,725	2244,447	421,826
EK	2064,002	1469,599	2995,384	280,143	2325,076	69,584	1217,697	3441,223	1276,409	3049,213	955,580	1754,078	1921,301	3015,440	2053,918	546,701	2389,927
EL	839,639	1722,419	2373,272	1213,495	1132,519	1330,511	906,680	2236,784	1006,786	2089,385	1403,804	831,573	878,570	1769,007	1511,902	1314,718	1382,864
EM	1738,807	969,827	3364,882	1339,006	2015,543	1546,908	401,708	3019,307	1911,127	3023,236	966,224	324,968	1852,698	2541,167	2503,088	1193,784	2333,751
EN	363,670	2761,818	1809,161	2272,958	296,184	2350,801	1943,442	1154,279	1454,483	1233,782	2495,165	1585,596	636,899	677,620	1338,263	2408,395	701,430
EO	687,943	2661,324	1358,298	1758,322	771,038	1747,226	1891,152	1746,571	544,656	1273,239	2243,659	1858,590	385,130	1399,178	475,042	2000,402	644,063
EP	1409,860	3944,001	1415,318	3333,371	1118,966	3368,413	3123,051	163,218	2227,216	651,952	3649,530	2767,514	1488,090	537,448	1665,776	3515,221	1038,611
EQ	1042,773	3597,171	1187,983	2930,252	750,816	2957,855	2775,695	505,610	1805,669	430,183	3277,324	2471,468	1082,164	428,029	1263,261	3123,031	617,288
ER	819,976	1738,807	2427,683	1333,388	1109,000	1462,010	917,031	2187,275	1141,655	2095,763	1460,307	736,517	911,586	1713,272	1597,174	1409,636	1397,554
ES	1176,127	3081,413	996,306	2050,649	1167,204	1987,444	2352,179	1893,519	745,432	1225,341	2626,484	2378,659	881,940	1658,180	127,224	2329,941	861,818
ET	1227,691	2683,056	1473,352	1594,506	1329,424	1516,961	2004,803	2246,826	334,201	1656,614	2206,462	2136,279	931,814	1937,826	559,000	1885,113	1149,108

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KOTA	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX
A	1508,300	1254,928	1219,447	806,490	643,770	752,973	302,552	412,976	1358,848	2431,135	2376,684	814,877	782,653	1468,252	2643,494	2097,024	1513,397
B	1752,072	1218,501	2806,434	1419,509	2301,799	1978,321	1769,469	1399,746	2963,133	793,771	1200,941	2093,036	1911,411	3155,994	1830,805	1059,835	3205,861
C	926,742	1001,000	3435,262	2587,070	2842,383	1885,106	2515,463	1845,799	3554,434	1633,182	826,461	3018,377	1786,235	3314,916	454,279	722,754	3419,544
D	2611,056	2332,155	644,050	992,363	747,466	1760,316	819,319	1491,484	784,623	3196,274	3344,205	324,230	1821,031	1498,552	3701,246	3081,984	1445,116
E	1738,268	1442,083	3734,719	2515,890	3166,417	2468,075	2701,296	2128,814	3879,304	670,547	253,140	3124,039	2373,915	3863,268	894,152	499,009	3943,801
F	1830,299	1633,844	825,112	942,648	249,327	938,870	329,074	804,205	962,252	2811,480	2773,242	609,584	1002,960	1154,045	3024,699	2493,051	1177,174
G	369,432	237,994	2624,000	1867,182	2031,081	1108,953	1719,108	1046,941	2744,016	1707,420	1196,338	2229,602	1009,757	2544,231	1231,348	925,000	2641,855
H	1849,796	1506,360	1187,765	416,329	738,875	1175,924	206,306	696,604	1345,786	2402,840	2495,666	527,057	1199,805	1683,737	2857,269	2231,649	1698,492
I	415,409	195,489	2608,582	1827,888	2015,521	1112,763	1692,607	1020,769	2730,506	1668,262	1176,478	2201,182	1013,984	2546,214	1240,416	901,338	2642,087
J	1926,371	1848,411	713,085	1376,939	300,027	945,011	764,697	1095,562	791,770	3172,559	3050,340	933,774	1035,705	725,827	3220,440	2764,688	764,368
K	1346,001	1442,339	1430,236	1707,304	954,112	415,496	1127,817	982,153	1491,464	2984,601	2679,090	1516,320	509,734	1053,230	2712,872	2394,737	1164,302
L	185,970	435,784	2686,401	2033,100	2096,932	1104,001	1832,688	1166,277	2797,849	1889,648	1312,494	2348,604	1005,561	2532,478	1229,993	1059,246	2637,219
M	2059,720	1660,762	3727,584	2386,257	3189,995	2644,319	2682,304	2195,082	3880,203	215,641	715,437	3047,171	2557,735	3971,847	1395,545	850,085	4038,706
N	1125,880	1124,463	3577,375	2652,870	2984,551	2061,380	2629,438	1967,077	3701,491	1490,620	655,080	3122,904	1962,030	3495,991	268,168	619,267	3597,508
O	1354,889	1492,381	1502,969	1820,122	1049,488	478,874	1240,452	1080,600	1555,117	3056,804	2724,894	1622,852	565,100	1057,651	2730,564	2442,318	1175,459
P	2656,633	2499,229	58,138	1495,199	640,102	1696,622	1075,375	1670,480	160,705	3611,101	3633,055	804,555	1780,899	950,962	3889,774	3355,128	870,588
Q	1367,927	1504,495	1494,299	1822,462	1044,177	489,802	1240,890	1088,016	1545,518	3067,612	2737,258	1620,086	576,642	1044,889	2743,574	2454,599	1162,861
R	2418,083	2334,453	346,175	1615,105	535,093	1433,196	1076,746	1552,284	341,920	3593,237	3522,241	996,835	1525,906	572,552	3711,648	3238,102	517,673
S	2298,444	2067,944	506,744	979,615	375,586	1408,787	576,945	1223,058	667,471	3093,823	3151,937	325,862	1475,713	1209,685	3454,294	2879,259	1179,780
T	155,425	390,128	2534,783	1921,815	1946,113	951,329	1694,173	1033,155	2645,305	1949,047	1422,264	2211,031	852,678	2381,772	1379,058	1157,726	2485,631
U	1674,055	1708,906	1103,959	1644,189	700,158	698,720	1027,189	1102,435	1152,912	3178,143	2943,927	1316,802	798,110	738,241	3025,334	2657,330	837,611
V	2723,723	2569,072	118,596	1554,383	709,186	1761,142	1144,009	1740,649	133,645	3678,201	3703,084	859,624	1846,203	963,968	3959,547	3425,236	875,825
W	798,912	887,393	1832,305	1621,670	1266,815	191,635	1180,858	702,285	1926,240	2478,329	2117,981	1674,133	107,935	1612,043	2148,455	1835,632	1716,128
X	2358,904	2315,880	526,275	1728,531	612,412	1370,606	1159,036	1567,830	500,992	3636,768	3523,318	1144,023	1466,896	397,336	3678,589	3237,445	361,708
Y	884,299	340,212	2413,332	1403,698	1833,703	1182,212	1407,611	789,518	2552,329	1397,056	1183,731	1881,414	1098,597	2528,215	1505,961	903,005	2604,436
Z	3018,807	2718,659	882,164	1255,827	1148,955	2177,370	1217,869	1886,559	975,554	3462,052	3679,436	702,160	2237,865	1786,112	4071,995	3426,226	1710,214
AA	81,154	546,795	2679,524	2102,256	2094,778	1067,279	1864,200	1208,196	2785,064	2025,085	1432,248	2381,406	971,393	2480,045	1299,720	1185,655	2588,671
AB	1181,790	854,785	1634,959	905,284	1054,883	709,663	659,697	47,676	1773,176	2061,210	1962,631	1167,588	683,697	1808,179	2235,898	1682,050	1869,897
AC	854,162	825,680	3276,918	2383,804	2684,007	1765,642	2335,396	1670,189	3400,612	1477,349	719,611	2832,825	1666,234	3201,240	569,171	556,821	3301,304
AD	1189,929	956,663	3363,452	2294,625	2778,525	1979,447	2362,629	1734,413	3499,210	1042,927	307,417	2828,693	1882,176	3401,477	643,693	136,927	3490,623
AE	2219,829	1808,183	1383,131	187,771	1092,471	1632,256	648,680	1086,584	1542,800	2384,068	2631,357	583,062	1648,813	2044,105	3081,987	2391,942	2037,024
AF	1177,426	1243,225	1506,935	1594,008	979,455	215,244	1049,120	805,438	1585,776	2783,861	2480,714	1484,857	312,083	1228,739	2531,714	2195,826	1333,006
AG	2101,166	1719,815	3819,332	2484,677	3278,587	2713,600	2774,035	2277,579	3971,386	311,014	707,636	3143,369	2625,685	4052,055	1366,501	873,582	4120,593
AH	573,888	554,585	2989,425	2164,618	2396,384	1465,172	2068,354	1397,915	3110,410	1585,323	931,427	2573,320	1365,766	2900,740	865,520	699,217	3000,942
AI	141,057	683,124	2635,851	2162,397	2060,024	999,914	1875,144	1240,724	2733,482	2201,809	1606,567	2390,845	909,797	2380,316	1437,028	1362,944	2493,290
AJ	2139,990	2157,449	821,523	1814,512	702,756	1162,155	1205,600	1479,830	813,001	3569,378	3385,970	1315,771	1261,311	299,708	3488,798	3099,038	377,131
AK	1775,136	1461,118	3726,749	2489,621	3161,964	2484,212	2690,169	2128,066	3872,587	602,702	307,924	3105,839	2390,970	3871,598	962,925	530,665	3950,267
AL	2320,752	2299,233	622,268	1783,480	659,758	1334,156	1200,654	1571,985	594,013	3651,009	3515,100	1218,657	1431,823	313,383	3652,277	3228,643	301,347
AM	1340,151	1006,814	3319,089	2162,052	2744,592	2031,309	2294,883	1702,412	3460,983	794,484	283,637	2736,832	1937,541	3426,818	874,649	128,016	3508,342
AN	1594,949	1050,922	2473,471	1117,664	1965,330	1686,154	1434,198	1080,534	2629,525	1114,833	1375,177	1772,877	1626,641	2823,440	1931,359	1175,838	2871,483
AO	1360,784	1443,264	3885,229	2994,922	3292,247	2331,816	2955,874	2288,882	4005,000	1728,938	883,698	3454,163	2233,285	3757,597	185,068	926,779	3864,016
AP	2006,384	1614,684	1319,894	180,422	944,768	1403,868	447,182	864,139	1480,692	2329,090	2506,370	558,348	1419,805	1899,085	2921,372	2255,499	1904,239
AQ	850,000	1018,458	3413,440	2636,046	2822,242	1830,772	2524,079	1851,929	3527,219	1797,392	997,088	3033,494	1733,226	3249,062	571,833	881,511	3357,431
AR	1531,003	1011,485	2832,735	1520,611	2299,343	1856,157	1787,502	1331,084	2985,615	762,923	984,594	2160,700	1781,002	3109,079	1587,147	816,838	3168,604
AS	976,000	1107,773	1727,824	1706,833	1191,917	179,045	1204,878	837,614	1807,609	2696,244	2336,007	1667,894	214,367	1423,141	2344,829	2054,482	1533,135
AT	797,516	865,430	3296,141	2462,779	2703,295	1748,007	2379,537	1709,142	3415,184	1625,084	854,626	2883,908	1649,005	3179,233	583,672	704,716	3283,127
AU	1289,597	1195,815	1315,777	1234,525	735,833	365,941	693,311	533,026	1422,955	2608,569	2412,460	1154,671	429,694	1274,123	2564,049	2125,704	1351,925
AV	1375,817	1288,397	3735,788	2716,594	3145,675	2273,519	2755,814	2109,751	3866,195	1296,295	451,686	3233,432	2174,276	3708,779	251,746	542,006	3805,586
AW	1875,608	1680,912	778,544	956,620	208,125	977,949	352,139	850,716	916,559	2851,762	2818,945	585,844	1043,918	1130,763	3071,767	2539,007	1149,408
AX	1421,042	921,651	2893,431	1628,880	2345,634	1826,729	1849,608	1345,901	3043,545	753,449	839,774	2247,496	1746,147	3124,079	1426,969	657,761	3189,565
AY	657,141	146,373	2337,471	1486,341	1747,159	976,459	1380,056	716,450	2467,796	1624,981	1309,075	1880,457	886,141	2368,498	1515,140	1022,145	2453,219
AZ	1550,064	1318,936	3693,039	2550,127	3113,671	2344,872	2675,814	2068,788	3832,534	905,647	106,231	3123,467	2248,079	3762,061	642,216	377,895	3848,980
BA	2437,799	2257,570	229,752	1259,480	417,080	1497,423	819,684	1422,947	389,307	3356,370	3380,481	589,482	1576,259	1000,954	3648,392	3103,478	950,723
BB	1696,794	1152,948	2480,848	1090,000	1987,418	1759,969	1449,229	1140,044	2638,354	1124,769	1445,053	1761,845	1703,841	2862,283	2018,091	1257,124	2906,130
BC	405,423	491,708	2874,598	2124,241	2282,459	1320,319	1982,327	1310,242	2991,179	1725,186	1097,871	2493,484	1221,164	2753,426	1007,036	857,877	2856,119
BD	2267,726	1924,321	1017,009	494,502	785,856	1537,619	496,588	1115,633	1176,317	2696,404	2869,461	216,113	1575,537	1716,913	3262,838	2614,256	1698,923
BE	352,366	197,517	2532,670	1801,840	1939,874	1017,641	1635,240	963,422	2652,037	1756,770	1276,242	2147,434	918,578	2452,440	1324,358	1000,850	2549,584
BF	985,292	576,321	1937,452	1078,718	1355,714	819,563	950,645	311,262	2075,009	1805,739	1661,951	1446,362	758,980	2072,062	1940,757	1380,371	2141,970
BG	1707,075	1786,062	1189,555	1794,844	834,233	760,428	1178,053	1226,857	1221,190	3288,360	3023,781	1458,462	858,587	692,936	3073,523	2738,098	807,092
BH	458,628	685,718	2173,128	1816,503	1600,491	536,862	1454,752	871,271	2269,901	2315,420	1862,382	1963,967	446,230	1941,004	1827,902	1588,928	2049,336
BI	841,609	324,139	2262,256	1321,436	1679,096	1023,891	1270,180	634,003	2399,083	1554,110	1340,839	1756,203	942,886	2363,586	1625,251	1057,592	2440,190
BJ	307,651	601,824	2312,976	1884,223	1735,664	683,744	1560,585	945,838	2412,707	2223,688	1735,033	2074,348	590,407	2092,000	1679,019	1466,387	2200,383
BK	1673,800	1489,496	965,107	970,216	373,976	786,703	353,412	673,374	1094,931	2719,137	2646,466	741,971	847,927	1189,728	2879,802	2364,245	1229,218
BL	1528,027	984,002	2501,029	1171,113	1982,535	1657,459	1458,087	1068,387	2655,858	1083,414	1304,080	1814,234	1594,395	2825,980	1852,722	1099,514	2877,483
BM	2757,195	2479,016	662,146	1109,759	865,924	1898,894	966,479	1638,638	783,779	3320,430	3484,068	466,615	1961,565	1550,376	3846,814	3223,408	1485,862
BN	2787,088	2528,250	570,636	1205,899	847,854	1905,664	1013,973	1684,144	682,112	3412,038	3556,389	537,425	1972,787	1469,629	3903,559	3292,622	1399,064
BO	1329,981	897,977	1769,604	737,532	1222,648	1007,254	730,247	347,252	1918,600	1839,420	1849,310	1178,519	974,307	2053,312	2211,726	1581,848	2103,878
BP	1110,261	638,797	2832,295	1694,936	2261,037	1613,641	1806,049	1223,399	2975,397	991,061	770,276	2250,828	1525,709	2972,738	1227,370	510,730	3048,541
BQ	1231,234	687,123	2431,459	1234,893	1879,903	1416,124	1390,124	886,508	2580,338	1203,173	1216,379	1808,883	1344,861	2665,923	1678,038	969,389	2728,372
BR	2825,318	2638,945	272,007	1509,868	803,698	1879,831	1168,438	1799,458	313,014	3675,568	3742,784	807,820	1960,625	1150,016	4029,171	3468,918	1060,447
BS	1323,346	1380,360	3827,635	2920,419	3234,573	2286,106	2890,548	2225,370	3949,040	1652,374	806,043	3386,619	2187,220	3715,527	121,433	844,116	3820,456
BT	1746,157	1735,605	965,365	1529,992	549,596	758,599	909,304	1067,579	1024,541	3155,959	2962,395	1170,942	856,033	719,220	3078,000	2675,467	799,931
BU	1299,515	778,918	2724,318	1495,370	2171,803	1651,452	1682,522	1166,695	2873,208	932,177	949,961	2093,591	1572,379	2944,440	1477,014	727,927	3010,359
BV	1669,227	1725,123	1153,007	1706,876	764,232	705,437	1090,946	1144,208	1195,613	3212,203	2961,990	1382,492	804,612	732,323	3028,152	2675,779	838,689
BW	2134,166	1869,643	735,853	764,393	416,454	1296,440	358,469	1024,707	895,644	2859,813	2928,743	236,544	1351,928	1351,659	3249,333	2658,437	1340,167

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KOTA	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX
BX	2160,000	1763,549	3817,622	2464,208	3283,402	2746,493	2772,589	2293,008	3970,877	259,788	791,940	3130,461	2660,105	4070,662	1457,115	943,645	4136,678
BY	469,129	526,643	2139,313	1663,198	1554,005	553,925	1347,461	724,556	2246,722	2149,702	1741,624	1863,098	454,582	1989,191	1773,050	1461,609	2090,057
BZ	1538,631	1295,170	3661,007	2512,305	3082,576	2322,135	2642,059	2037,971	3801,019	875,134	68,154	3087,906	2225,680	3736,750	671,316	348,604	3822,859
CA	2352,761	2220,790	259,332	1392,838	364,726	1385,142	878,319	1409,540	361,188	3413,308	3382,076	767,294	1471,242	782,971	3608,224	3100,581	741,772
CB	2237,512	1840,940	1297,661	253,292	1022,605	1614,128	606,067	1094,149	1457,088	2462,660	2693,995	496,858	1635,812	1970,913	3132,052	2450,755	1960,865
CC	929,002	385,219	2438,005	1398,996	1861,135	1229,299	1425,401	819,151	2578,435	1349,016	1157,156	1892,726	1146,606	2567,310	1502,282	879,311	2642,087
CD	1875,295	1412,568	3343,231	1987,020	2815,706	2341,313	2299,002	1844,884	3497,366	245,308	813,462	2651,717	2260,501	3624,143	1512,409	808,305	3685,179
CE	427,926	492,327	2885,932	2123,880	2293,548	1336,792	1988,788	1316,621	3003,272	1703,198	1074,595	2499,119	1237,553	2770,595	990,116	834,621	2872,809
CF	2035,464	1977,430	656,494	1493,862	382,154	1048,563	889,640	1234,342	710,303	3312,570	3184,812	1005,629	1142,512	593,334	3343,531	2898,824	625,703
CG	1076,699	662,216	2952,075	1843,870	2375,130	1673,589	1934,300	1331,785	3092,682	993,324	643,007	2388,434	1581,888	3058,243	1074,010	369,584	3138,454
CH	0,000	544,111	2605,354	2059,281	2022,140	988,345	1803,185	1153,317	2709,479	2069,110	1497,326	2320,320	893,013	2399,083	1380,070	1245,215	2507,915
CI	544,111	0,000	2454,593	1632,713	1862,379	1027,982	1514,464	845,654	2581,375	1629,713	1237,787	2018,746	932,620	2444,815	1390,856	952,602	2534,549
CJ	2605,354	2454,593	0,000	1484,523	593,062	1642,657	1045,311	1629,259	160,879	3584,440	3595,080	801,512	1727,618	904,757	3844,688	3316,279	828,961
CK	2059,281	1632,713	1484,523	0,000	1125,100	1529,609	621,086	945,404	1645,375	2212,872	2444,265	702,120	1536,584	2079,504	2895,379	2204,207	2084,190
CL	2022,140	1862,379	593,062	1125,100	0,000	1082,389	547,527	1045,122	721,002	3059,858	3017,390	633,912	1159,747	955,071	3251,977	2736,056	961,067
CM	988,345	1027,982	1642,657	1529,609	1082,389	0,000	1041,570	662,124	1735,081	2577,962	2265,507	1518,513	99,408	1435,831	2326,859	1980,583	1536,137
CN	1803,185	1514,464	1045,311	621,086	547,527	1041,570	0,000	672,167	1198,410	2541,019	2575,022	517,220	1079,104	1482,207	2891,379	2302,857	1501,297
CO	1153,317	845,654	1629,259	945,404	1045,122	662,124	672,167	0,000	1765,137	2089,681	1973,091	1184,403	636,127	1779,472	2231,585	1691,065	1843,677
CP	2709,479	2581,375	160,879	1645,375	721,002	1735,081	1198,410	1765,137	0,000	3739,126	3735,476	960,490	1823,686	841,609	3969,285	3455,209	748,188
CQ	2069,110	1629,713	3584,440	2212,872	3059,858	2577,962	2541,019	2089,681	3739,126	0,000	846,981	2885,186	2495,567	3869,064	1546,391	920,546	3930,410
CR	1497,326	1237,787	3595,080	2444,265	3017,390	2265,507	2575,022	1973,091	3735,476	846,981	0,000	3020,017	2169,476	3677,030	703,287	286,932	3762,277
CS	2320,320	2018,746	801,512	702,120	633,912	1518,513	517,220	1184,403	960,490	2885,186	3020,017	0,000	1568,822	1531,277	3381,395	2757,834	1504,934
CT	893,013	932,620	1727,618	1536,584	1159,747	99,408	1079,104	636,127	1823,686	2495,567	2169,476	1568,822	0,000	1535,220	2227,584	1885,009	1635,478
CU	2399,083	2444,815	904,757	2079,504	955,071	1435,831	1482,207	1779,472	841,609	3869,064	3677,030	1531,277	1535,220	0,000	3760,453	3390,157	132,412
CV	1380,070	1390,856	3844,688	2895,379	3251,977	2326,859	2891,379	2231,585	3969,285	1546,391	703,287	3381,395	2227,584	3760,453	0,000	771,110	3862,921
CW	1245,215	952,602	3316,279	2204,207	2736,056	1980,583	2302,857	1691,065	3455,209	920,546	286,932	2757,834	1885,009	3390,157	771,110	0,000	3475,354
CX	2507,915	2534,549	828,961	2084,190	961,067	1536,137	1501,297	1843,677	748,188	3930,410	3762,277	1504,934	1635,478	132,412	3862,921	3475,354	0,000
CY	2035,590	1684,294	3854,433	2550,465	3304,136	2693,714	2810,401	2288,367	4004,431	438,201	593,688	3196,621	2603,358	4054,188	1229,197	793,363	4126,811
CZ	2407,157	2412,936	726,942	1938,908	815,098	1427,126	1354,842	1706,766	668,581	3791,080	3636,188	1368,095	1526,033	178,000	3752,730	3349,378	146,455
DA	1352,439	956,143	1654,072	707,764	1103,340	935,674	619,589	276,653	1801,991	1959,504	1955,684	1084,980	912,691	1935,353	2297,251	1684,903	1984,748
DB	2211,499	2064,818	394,738	1258,651	204,010	1255,370	722,281	1249,078	517,254	3253,122	3221,088	674,392	1337,818	857,303	3453,689	2939,931	838,147
DC	1115,551	866,914	3274,062	2216,781	2688,738	1890,765	2275,296	1644,898	3409,496	1065,892	385,632	2743,744	1793,698	3311,662	700,928	146,731	3400,538
DD	1140,621	656,049	2029,834	986,140	1467,044	1047,829	1000,800	467,172	2175,256	1623,837	1574,280	1458,758	990,364	2245,458	1933,639	1303,906	2306,985
DE	1099,505	1131,781	1541,267	1514,332	989,991	112,112	994,925	693,430	1630,142	2663,407	2369,545	1454,539	211,038	1325,187	2438,588	2084,012	1424,598
DF	504,061	549,431	2103,651	1640,526	1518,617	519,542	1316,420	699,385	2210,886	2167,864	1770,088	1831,570	420,145	1955,154	1807,777	1489,228	2055,564
DG	2549,875	2560,025	758,726	2052,536	934,957	1572,011	1479,985	1851,124	670,717	3933,391	3783,231	1457,036	1671,067	210,794	3898,257	3496,432	84,077
DH	961,654	818,270	3267,698	2297,075	2676,895	1811,954	2297,018	1644,230	3397,105	1285,843	551,841	2782,734	1713,075	3245,219	600,930	365,367	3340,149
DI	1636,816	1553,083	976,715	1272,841	432,464	665,980	656,089	824,157	1073,123	2912,703	2760,929	986,341	751,601	957,106	2923,842	2474,727	1019,702
DJ	1471,459	940,356	2714,248	1414,850	2179,854	1749,523	1668,951	1214,078	2866,866	882,257	1061,379	2047,063	1676,472	2991,150	1633,173	869,508	3050,010
DK	516,962	827,254	3116,388	2456,590	2529,798	1505,271	2274,976	1607,661	3223,331	1962,611	1235,113	2790,718	1409,937	2908,518	924,578	1050,454	3019,565
DL	1634,399	1158,775	3125,662	1812,983	2586,794	2084,077	2080,372	1599,140	3277,754	495,404	765,467	2456,941	2002,795	3378,365	1427,683	671,305	3442,143
DM	419,974	266,190	2686,120	1898,065	2093,067	1181,042	1770,201	1098,505	2807,619	1649,817	1124,180	2278,250	1081,934	2615,927	1164,389	854,420	2712,974
DN	2873,634	2554,148	921,943	1062,379	1080,592	2064,259	1070,877	1731,060	1039,417	3266,177	3492,857	555,241	2118,771	1809,579	3897,073	3242,254	1746,086
DO	2506,111	2168,784	956,033	688,105	879,001	1745,417	715,902	1356,055	1106,455	2900,829	3103,534	248,477	1790,057	1750,356	3505,913	2851,404	1714,029
DP	497,855	819,825	3098,888	2447,475	2512,738	1485,979	2261,115	1594,571	3205,327	1975,164	1252,224	2777,115	1390,862	2887,838	946,620	1064,592	2999,083
DQ	1183,720	941,816	3344,877	2273,284	2760,320	1965,753	2342,978	1715,980	3480,919	1033,257	314,231	2808,327	1868,665	3386,512	664,669	120,619	3475,219
DR	2066,915	1675,123	1303,734	181,135	954,143	1455,480	478,132	923,598	1464,604	2367,960	2558,633	527,296	1473,486	1909,202	2978,916	2309,492	1910,169
DS	729,176	928,009	3301,640	2555,299	2711,291	1712,141	2423,824	1751,882	3413,839	1830,138	1055,555	2935,407	1614,937	3128,207	687,255	909,621	3237,008
DT	2979,205	2677,623	869,805	1215,796	1117,942	2141,082	1177,762	1846,007	968,827	3423,004	3638,249	661,662	2200,878	1772,102	4030,594	3384,896	1698,679
DU	664,680	141,014	2357,057	1493,626	1767,125	1000,162	1396,070	734,319	2487,888	1602,314	1286,122	1894,975	909,803	2391,667	1497,600	999,202	2476,155
DV	2016,289	1560,611	3475,368	2100,060	2953,723	2491,928	2432,658	1991,136	3630,419	113,018	871,620	2773,302	2411,226	3769,828	1574,871	909,376	3829,566
DW	1858,108	1931,193	1106,897	1849,529	825,005	908,073	1228,593	1343,721	1121,988	3417,755	3168,487	1458,469	1006,722	542,477	3224,250	2882,437	658,656
DX	965,900	1197,419	3558,991	2822,833	2970,238	1954,235	2691,871	2020,203	3668,354	1958,162	1136,201	3204,127	1858,608	3355,327	596,729	1052,398	3467,295
DY	3050,636	2779,005	760,443	1381,145	1113,677	2174,382	1265,711	1937,820	833,406	3593,715	3778,789	765,916	2241,232	1662,780	4146,905	3519,953	1578,586
DZ	1518,370	1238,259	1258,459	738,068	694,073	805,777	285,272	392,674	1401,725	2370,671	2337,021	802,402	828,206	1539,703	2622,319	2059,440	1582,145
EA	1092,206	899,210	1560,536	1119,608	967,478	432,759	720,620	235,372	1683,623	2280,088	2094,939	1234,557	420,459	1602,389	2285,683	1808,873	1677,106
EB	969,596	889,858	3344,287	2402,170	2752,220	1859,478	2385,407	1726,785	3471,139	1371,825	596,178	2875,936	1760,165	3295,108	506,004	455,089	3392,892
EC	1850,916	1408,848	1605,770	231,866	1175,151	1398,003	632,210	772,539	1765,784	2022,930	2219,014	863,264	1392,314	2114,036	2663,589	1975,656	2133,028
ED	2413,294	2242,546	223,600	1280,958	391,164	1466,932	821,937	1411,664	377,922	3361,816	3374,015	620,996	1547,212	955,877	3633,348	3095,958	907,899
EE	729,636	445,180	2887,615	1946,192	2297,272	1462,360	1918,400	1263,666	3017,793	1345,705	811,252	2408,009	1364,927	2887,418	973,703	535,306	2978,581
EF	1051,468	1160,338	3587,636	2748,175	2995,080	2023,831	2674,581	2004,216	3705,107	1715,010	882,879	3178,499	1925,497	3448,392	363,890	826,464	3555,095
EG	2446,823	2315,308	174,657	1452,502	457,018	1477,323	958,088	1502,133	266,332	3496,887	3474,111	804,270	1564,126	785,831	3702,981	3193,002	729,277
EH	1918,696	1438,633	1813,453	355,373	1396,504	1565,890	854,280	916,014	1974,041	1858,673	2125,840	1049,494	1550,085	2336,053	2616,572	1898,884	2354,953
EI	2114,138	1773,298	1052,170	432,681	730,302	1396,340	355,844	962,000	1213,046	2593,822	2737,123	291,757	1430,766	1681,036	3117,797	2478,343	1674,783
EJ	665,552	272,677	2705,588	1784,040	2115,460	1299,671	1737,903	1081,605	2836,099	1413,125	965,854	2230,025	1203,665	2717,171	1153,489	681,622	2806,223
EK	1677,007	1754,126	1199,634	1775,523	829,327	728,616	1160,142	1197,483	1235,115	3257,248	2991,840	1450,167	826,840	722,433	3042,635	2706,149	835,374
EL	1408,070	1021,519	1591,866	656,832	1046,886	946,138	554,032	300,541	1740,858	2013,396	2022,159	1016,673	930,155	1893,793	2365,459	1752,103	1939,820
EM	2356,680	2015,057	990,869	559,647	816,077	1615,166	576,990	1205,173	1147,870	2769,662	2955,105	198,957	1655,653	1728,521	3352,569	2701,230	1703,634
EN	1554,846	1016,808	2665,819	1332,358	2143,522	1773,079	1622,124	1208,401	2820,280	918,896	1168,251	1980,003	1704,618	2976,534	1748,838	983,734	3030,816
EO	544,132	23,000	2477,318	1649,092	1885,155	1049,515	1535,736	867,417	2604,222	1614,933	1216,069	2039,393	953,919	2467,285	1368,307	931,125	2557,194
EP	2068,217	1700,826	3835,141	2515,059	3289,664	2702,648	2790,201	2281,166	3986,227	369,900	650,846	3167,835	2613,531	4052,006	1300,031	832,332	4122,521
EQ	1655,447	1279,413	3473,182	2218,373	2914,557	2285,723	2432,892	1889,569	3620,853	480,759	386,432	2840,023	2195,560	3649,465	1088,482	447,182	3723,730
ER	1525,152	1104,877	1630,355	535,023	1114,136	1099,593	585,746	451,208	1784,099	1955,314	2027,889	992,156	1083,415	1996,531	2412,554	1766,587	2035,067
ES	336,150	548,401	2873,874	2176,986	2283,611	1293,062	2006,431	1336,363	2986,370	1830,283	1189,354	2520,679	1194,817	2719,360	1047,240	956,737	2825,011
ET	152,329	552,302	2460,092	1968,464	1879,424	837,234	1680,345	1044,359	2562,190	2141,437	1612,007	2196,530	742,647	2247,022	1527,635	1350,431	2355,644

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KOTA	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO
A	2662,811	1370,173	473,193	846,180	2055,408	824,357	719,401	1016,736	1508,792	2057,183	532,673	1548,941	1989,030	1951,443	1502,140	1370,013	1018,415
B	1147,896	3062,972	1221,283	2489,062	1150,125	941,883	2045,660	1671,003	3201,366	1332,538	2201,840	281,114	1852,771	446,587	1362,235	2475,529	2107,593
C	1419,298	3312,230	1945,112	3041,823	588,463	1603,746	1997,156	1368,316	3457,028	379,120	2497,500	1465,945	482,116	1375,388	751,130	3549,189	3161,168
D	3515,004	1323,588	1406,770	693,745	3067,123	1782,152	1684,185	2115,024	1383,309	3103,472	1163,198	2366,373	3091,443	2775,018	2589,212	335,431	340,588
E	347,311	3814,349	2083,078	3368,969	622,774	1704,935	2569,246	1984,452	3960,973	803,204	2933,428	1103,778	1488,248	739,797	1353,250	3574,891	3189,672
F	3054,937	1030,866	854,112	449,755	2449,091	1218,362	862,324	1326,875	1160,011	2444,047	382,284	1931,021	2329,712	2337,602	1871,817	1134,035	854,289
G	1701,297	2527,455	1182,466	2230,733	811,121	893,801	1219,082	592,220	2673,733	705,063	1692,635	1110,693	590,161	1265,735	73,389	2770,945	2388,576
H	2693,142	1552,158	560,057	898,614	2216,688	931,709	1143,753	1383,418	1673,832	2257,753	856,893	1544,205	2298,252	1956,353	1769,361	1047,855	663,827
I	1671,570	2525,930	1147,476	2216,070	792,548	851,150	1221,886	600,308	2672,488	699,263	1684,300	1061,407	632,096	1222,260	78,109	2740,418	2356,782
J	3383,899	621,167	1221,101	362,221	2702,412	1552,155	838,848	1433,813	761,215	2666,061	296,609	2290,813	2442,374	2687,385	2056,241	1365,413	1179,004
K	3108,513	1071,825	1231,189	1078,355	2302,515	1417,950	321,310	918,970	1210,714	2216,085	534,072	2142,690	1855,643	2489,664	1584,028	2022,982	1761,447
L	1849,783	2530,861	1334,657	2291,664	930,002	1078,141	1216,112	591,434	2675,314	780,933	1730,593	1325,409	442,340	1463,520	248,847	2897,246	2521,284
M	224,163	3901,674	2086,666	3386,450	996,386	1734,950	2735,093	2207,928	4045,589	1209,944	3019,037	1013,367	1900,043	603,253	1646,077	3444,718	3074,086
N	1238,199	3486,406	2040,375	3186,083	511,893	1682,052	2172,940	1541,974	3632,117	359,050	2655,734	1441,613	702,599	1290,381	896,228	3643,083	3252,558
O	3168,135	1094,701	1334,700	1163,084	2345,195	1507,237	400,196	956,228	1228,243	2249,376	637,628	2223,856	1857,053	2562,785	1618,330	2123,729	1868,806
P	3885,729	773,644	1687,937	445,136	3314,713	2065,232	1595,856	2154,391	798,076	3311,040	1030,653	2743,391	3166,879	3155,206	2732,565	889,163	945,822
Q	3179,832	1082,540	1341,101	1156,004	2357,664	1516,148	409,684	968,765	1215,846	2262,128	634,353	2233,791	1870,060	2573,497	1631,029	2119,332	1866,293
R	3829,924	395,702	1634,615	359,006	3181,633	1991,239	1324,748	1927,050	462,050	3152,712	788,885	2712,294	2934,516	3117,604	2547,260	1237,031	1198,314
S	3378,558	1044,150	1196,505	357,532	2849,383	1577,743	1326,775	1796,349	1131,203	2864,054	793,202	2231,850	2792,421	2644,134	2315,750	705,028	542,797
T	1939,903	2378,407	1217,435	2140,059	1036,851	990,051	1063,423	437,852	2523,072	906,502	1577,336	1323,257	586,352	1502,744	306,198	2761,828	2389,168
U	3338,499	733,160	1306,129	781,300	2575,762	1566,818	587,487	1218,255	876,056	2506,995	371,446	2311,710	2188,227	2683,615	1877,789	1779,437	1565,211
V	3954,408	788,448	1757,380	512,622	3384,891	2134,940	1659,554	2221,850	800,000	3381,080	1095,231	2811,452	3234,513	3223,372	2801,994	906,722	989,376
W	2568,492	1610,938	978,001	1443,504	1738,464	1018,168	301,100	350,565	1754,831	1647,308	855,697	1677,641	1315,526	1988,566	1015,286	2224,925	1893,563
X	3855,578	225,211	1678,986	476,765	3173,415	2020,757	1259,443	1878,734	324,052	3132,039	763,791	2754,512	2875,764	3154,517	2516,272	1414,539	1356,895
Y	1528,101	2473,049	796,990	2037,456	867,698	427,720	1271,110	792,456	2619,344	905,108	1590,599	622,014	1118,537	905,455	554,777	2391,228	1999,972
Z	3806,240	1608,124	1775,687	1061,886	3421,637	2140,707	2100,740	2525,825	1637,777	3471,767	1573,256	2668,320	3492,581	3068,699	2979,267	196,573	576,067
AA	1977,992	2487,499	1397,443	2285,345	1052,935	1167,709	1178,671	576,213	2630,371	891,852	1712,921	1456,237	438,990	1599,974	384,666	2933,645	2563,398
AB	2267,161	1731,851	229,264	1258,479	1639,848	437,375	739,851	736,414	1875,524	1645,572	851,496	1183,292	1628,632	1572,264	1111,328	1710,979	1332,956
AC	1308,551	3188,817	1753,656	2885,367	412,572	1403,933	1876,844	1246,134	3334,793	192,044	2355,041	1254,434	515,644	1183,799	595,413	3358,157	2968,729
AD	875,673	3367,713	1748,574	2982,526	90,449	1370,228	2085,555	1476,195	3514,850	255,812	2500,084	989,959	948,135	808,065	822,061	3322,983	2931,438
AE	2729,190	1894,045	868,380	1200,403	2404,372	1167,015	1605,700	1785,852	1998,606	2483,228	1302,065	1598,347	2629,069	1993,425	2074,120	883,532	521,967
AF	2906,803	1229,753	1065,809	1132,264	2105,620	1227,228	121,017	728,457	1372,837	2024,263	547,317	1945,535	1692,220	2289,122	1392,622	2014,314	1723,140
AG	149,164	3984,322	2175,346	3475,800	1017,892	1819,891	2806,086	2268,581	4128,659	1225,686	3100,926	1105,421	1917,968	693,675	1691,554	3543,728	3172,334
AH	1491,432	2888,873	1505,944	2596,581	559,129	1178,493	1576,423	945,650	3034,743	388,075	2059,237	1181,418	403,448	1212,941	303,424	3107,552	2721,077
AI	2155,644	2398,790	1454,643	2244,135	1229,069	1263,716	1108,120	559,521	2539,241	1062,452	1661,068	1612,498	532,358	1772,091	556,087	2945,709	2584,483
AJ	3756,509	267,711	1637,565	651,332	3023,543	1945,750	1050,274	1681,036	410,206	2963,317	657,508	2691,475	2653,865	3078,811	2336,728	1663,383	1549,148
AK	285,955	3819,618	2073,400	3363,955	661,910	1697,335	2584,057	2006,488	3966,001	851,189	2937,311	1075,169	1539,912	698,946	1383,874	3550,200	3166,427
AL	3860,069	155,438	1697,782	545,619	3160,704	2030,407	1222,258	1847,601	284,185	3112,824	755,154	2769,187	2836,963	3165,766	2492,629	1505,919	1436,989
AM	696,501	3379,746	1675,313	2947,929	271,459	1294,169	2132,084	1552,094	3526,524	491,753	2500,311	792,692	1171,633	554,994	937,666	3209,419	2819,977
AN	1433,021	2728,214	888,091	2152,994	1230,629	638,464	1745,549	1431,721	2866,071	1374,804	1871,290	313,944	1785,740	695,589	1245,931	2179,852	1803,247
AO	1414,102	3758,639	2374,511	3492,032	839,434	2020,864	2443,926	1816,802	3902,948	702,636	2948,125	1774,856	871,519	1592,573	1199,592	3978,733	3588,900
AP	2649,453	1758,843	662,192	1080,867	2256,615	990,437	1379,150	1563,317	1873,240	2320,623	1102,550	1503,069	2428,531	1909,507	1880,802	986,936	597,227
AQ	1590,165	3255,028	1973,902	3018,862	742,195	1649,914	1942,733	1322,262	3398,406	524,765	2461,456	1582,243	357,561	1521,270	755,499	3572,026	3187,208
AR	1036,031	3028,807	1197,379	2494,193	898,909	864,026	1933,497	1500,642	3170,818	1076,998	2152,128	119,541	1602,829	296,285	1129,476	2582,911	2203,294
AS	2789,301	1436,709	1112,490	1350,607	1955,261	1204,708	213,354	566,079	1577,515	1858,122	762,079	1886,510	1486,435	2205,302	1227,066	2207,046	1900,067
AT	1446,821	3175,031	1813,576	2902,646	560,904	1477,623	1860,000	1230,498	3320,018	340,414	2358,416	1383,980	391,900	1329,498	612,870	3416,690	3029,426
AU	2780,425	1223,814	757,492	921,982	2056,154	995,617	302,794	788,384	1370,810	2011,925	359,801	1740,392	1801,247	2114,677	1399,832	1698,600	1385,059
AV	993,844	3689,386	2149,151	3349,018	500,036	1775,964	2383,675	1755,622	3836,009	470,129	2840,119	1411,370	984,210	1183,300	1092,876	3736,774	3345,037
AW	3097,908	1002,960	895,940	405,739	2495,547	1262,230	898,947	1371,992	1129,615	2490,996	400,671	1971,919	2375,738	2379,201	1918,830	1101,368	832,640
AX	961,002	3052,202	1243,277	2543,945	737,197	885,528	1910,671	1437,153	3196,005	916,413	2170,033	221,822	1459,306	258,070	1010,006	2688,518	2304,462
AY	1717,386	2327,715	812,081	1950,573	952,748	511,376	1073,932	545,990	2474,817	930,301	1456,923	876,088	972,825	1140,342	412,238	2412,870	2026,438
AZ	605,607	3724,113	2056,795	3317,507	454,974	1675,372	2450,104	1844,143	3871,222	591,571	2851,253	1167,120	1256,409	863,531	1190,484	3598,027	3208,504
BA	3630,046	826,398	1432,956	255,828	3065,303	1810,961	1402,430	1933,930	892,498	3066,123	838,048	2487,852	2943,675	2899,610	2495,360	816,002	770,887
BB	1465,894	2761,892	930,577	2170,923	1318,382	713,477	1815,257	1523,139	2897,868	1468,608	1914,917	387,939	1888,873	737,625	1349,491	2148,698	1778,034
BC	1651,235	2747,018	1444,867	2480,413	721,374	1144,035	1432,201	802,075	2892,212	556,692	1931,115	1251,958	347,508	1329,351	226,385	3035,096	2652,582
BD	3019,616	1559,013	971,511	861,539	2609,201	1329,772	1487,442	1794,366	1655,089	2662,127	1079,044	1873,116	2718,891	2279,688	2188,216	634,289	244,598
BE	1768,852	2434,812	1110,045	2139,167	892,236	838,888	1127,437	502,642	2581,145	794,833	1599,707	1120,104	656,415	1303,396	163,487	2690,988	2310,337
BF	1985,127	2007,486	382,341	1559,566	1337,288	232,693	885,032	631,677	2152,885	1347,043	1123,271	945,040	1384,395	1311,440	840,729	1978,260	1592,470
BG	3435,115	724,334	1441,466	895,116	2650,691	1687,014	654,316	1274,847	858,073	2571,131	522,245	2428,454	2215,631	2793,107	1939,413	1908,095	1706,517
BH	2354,022	1948,783	1123,485	1782,215	1477,229	1041,061	646,124	195,041	2091,315	1359,862	1197,693	1585,167	973,062	1841,459	738,649	2518,816	2170,254
BI	1692,715	2309,189	673,276	1883,068	1012,246	336,610	1110,309	664,906	2455,590	1027,759	1427,353	748,174	1149,028	1060,288	581,946	2277,326	1887,782
BJ	2241,090	2099,559	1180,756	1920,644	1349,401	1049,167	794,119	247,407	2242,226	1222,295	1339,661	1529,851	822,944	1759,420	612,053	2629,574	2273,389
BK	2947,063	1085,029	761,079	577,728	2315,280	1108,529	715,010	1170,156	1222,239	2303,160	303,026	1836,910	2174,572	2238,677	1723,267	1279,426	980,159
BL	1384,263	2735,142	892,908	2173,095	1151,851	613,922	1721,035	1382,572	2874,413	1294,558	1871,010	246,376	1708,771	644,376	1172,531	2233,304	1853,576
BM	3645,562	1373,073	1551,279	786,820	3210,286	1925,326	1820,373	2260,436	1418,711	3248,645	1289,996	2498,467	3238,408	2905,599	2736,281	260,279	430,763
BN	3731,019	1291,716	1613,347	743,864	3275,321	1990,892	1822,364	2287,030	1329,361	3307,223	1278,616	2582,237	3274,885	2991,048	2782,599	357,649	536,680
BO	2085,950	1961,628	120,154	1419,344	1565,238	280,360	1040,623	951,237	2101,284	1611,077	1100,608	957,892	1719,449	1364,183	1164,057	1685,388	1294,472
BP	1084,772	2916,582	1186,468	2463,853	529,469	805,420	1706,986	1178,925	3062,690	660,147	2033,360	448,642	1144,592	526,408	694,713	2731,626	2340,901
BQ	1424,816	2589,925	778,617	2078,702	986,697	421,495	1489,902	1099,565	2733,087	1091,707	1709,838	335,006	1433,940	714,077	885,016	2276,774	1887,176
BR	3968,026	974,579	1787,974	625,429	3436,032	2168,952	1782,364	2321,496	983,588	3443,677	1216,193	2819,791	3331,257	3232,007	2879,502	753,824	894,465
BS	1345,384	3713,226	2305,347	3435,059	757,355	1948,916	2398,152	1769,087	3858,033	625,304	2895,750	1692,913	847,238	1510,246	1141,620	3908,870	3518,612
BT	3335,101	677,942	1246,849	631,547	2601,001	1534,746	646,877	1272,063	824,842	2544,509	269,201	2281,642	2262,788	2663,611	1920,710	1628,037	1419,060
BU	1132,397	2873,274	1071,389	2371,044	776,137	708,232	1733,852	1275,621	3017,267	923,949	1990,738	186,344	1393,991	436,940	901,959	2548,828	2161,626
BV	3365,237	743,180	1355,071	839,601	2591,271	1606,253	596,201	1223,855	882,755	2517,202	434,867	2349,327	2181,250	2717,199	1886,479	1842,573	1630,872
BW	3146,485	1197,925	973,580	503,001	2632,927	1354,889	1227,580	1637,833	1301,217	2655,408	749,801	1998,948	2617,049	2411,237	2122,963	767,819	484,025

Sumber : www.lwr.uni-heidelberg.de/ groups/ comopt/ software/ TSPLIB95/ XML-TSPLIB/ instances/

KOTA	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO
BX	240,354	3999,241	2180,305	3479,119	1089,296	1831,596	2836,959	2310,753	4142,901	1300,441	3117,121	1104,525	1991,924	697,284	1747,179	3520,229	3152,307
BY	2209,646	1980,043	960,927	1744,940	1359,950	853,038	665,548	35,903	2125,340	1265,077	1176,589	1400,384	977,149	1669,713	633,078	2417,957	2057,838
BZ	589,406	3697,386	2022,823	3286,340	435,184	1641,397	2426,827	1823,728	3844,467	584,113	2823,290	1127,621	1257,198	823,848	1173,196	3561,012	3171,683
CA	3665,214	611,110	1462,330	161,941	3052,262	1829,860	1282,899	1852,618	690,294	3037,064	719,689	2535,667	2865,443	2944,400	2446,431	1039,008	972,303
CB	2803,369	1818,632	891,669	1123,178	2459,197	1208,147	1581,879	1792,860	1920,904	2532,178	1252,307	1667,993	2657,449	2066,178	2107,129	809,133	439,414
CC	1487,385	2509,813	810,600	2064,608	851,780	434,504	1316,974	843,822	2655,871	901,588	1626,491	570,790	1147,138	856,515	587,892	2397,142	2005,540
CD	586,287	3545,793	1714,701	3009,532	945,104	1378,778	2424,957	1943,078	3688,084	1164,062	2667,644	637,133	1815,017	258,103	1455,497	3044,950	2675,002
CE	1627,973	2763,132	1447,207	2491,918	698,033	1142,167	1448,580	818,022	2908,465	533,904	1944,595	1236,723	355,985	1309,352	226,153	3039,701	2656,517
CF	3522,690	481,740	1360,818	368,307	2834,498	1691,907	939,281	1548,726	621,203	2794,061	424,887	2430,845	2552,304	2827,232	2180,222	1395,276	1244,807
CG	1023,238	3009,192	1315,809	2578,695	376,428	934,607	1771,756	1211,601	3155,881	512,606	2129,066	585,817	1046,039	573,482	656,896	2875,673	2484,453
CH	2035,590	2407,157	1352,439	2211,499	1115,551	1140,621	1099,505	504,061	2549,875	961,654	1636,816	1471,459	516,962	1634,399	419,974	2873,634	2506,111
CI	1684,294	2412,936	956,143	2064,818	866,914	656,049	1131,781	549,431	2560,025	818,270	1553,083	940,356	827,254	1158,775	266,190	2554,148	2168,784
CJ	3854,433	726,942	1654,072	394,738	3274,062	2029,834	1541,267	2103,651	758,726	3267,698	976,715	2714,248	3116,388	3125,662	2686,120	921,943	956,033
CK	2550,465	1938,908	707,764	1258,651	2216,781	986,140	1514,332	1640,526	2052,536	2297,075	1272,841	1414,850	2456,590	1812,983	1898,065	1062,379	688,105
CL	3304,136	815,098	1103,340	204,010	2688,738	1467,044	989,991	1518,617	934,957	2676,895	432,464	2179,854	2529,798	2586,794	2093,067	1080,592	879,001
CM	2693,714	1427,126	935,674	1255,370	1890,765	1047,829	112,112	519,542	1572,011	1811,954	665,980	1749,523	1505,271	2084,077	1181,042	2064,259	1745,417
CN	2810,401	1354,842	619,589	722,281	2275,296	1000,800	994,925	1316,420	1479,985	2297,018	656,089	1668,951	2274,976	2080,372	1770,201	1070,877	715,902
CO	2288,367	1706,766	276,653	1249,078	1644,898	467,172	693,430	699,385	1851,124	1644,230	824,157	1214,078	1607,661	1599,140	1098,505	1731,060	1356,055
CP	4004,431	668,581	1801,991	517,254	3409,496	2175,256	1630,142	2210,886	670,717	3397,105	1073,123	2866,866	3223,331	3277,754	2807,619	1039,417	1106,455
CQ	438,201	3791,080	1959,504	3253,122	1065,892	1623,837	2663,407	2167,864	3933,391	1285,843	2912,703	882,257	1962,611	495,404	1649,817	3266,177	2900,829
CR	593,688	3636,188	1955,684	3221,088	385,632	1574,280	2369,545	1770,088	3783,231	551,841	2760,929	1061,379	1235,113	765,467	1124,180	3492,857	3103,534
CS	3196,621	1368,095	1084,980	674,392	2743,744	1458,758	1454,539	1831,570	1457,036	2782,734	986,341	2047,063	2790,718	2456,941	2278,250	555,241	248,477
CT	2603,358	1526,033	912,691	1337,818	1793,698	990,364	211,038	420,145	1671,067	1713,075	751,601	1676,472	1409,937	2002,795	1081,934	2118,771	1790,057
CU	4054,188	178,000	1935,353	857,303	3311,662	2245,458	1325,187	1955,154	210,794	3245,219	957,106	2991,150	2908,518	3378,365	2615,927	1809,579	1750,356
CV	1229,197	3752,730	2297,251	3453,689	700,928	1933,639	2438,588	1807,777	3898,257	600,930	2923,842	1633,173	924,578	1427,683	1164,389	3897,073	3505,913
CW	793,363	3349,378	1684,903	2939,931	146,731	1303,906	2084,012	1489,228	3496,432	365,367	2474,727	869,508	1050,454	671,305	854,420	3242,254	2851,404
CX	4126,811	146,455	1984,748	838,147	3400,538	2306,985	1424,598	2055,564	84,077	3340,149	1019,702	3050,010	3019,565	3442,143	2712,974	1746,086	1714,029
CY	0,000	3992,604	2203,355	3503,426	932,655	1838,686	2789,475	2233,554	4137,891	1130,977	3108,387	1149,961	1822,040	740,017	1633,863	3612,202	3236,178
CZ	3992,604	0,000	1842,245	697,482	3277,462	2168,433	1315,075	1945,113	147,139	3222,431	884,217	2910,010	2921,342	3303,940	2597,901	1632,515	1582,101
DA	2203,355	1842,245	0,000	1300,740	1662,348	381,430	958,863	940,454	1981,612	1697,963	984,533	1077,840	1766,354	1483,495	1221,651	1604,618	1216,057
DB	3503,426	697,482	1300,740	0,000	2892,730	1667,919	1157,045	1709,318	798,236	2880,037	590,810	2374,833	2721,915	2783,206	2293,438	1027,177	900,188
DC	932,655	3277,462	1662,348	2892,730	0,000	1284,998	1996,560	1389,208	3424,601	220,538	2409,637	935,624	903,839	789,240	738,756	3240,891	2849,225
DD	1838,686	2168,433	381,430	1667,919	1284,998	0,000	1107,849	846,093	2311,616	1332,743	1288,871	746,906	1483,223	1135,553	917,767	1963,770	1572,395
DE	2789,475	1315,075	958,863	1157,045	1996,560	1107,849	0,000	630,971	1460,041	1921,146	566,255	1824,555	1616,325	2168,558	1290,911	1994,264	1687,004
DF	2233,554	1945,113	940,454	1709,318	1389,208	846,093	630,971	0,000	2090,506	1297,126	1140,688	1409,832	1012,878	1685,909	665,075	2386,580	2027,765
DG	4137,891	147,139	1981,612	798,236	3424,601	2311,616	1460,041	2090,506	0,000	3369,229	1029,723	3051,862	3063,279	3447,163	2744,298	1678,971	1660,261
DH	1130,977	3222,431	1697,963	2880,037	220,538	1332,743	1921,146	1297,126	3369,229	0,000	2370,289	1097,416	692,370	997,934	632,057	3296,317	2905,080
DI	3108,387	884,217	984,533	590,810	2409,637	1288,871	566,255	1140,688	1029,723	2370,289	0,000	2034,096	2151,620	2423,139	1759,632	1489,236	1233,310
DJ	1149,961	2910,010	1077,840	2374,833	935,624	746,906	1824,555	1409,832	3051,862	1097,416	2034,096	0,000	1580,185	412,292	1081,504	2476,346	2094,666
DK	1822,040	2921,342	1766,354	2721,915	903,839	1483,223	1616,325	1012,878	3063,279	692,370	2151,620	1580,185	0,000	1612,090	568,570	3338,710	2961,418
DL	740,017	3303,940	1483,495	2783,206	789,240	1135,553	2168,558	1685,909	3447,163	997,934	2423,139	412,292	1612,090	0,000	1216,163	2875,307	2497,352
DM	1633,863	2597,901	1221,651	2293,438	738,756	917,767	1290,911	665,075	2744,298	632,057	1759,632	1081,504	568,570	1216,163	0,000	2816,693	2432,514
DN	3612,202	1632,515	1604,618	1027,177	3240,891	1963,770	1994,264	2386,580	1678,971	3296,317	1489,236	2476,346	3338,710	2875,307	2816,693	0,000	391,737
DO	3236,178	1582,101	1216,057	900,188	2849,225	1572,395	1687,004	2027,765	1660,261	2905,080	1233,310	2094,666	2961,418	2497,352	2432,514	391,737	0,000
DP	1838,261	2901,183	1755,777	2704,487	918,101	1475,870	1596,923	995,253	3043,002	707,956	2133,363	1583,491	22,136	1620,863	563,214	3325,616	2948,937
DQ	874,954	3351,961	1728,575	2964,327	75,000	1349,984	2071,560	1463,836	3499,100	259,237	2483,496	968,773	951,262	790,537	811,815	3302,082	2910,560
DR	2693,572	1765,432	722,974	1080,907	2312,293	1049,132	1428,135	1622,543	1876,680	2378,293	1134,004	1549,248	2489,299	1953,938	1941,262	934,248	546,628
DS	1648,819	3135,312	1883,924	2906,935	765,101	1570,350	1823,998	1206,115	3278,452	544,615	2346,331	1553,676	237,716	1524,900	662,282	3476,906	3093,901
DT	3766,259	1594,113	1734,343	1035,986	3380,217	2099,272	2065,255	2486,726	1627,285	3430,354	1540,495	2627,828	3452,277	3028,534	2938,348	159,656	535,014
DU	1693,697	2350,452	823,729	1970,641	930,798	515,097	1097,623	567,733	2497,544	911,058	1479,035	857,914	968,133	1118,278	404,468	2425,945	2038,951
DV	530,065	3689,651	1854,914	3146,179	1051,484	1524,436	2575,310	2092,930	3831,466	1271,961	2812,980	779,642	1936,757	408,796	1596,316	3153,162	2787,978
DW	3572,916	583,271	1544,726	851,076	2796,806	1808,000	800,432	1424,197	712,632	2719,756	585,714	2552,593	2366,387	2922,965	2088,313	1876,834	1704,001
DX	1722,985	3370,043	2153,444	3164,281	918,610	1837,208	2065,390	1457,590	3511,693	706,824	2597,926	1777,570	449,177	1704,547	931,841	3746,248	3363,459
DY	3927,900	1485,592	1850,893	997,628	3508,601	2223,868	2091,002	2551,837	1503,008	3548,541	1545,411	2783,866	3535,091	3188,535	3035,848	356,793	693,046
DZ	2610,107	1438,208	411,206	893,847	2022,567	774,290	779,687	1034,552	1575,494	2032,105	609,105	1489,037	1990,152	1894,010	1490,592	1355,284	993,358
EA	2451,800	1546,080	503,775	1168,247	1746,226	675,173	458,154	597,210	1692,587	1717,056	666,083	1415,403	1582,242	1785,791	1125,592	1789,699	1434,794
EB	1187,283	3277,939	1792,341	2954,668	318,277	1431,980	1969,921	1341,072	3424,359	116,211	2434,739	1213,593	640,488	1105,485	680,068	3393,945	3003,180
EC	2345,232	1986,590	511,941	1334,541	1986,059	757,980	1397,739	1452,374	2109,939	2065,210	1242,223	1201,313	2234,784	1605,571	1673,278	1277,518	893,430
ED	3630,833	781,957	1430,768	217,111	3055,644	1807,112	1370,488	1909,775	851,156	3053,147	804,915	2490,883	2920,747	2902,207	2478,041	863,037	809,912
EE	1312,562	2857,737	1324,692	2500,608	429,554	968,104	1568,908	959,769	3004,796	380,592	1997,606	890,164	693,070	940,177	321,475	2927,339	2536,959
EF	1465,714	3450,301	2106,235	3193,727	703,957	1765,124	2135,938	1510,172	3594,419	511,825	2644,606	1608,494	568,940	1492,566	907,379	3710,119	3322,284
EG	3752,861	609,244	1549,534	253,071	3145,553	1919,107	1374,290	1947,020	669,483	3131,365	812,543	2620,659	2959,791	3030,154	2541,301	1023,875	993,793
EH	2202,679	2208,524	640,450	1553,202	1925,079	784,949	1576,125	1560,335	2331,424	2026,001	1457,568	1078,782	2264,051	1468,285	1696,042	1410,503	1042,348
EI	2905,304	1531,431	822,900	839,610	2469,384	1186,670	1350,756	1641,760	1637,679	2517,472	973,559	1756,007	2565,730	2165,510	2036,695	781,852	396,107
EJ	1429,809	2683,752	1148,569	2318,879	594,506	800,171	1404,108	809,966	2830,877	562,738	1819,650	838,403	760,995	968,911	250,060	2752,753	2363,110
EK	3403,342	749,995	1414,001	897,367	2618,799	1656,960	622,391	1243,344	885,084	2539,496	504,061	2397,935	2186,109	2761,968	1907,822	1905,884	1698,459
EL	2263,636	1796,455	68,308	1242,550	1730,346	448,264	961,426	984,787	1934,520	1766,237	948,300	1132,970	1828,587	1540,657	1286,634	1537,172	1149,067
EM	3097,918	1566,342	1062,106	871,236	2697,469	1419,231	1561,808	1881,534	1655,989	2751,791	1135,051	1953,240	2809,182	2358,294	2278,939	544,541	153,951
EN	1219,868	2889,260	1048,479	2335,343	1051,834	744,834	1842,653	1461,398	3029,501	1213,415	2020,070	116,400	1684,964	480,751	1174,583	2394,727	2016,659
EO	1665,418	2435,701	974,996	2087,633	844,538	670,320	1153,610	568,138	2582,785	795,277	1576,068	934,824	813,050	1146,112	249,002	2574,093	2188,384
EP	77,473	3987,220	2187,201	3487,927	974,690	1827,044	2796,735	2250,203	4132,039	1178,461	3103,231	1124,210	1870,695	712,065	1662,048	3575,680	3201,959
EQ	408,065	3590,558	1819,162	3115,385	593,897	1447,542	2381,413	1828,837	3736,249	811,380	2706,526	803,560	1497,179	429,840	1244,863	3279,530	2896,638
ER	2229,893	1890,097	181,604	1301,519	1757,503	479,033	1113,396	1121,617	2024,600	1811,630	1065,188	1084,551	1924,808	1496,566	1371,022	1485,564	1093,955
ES	1749,617	2719,557	1488,012	2479,170	817,736	1204,435	1405,167	781,216	2863,784	641,898	1919,980	1351,204	279,630	1435,220	295,237	3066,429	2687,138
ET	2134,200	2254,851	1260,908	2066,847	1227,212	1085,356	948,103	367,267	2397,547	1087,589	1489,126	1492,655	668,283	1690,380	500,793	2751,138	2388,701

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KOTA	DP	DQ	DR	DS	DT	DU	DV	DX	DY	DZ	EA	EB	EC	ED	EE	EF	EG
A	1974,389	2125,857	709,087	2146,990	1471,180	1146,917	2327,233	2413,260	1546,108	77,524	419,687	2139,151	729,452	1000,246	1676,607	2409,464	1098,692
B	1856,930	1170,708	1574,327	1814,107	2631,639	1129,956	681,224	2027,661	2800,601	1626,105	1616,604	1447,503	1230,061	2585,214	1160,206	1843,651	2727,537
C	503,605	604,053	2651,274	253,931	3675,668	1123,855	1630,089	330,194	3779,779	2238,455	1875,299	270,283	2356,406	3228,434	644,517	161,447	3288,281
D	3077,124	3131,982	828,697	3243,039	381,072	2210,964	3083,950	3510,912	446,857	1102,220	1519,258	3195,469	1173,798	543,203	2727,572	3492,492	715,967
E	1505,327	556,594	2643,048	1306,998	3724,329	1474,538	721,766	1375,678	3873,983	2477,579	2268,447	849,143	2297,427	3512,047	1034,242	1118,494	3621,240
F	2313,554	2520,065	785,875	2502,224	1203,170	1533,039	2705,665	2764,643	1238,474	444,830	750,726	2522,494	960,042	609,141	2063,675	2777,606	701,924
G	582,220	884,413	1904,339	706,060	2890,528	378,978	1651,096	975,304	2984,713	1437,812	1064,004	751,061	1644,716	2417,234	390,466	965,298	2477,762
H	2285,996	2281,320	288,062	2430,358	1174,704	1378,295	2292,670	2699,874	1292,395	371,615	805,986	2352,396	436,976	968,310	1884,712	2662,685	1120,722
I	625,080	866,615	1868,187	737,222	2861,510	336,109	1610,156	1006,833	2958,295	1412,731	1048,051	752,521	1604,302	2400,241	366,154	985,483	2464,177
J	2423,797	2776,015	1215,528	2639,921	1388,456	1771,619	3070,371	2889,702	1359,169	817,906	956,454	2731,143	1393,300	576,147	2292,503	2940,060	541,133
K	1835,064	2377,441	1595,264	2075,047	2070,650	1415,311	2896,180	2303,063	2064,677	974,589	750,150	2257,936	1623,382	1294,898	1873,335	2396,143	1256,171
L	428,515	998,618	2056,994	616,042	3010,103	572,102	1839,579	873,499	3092,949	1547,823	1142,430	796,264	1816,047	2487,165	546,385	919,959	2532,945
M	1914,467	950,985	2535,912	1746,840	3600,384	1651,470	315,163	1849,375	3767,030	2497,003	2372,929	1282,823	2188,613	3504,240	1330,085	1597,962	3633,249
N	723,896	499,917	2730,206	474,782	3774,676	1233,986	1500,133	485,161	3887,784	2358,520	2017,953	250,731	2421,038	3366,530	715,819	228,022	3435,174
O	1836,013	2419,899	1708,319	2081,356	2167,383	1474,810	2970,457	2301,634	2155,292	1086,698	846,551	2285,940	1734,366	1378,243	1915,655	2406,277	1328,345
P	3149,504	3385,213	1315,019	3350,741	829,344	2400,104	3501,608	3608,794	711,961	1296,039	1607,071	3388,626	1623,547	259,193	2930,740	3635,154	232,665
Q	1849,017	2432,378	1709,619	2094,389	2162,118	1486,418	2981,086	2314,607	2148,921	1089,817	854,256	2298,808	1738,242	1370,905	1928,119	2419,316	1319,655
R	2915,779	3254,601	1436,243	3133,163	1202,509	2252,027	3487,582	3382,262	1104,994	1223,647	1437,101	3220,179	1693,383	390,287	2777,001	3433,302	213,565
S	2776,870	2917,725	798,534	2957,559	747,302	1956,697	2983,702	3222,459	765,722	832,145	1210,200	2949,035	1100,313	303,384	2484,046	3223,112	482,713
T	570,695	1108,313	1936,579	769,025	2871,920	509,259	1891,461	1024,262	2950,808	1408,923	995,981	932,549	1709,863	2336,675	627,348	1073,137	2380,607
U	2168,103	2650,691	1504,750	2402,440	1807,696	1661,147	3083,356	2637,006	1778,909	962,634	898,137	2557,189	1607,423	991,817	2150,341	2718,619	929,349
V	3217,058	3455,387	1374,747	3419,159	835,259	2470,167	3568,548	3676,845	703,018	1366,082	1676,440	3458,531	1686,844	329,342	3000,800	3704,248	288,804
W	1296,034	1813,218	1565,377	1524,987	2308,036	880,305	2397,353	1764,660	2349,113	924,373	502,064	1689,133	1468,947	1653,646	1308,910	1839,601	1667,815
X	2856,362	3247,244	1552,909	3081,587	1383,175	2242,754	3533,221	3324,803	1286,014	1269,381	1428,648	3194,040	1787,514	558,541	2760,744	3388,898	391,155
Y	1114,964	935,855	1475,506	1172,819	2525,849	236,890	1314,243	1434,394	2647,251	1157,368	927,337	1004,490	1172,674	2193,249	542,808	1344,815	2290,504
Z	3478,853	3483,795	1122,396	3637,250	41,437	2592,977	3349,043	3906,088	183,848	1503,059	1928,917	3567,702	1467,972	872,193	3100,278	3877,342	1010,680
AA	420,469	1119,616	2115,691	648,340	3041,363	676,043	1975,717	887,229	3115,949	1579,016	1157,810	895,177	1890,419	2485,925	680,507	970,316	2521,917
AB	1616,020	1710,226	889,297	1767,885	1828,622	738,488	1961,649	2036,757	1924,805	386,621	281,704	1730,403	728,402	1415,863	1265,368	2014,899	1511,486
AC	533,105	446,861	2452,945	352,800	3487,333	939,381	1464,001	527,159	3596,558	2062,305	1717,163	126,063	2152,571	3066,575	437,677	369,112	3134,288
AD	963,769	21,633	2393,024	791,154	3463,162	1021,243	1038,024	920,426	3593,106	2111,173	1836,654	329,134	2064,447	3144,820	517,349	690,592	3235,386
AE	2619,362	2461,006	177,629	2733,336	1039,255	1670,129	2271,088	3001,518	1211,575	827,218	1240,054	2587,778	418,626	1192,307	2130,326	2931,196	1371,082
AF	1672,238	2180,597	1497,938	1905,657	2076,764	1213,827	2696,030	2141,219	2090,658	856,015	570,307	2069,520	1489,040	1348,518	1676,968	2222,203	1336,384
AG	1933,240	966,719	2633,385	1755,074	3699,207	1717,120	414,484	1843,495	3865,187	2585,041	2451,354	1291,112	2285,814	3595,881	1372,573	1588,598	3723,299
AH	410,005	621,619	2219,168	399,005	3231,954	682,246	1551,300	660,462	3333,353	1790,500	1428,930	402,573	1936,098	2781,465	291,431	606,318	2844,117
AI	510,941	1294,853	2161,405	762,980	3046,227	800,068	2151,116	975,461	3109,638	1592,208	1156,707	1058,419	1959,000	2450,284	858,175	1093,549	2473,569
AJ	2633,671	3098,246	1649,539	2868,405	1650,436	2099,906	3470,121	3102,494	1571,776	1245,287	1304,946	3016,750	1834,425	802,100	2601,450	3184,216	665,256
AK	1556,555	599,241	2619,990	1363,417	3700,617	1487,232	656,775	1438,656	3852,670	2471,237	2273,592	902,931	2273,331	3503,730	1063,227	1182,388	3615,779
AL	2817,242	3234,893	1610,124	3046,256	1477,222	2231,212	3548,693	3286,137	1381,804	1291,326	1420,909	3171,873	1832,075	646,480	2744,413	3356,952	484,175
AM	1185,118	247,073	2275,227	1036,356	3354,658	1037,197	781,476	1180,019	3495,232	2060,631	1834,586	583,104	1936,188	3097,420	616,231	951,766	3200,766
AN	1785,913	1269,709	1262,000	1790,742	2333,416	936,812	1004,117	2029,829	2495,348	1290,591	1304,522	1490,537	914,158	2251,687	1117,678	1880,239	2392,258
AO	893,537	813,748	3069,798	637,377	4108,487	1560,239	1754,989	480,817	4217,768	2681,406	2324,899	593,372	2763,156	3677,631	1052,842	309,364	3738,809
AP	2417,967	2316,767	60,811	2542,512	1132,166	1479,211	2216,921	2811,687	1281,211	599,733	1011,536	2421,653	306,193	1111,731	1958,540	2753,328	1280,018
AQ	379,684	764,980	2689,524	122,053	3693,801	1150,695	1790,788	196,881	3789,746	2242,888	1859,842	426,517	2407,424	3211,229	721,435	211,625	3261,878
AR	1607,734	923,719	1659,017	1558,583	2735,391	940,592	660,982	1771,098	2893,792	1608,575	1529,707	1192,272	1310,694	2609,433	909,766	1588,503	2739,829
AS	1465,984	2029,860	1629,089	1705,075	2276,506	1100,404	2614,069	1934,397	2298,544	979,065	610,797	1895,491	1577,016	1566,169	1525,847	2026,280	1557,722
AT	411,539	593,196	2523,079	205,448	3542,033	990,745	1612,371	393,997	3644,405	2101,712	1736,314	259,979	2232,818	3089,524	530,615	295,081	3149,037
AU	1783,536	2130,371	1136,631	1991,224	1775,352	1127,172	2512,943	2245,481	1811,856	496,681	329,607	2075,312	1139,496	1126,116	1640,845	2286,506	1158,700
AV	1005,028	448,759	2810,231	760,978	3874,539	1378,752	1323,306	755,008	3999,146	2495,184	2187,064	415,008	2485,707	3520,366	848,411	495,564	3600,617
AW	2359,516	2566,445	795,291	2548,809	1166,503	1579,973	2745,600	2811,056	1197,373	488,109	797,386	2569,533	984,329	562,161	2110,604	2824,548	657,180
AX	1465,270	762,921	1758,048	1405,276	2838,683	869,807	665,217	1613,165	2991,166	1651,670	1529,016	1031,415	1411,410	2669,832	768,032	1427,597	2792,704
AY	965,001	1026,575	1529,614	1073,268	2537,962	23,707	1547,963	1342,465	2642,574	1107,560	794,008	1010,464	1262,623	2122,904	550,173	1298,276	2202,391
AZ	1274,624	380,316	2663,845	1063,350	3743,126	1373,755	940,666	1118,665	3882,911	2435,534	2185,686	616,731	2324,645	3472,375	884,526	860,517	3570,574
BA	2926,879	3135,353	1078,406	3121,689	802,901	2155,119	3247,069	3382,286	746,877	1044,058	1371,996	3145,744	1376,477	47,381	2685,572	3400,498	223,376
BB	1889,155	1354,590	1243,191	1891,764	2304,043	1037,123	1012,373	2129,163	2471,073	1324,073	1368,446	1584,602	898,780	2260,517	1218,831	1975,920	2406,240
BC	344,819	786,304	2165,745	441,969	3154,527	630,765	1684,721	711,153	3247,712	1700,346	1317,853	566,615	1899,645	2670,481	389,173	714,071	2725,298
BD	2706,622	2671,292	328,466	2849,774	771,101	1794,357	2583,990	3119,357	912,152	762,871	1205,704	2759,660	675,167	831,178	2293,131	3077,718	1012,593
BE	646,302	966,240	1832,940	788,602	2808,808	331,472	1695,891	1056,788	2900,349	1352,823	973,271	843,342	1582,111	2326,578	465,800	1055,540	2385,822
BF	1374,061	1407,630	1105,000	1502,886	2103,247	448,684	1711,286	1772,491	2209,600	686,706	474,371	1434,772	865,994	1718,460	967,856	1732,954	1812,636
BG	2194,929	2725,690	1655,591	2436,000	1929,195	1748,155	3195,590	2662,400	1889,928	1108,385	1013,178	2615,616	1755,646	1098,517	2222,642	2757,405	1016,619
BH	953,184	1550,448	1788,754	1187,674	2611,495	731,062	2245,388	1422,157	2664,842	1179,303	736,471	1388,469	1634,910	1989,825	1053,658	1507,764	2010,235
BI	1142,368	1082,664	1376,510	1234,077	2407,608	184,253	1468,466	1501,397	2521,654	1011,053	763,204	1119,740	1094,242	2043,464	651,835	1436,881	2136,113
BJ	803,264	1421,616	1869,339	1036,625	2727,144	672,617	2158,594	1272,118	2787,275	1280,033	840,101	1246,002	1691,890	2126,102	932,065	1356,997	2151,740
BK	2158,245	2387,047	831,535	2349,246	1354,474	1393,178	2615,314	2610,804	1394,594	353,293	598,930	2379,183	949,510	754,777	1923,407	2627,622	830,319
BL	1709,246	1191,898	1309,614	1711,309	2385,652	874,142	974,598	1949,720	2544,308	1300,562	1287,028	1410,250	961,250	2278,450	1038,307	1799,806	2415,023
BM	3224,045	3274,726	953,411	3390,216	252,248	2357,462	3207,830	3658,087	300,270	1249,365	1665,175	3341,138	1301,055	609,487	2873,210	3639,342	765,154
BN	3259,965	3340,838	1044,192	3432,528	303,949	2409,814	3299,666	3699,353	268,734	1292,147	1695,473	3397,572	1389,789	549,401	2929,974	3688,077	689,406
BO	1710,134	1629,916	779,916	1824,435	1819,671	760,671	1734,767	2093,204	1943,515	531,252	582,477	1708,710	521,418	1546,108	1242,807	2033,834	1667,450
BP	1149,687	580,298	1798,762	1105,957	2874,646	618,501	922,658	1329,322	3011,361	1574,034	1371,483	775,934	1465,705	2610,226	451,602	1167,125	2716,359
BQ	1432,837	1040,224	1342,719	1456,715	2421,871	577,260	1105,206	1706,055	2563,913	1185,852	1082,050	1203,765	1006,350	2207,942	788,280	1579,433	2328,056
BR	3314,482	3505,102	1334,575	3508,537	666,108	2533,429	3564,653	3769,545	520,808	1413,932	1757,925	3525,408	1663,166	413,489	3063,123	3785,523	443,600
BS	869,373	731,107	2997,375	610,044	4039,661	1494,478	1676,568	487,899	4150,919	2617,569	2267,109	518,276	2688,585	3618,762	981,675	278,298	3682,745
BT	2243,248	2675,624	1383,527	2470,726	1656,039	1676,285	3058,325	2711,932	1628,804	878,167	883,394	2600,623	1509,030	843,842	2180,169	2781,129	790,866
BU	1397,426	816,947	1615,218	1368,690	2696,612	711,756	841,537	1595,527	2843,843	1477,746	1349,259	1040,068	1272,105	2500,791	703,855	1432,860	2620,673
BV	2160,856	2666,258	1568,771	2398,335	1868,938	1682,353	3118,530	2629,344	1837,037	1019,478	934,050	2564,676	1666,664	1048,067	2164,388	2717,012	978,726
BW	2602,433	2700,255	584,098	2772,768	851,826	1753,169	2749,652	3039,790	918,062	632,380	1042,166	2743,410	870,178	521,875	2276,617	3028,910	688,620

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KOTA	DP	DQ	DR	DS	DT	DU	DV	DX	DY	DZ	EA	EB	EC	ED	EE	EF	EG
BX	2006,738	1041,204	2616,485	1833,855	3676,557	1754,138	371,049	1928,117	3845,352	2591,057	2472,702	1369,609	2270,028	3594,443	1430,418	1674,319	3725,184
BY	959,576	1434,462	1648,129	1170,228	2518,945	552,661	2076,026	1421,724	2585,174	1064,937	629,235	1307,794	1472,568	1945,154	930,768	1474,566	1982,813
BZ	1275,007	361,419	2626,787	1069,030	3706,393	1346,956	907,298	1133,612	3846,830	2403,152	2157,467	616,718	2287,127	3440,106	864,001	876,845	3539,388
CA	2847,653	3124,058	1212,982	3054,097	1022,752	2128,615	3306,093	3309,577	952,962	1055,773	1322,628	3110,440	1481,393	176,045	2658,089	3344,237	94,921
CB	2647,125	2517,154	170,801	2768,108	962,998	1704,350	2349,741	3036,956	1131,290	808,743	1233,795	2635,245	475,299	1108,873	2174,940	2973,212	1288,600
CC	1144,388	918,131	1476,705	1192,289	2533,514	287,501	1265,221	1451,277	2658,122	1180,356	965,290	1004,077	1167,367	2217,190	548,800	1353,018	2317,537
CD	1825,627	927,994	2138,067	1705,376	3200,723	1375,649	150,748	1860,688	3368,018	2125,900	2036,892	1262,072	1791,380	3120,352	1165,148	1631,295	3253,945
CE	354,645	762,971	2167,299	437,385	3159,909	630,280	1663,265	706,969	3254,377	1707,353	1328,122	545,390	1898,629	2681,143	369,314	701,879	2737,289
CF	2533,318	2908,328	1327,844	2754,028	1402,481	1903,840	3210,406	3000,699	1352,727	956,561	1089,956	2857,070	1521,003	560,879	2422,166	3057,957	481,976
CG	1053,427	429,471	1944,169	984,322	3017,321	674,143	940,070	1195,918	3150,966	1694,050	1463,564	628,797	1613,892	2731,031	366,749	1022,848	2831,664
CH	497,855	1183,720	2066,915	729,176	2979,205	664,680	2016,289	965,900	3050,636	1518,370	1092,206	969,596	1850,916	2413,294	729,636	1051,468	2446,823
CI	819,825	941,816	1675,123	928,009	2677,623	141,014	1560,611	1197,419	2779,005	1238,259	899,210	889,858	1408,848	2242,546	445,180	1160,338	2315,308
CJ	3098,888	3344,877	1303,734	3301,640	869,805	2357,057	3475,368	3558,991	760,443	1258,459	1560,536	3344,287	1605,770	223,600	2887,615	3587,636	174,657
CK	2447,475	2273,284	181,135	2555,299	1215,796	1493,626	2100,060	2822,833	1381,145	738,068	1119,608	2402,170	231,866	1280,958	1946,192	2748,175	1452,502
CL	2512,738	2760,320	954,143	2711,291	1117,942	1767,125	2953,723	2970,238	1113,677	694,073	967,478	2752,220	1175,151	391,164	2297,272	2995,080	457,018
CM	1485,979	1965,753	1455,480	1712,141	2141,082	1000,162	2491,928	1954,235	2174,382	805,777	432,759	1859,478	1398,003	1466,932	1462,360	2023,831	1477,323
CN	2261,115	2342,978	478,132	2423,824	1177,762	1396,070	2432,658	2691,871	1265,711	285,272	720,620	2385,407	632,210	821,937	1918,400	2674,581	958,088
CO	1594,571	1715,980	923,598	1751,882	1846,007	734,319	1991,136	2020,203	1937,820	392,674	235,372	1726,785	772,539	1411,664	1263,666	2004,216	1502,133
CP	3205,327	3480,919	1464,604	3413,839	968,827	2487,888	3630,419	3668,354	833,406	1401,725	1683,623	3471,139	1765,784	377,922	3017,793	3705,107	266,332
CQ	1975,164	1033,257	2367,960	1830,138	3423,004	1602,314	113,018	1958,162	3593,715	2370,671	2280,088	1371,825	2022,930	3361,816	1345,705	1715,010	3496,887
CR	1252,224	314,231	2558,633	1055,555	3638,249	1286,122	871,620	1136,201	3778,789	2337,021	2094,939	596,178	2219,014	3374,015	811,252	882,879	3474,111
CS	2777,115	2808,327	527,296	2935,407	661,662	1894,975	2773,302	3204,127	765,916	802,402	1234,557	2875,936	863,264	620,996	2408,009	3178,499	804,270
CT	1390,862	1868,665	1473,486	1614,937	2200,878	909,803	2411,226	1858,608	2241,232	828,206	420,459	1760,165	1392,314	1547,212	1364,927	1925,497	1564,126
CU	2887,838	3386,512	1909,202	3128,207	1772,102	2391,667	3769,828	3355,327	1662,780	1539,703	1602,389	3295,108	2114,036	955,877	2887,418	3448,392	785,831
CV	946,620	664,669	2978,916	687,255	4030,594	1497,600	1574,871	596,729	4146,905	2622,319	2285,683	506,004	2663,589	3633,348	973,703	363,890	3702,981
CW	1064,592	120,619	2309,492	909,621	3384,896	999,202	909,376	1052,398	3519,953	2059,440	1808,873	455,089	1975,656	3095,958	535,306	826,464	3193,002
CX	2999,083	3475,219	1910,169	3237,008	1698,679	2476,155	3829,566	3467,295	1578,586	1582,145	1677,106	3392,892	2133,028	907,899	2978,581	3555,095	729,277
CY	1838,261	874,954	2693,572	1648,819	3766,259	1693,697	530,065	1722,985	3927,900	2610,107	2451,800	1187,283	2345,232	3630,833	1312,562	1465,714	3752,861
CZ	2901,183	3351,961	1765,432	3135,312	1594,113	2350,452	3689,651	3370,043	1485,592	1438,208	1546,080	3277,939	1986,590	781,957	2857,737	3450,301	609,244
DA	1755,777	1728,575	722,974	1883,924	1734,343	823,729	1854,914	2153,444	1850,893	411,206	503,775	1792,341	511,941	1430,768	1324,692	2106,235	1549,534
DB	2704,487	2964,327	1080,907	2906,935	1035,986	1970,641	3146,179	3164,281	997,628	893,847	1168,247	2954,668	1334,541	217,111	2500,608	3193,727	253,071
DC	918,101	75,000	2312,293	765,101	3380,217	930,798	1051,484	918,610	3508,601	2022,567	1746,226	318,277	1986,059	3055,644	429,554	703,957	3145,553
DD	1475,870	1349,984	1049,132	1570,350	2099,272	515,097	1524,436	1837,208	2223,868	774,290	675,173	1431,980	757,980	1807,112	968,104	1765,124	1919,107
DE	1596,923	2071,560	1428,135	1823,998	2065,255	1097,623	2575,310	2065,390	2091,002	779,687	458,154	1969,921	1397,739	1370,488	1568,908	2135,938	1374,290
DF	995,253	1463,836	1622,543	1206,115	2486,726	567,733	2092,930	1457,590	2551,837	1034,552	597,210	1341,072	1452,374	1909,775	959,769	1510,172	1947,020
DG	3043,002	3499,100	1876,680	3278,452	1627,285	2497,544	3831,466	3511,693	1503,008	1575,494	1692,587	3424,359	2109,939	851,156	3004,796	3594,419	669,483
DH	707,956	259,237	2378,293	544,615	3430,354	911,058	1271,961	706,824	3548,541	2032,105	1717,056	116,211	2065,210	3053,147	380,592	511,825	3131,365
DI	2133,363	2483,496	1134,004	2346,331	1540,495	1479,035	2812,980	2597,926	1545,411	609,105	666,083	2434,739	1242,223	804,915	1997,606	2644,606	812,543
DJ	1583,491	968,773	1549,248	1553,676	2627,828	857,914	779,642	1777,570	2783,866	1489,037	1415,403	1213,593	1201,313	2490,883	890,164	1608,494	2620,659
DK	22,136	951,262	2489,299	237,716	3452,277	968,133	1936,757	449,177	3535,091	1990,152	1582,242	640,488	2234,784	2920,747	693,070	568,940	2959,791
DL	1620,863	790,537	1953,938	1524,900	3028,534	1118,278	408,796	1704,547	3188,535	1894,010	1785,791	1105,485	1605,571	2902,207	940,177	1492,566	3030,154
DM	563,214	811,815	1941,262	662,282	2938,348	404,468	1596,316	931,841	3035,848	1490,592	1125,592	680,068	1673,278	2478,041	321,475	907,379	2541,301
DN	3325,616	3302,082	934,248	3476,906	159,656	2425,945	3153,162	3746,248	356,793	1355,284	1789,699	3393,945	1277,518	863,037	2927,339	3710,119	1023,875
DO	2948,937	2910,560	546,628	3093,901	535,014	2038,951	2787,978	3363,459	693,046	993,358	1434,794	3003,180	893,430	809,912	2536,959	3322,284	993,793
DP	0,000	966,541	2478,752	259,833	3438,598	960,810	1948,267	468,984	3520,494	1976,171	1566,672	658,317	2226,264	2903,749	698,092	591,074	2941,953
DQ	966,541	0,000	2371,958	798,634	3442,392	1004,503	1026,305	933,135	3572,630	2092,108	1819,699	338,711	2043,152	3126,088	504,335	705,845	3217,224
DR	2478,752	2371,958	0,000	2602,882	1081,467	1539,465	2255,532	2872,015	1234,793	650,035	1067,463	2479,765	348,368	1099,831	2017,183	2812,721	1271,727
DS	259,833	798,634	2602,882	0,000	3596,491	1063,769	1816,157	269,616	3688,922	2141,337	1751,542	464,250	2328,273	3100,937	673,071	331,879	3148,836
DT	3438,598	3442,392	1081,467	3596,491	0,000	2551,813	3310,001	3865,370	204,980	1462,997	1889,711	3526,323	1427,286	850,165	3058,915	3836,201	993,330
DU	960,810	1004,503	1539,465	1063,769	2551,813	0,000	1525,692	1332,649	2657,696	1124,747	815,596	992,496	1268,931	2142,111	530,637	1284,463	2222,605
DV	1948,267	1026,305	2255,532	1816,157	3310,001	1525,692	0,000	1958,113	3480,835	2265,883	2185,262	1364,276	1910,797	3252,935	1300,156	1721,119	3389,205
DW	2345,651	2871,804	1701,308	2587,003	1885,690	1889,810	3323,466	2812,949	1831,365	1191,169	1138,257	2765,205	1827,766	1041,121	2369,338	2908,455	938,167
DX	468,984	933,135	2872,015	269,616	3865,370	1332,649	1958,113	0,000	3956,517	2408,894	2014,462	600,354	2595,172	3360,608	917,829	260,163	3404,125
DY	3520,494	3572,630	1234,793	3688,922	204,980	2657,696	3480,835	3956,517	0,000	1547,632	1958,480	3641,277	1583,099	791,884	3173,343	3939,343	906,529
DZ	1976,171	2092,108	650,035	2141,337	1462,997	1124,747	2265,883	2408,894	1547,632	0,000	442,833	2116,938	653,331	1037,000	1651,969	2396,774	1144,817
EA	1566,672	1819,699	1067,463	1751,542	1889,711	815,596	2185,262	2014,462	1958,480	442,833	0,000	1788,184	971,916	1353,311	1340,135	2028,811	1417,340
EB	658,317	338,711	2479,765	464,250	3526,323	992,496	1364,276	600,354	3641,277	2116,938	1788,184	0,000	2170,346	3131,520	467,937	396,232	3205,014
EC	2226,264	2043,152	348,368	2328,273	1427,286	1268,931	1910,797	2595,172	1583,099	653,331	971,916	2170,346	0,000	1391,286	1714,912	2517,409	1551,072
ED	2903,749	3126,088	1099,831	3100,937	850,165	2142,111	3252,935	3360,608	791,884	1037,000	1353,311	3131,520	1391,286	0,000	2672,734	3382,114	184,548
EE	698,092	504,335	2017,183	673,071	3058,915	530,637	1300,156	917,829	3173,343	1651,969	1340,135	467,937	1714,912	2672,734	0,000	804,329	2752,255
EF	591,074	705,845	2812,721	331,879	3836,201	1284,463	1721,119	260,163	3939,343	2396,774	2028,811	396,232	2517,409	3382,114	804,329	0,000	3439,151
EG	2941,953	3217,224	1271,727	3148,836	993,330	2222,605	3389,205	3404,125	906,529	1144,817	1417,340	3205,014	1551,072	184,548	2752,255	3439,151	0,000
EH	2257,571	1976,632	522,245	2336,010	1565,966	1297,722	1745,775	2598,383	1735,073	859,424	1133,821	2135,724	222,072	1602,136	1695,644	2499,344	1765,532
EI	2553,379	2532,517	251,645	2697,908	912,901	1644,292	2482,035	2967,448	1041,849	612,295	1054,888	2613,788	573,276	848,661	2146,645	2928,312	1022,002
EJ	760,876	669,341	1848,321	791,804	2882,776	348,540	1354,848	1051,107	2994,862	1470,328	1160,035	647,504	1553,822	2490,593	182,165	964,959	2570,665
EK	2165,451	2693,798	1638,049	2406,025	1929,616	1716,234	3164,630	2633,112	1893,712	1084,606	982,805	2584,195	1733,202	1103,092	2190,783	2727,087	1026,090
EL	1817,702	1796,426	661,926	1948,892	1666,389	890,081	1907,888	2218,472	1782,586	359,561	513,639	1860,482	472,705	1368,386	1392,783	2173,279	1490,109
EM	2796,851	2759,218	404,358	2940,472	683,670	1885,055	2657,036	3210,051	830,626	848,500	1291,115	2849,618	752,724	818,010	2383,253	3168,335	1001,879
EN	1687,580	1084,277	1473,718	1664,722	2547,807	923,483	810,950	1891,212	2708,074	1458,244	1419,752	1329,611	1125,400	2443,064	997,926	1724,260	2578,282
EO	806,089	919,462	1693,116	909,774	2697,993	155,666	1546,851	1179,021	2800,026	1259,959	922,155	867,067	1424,588	2265,155	422,298	1139,365	2338,167
EP	1886,416	920,436	2661,083	1702,930	3730,493	1703,890	467,424	1784,805	3894,389	2595,666	2450,047	1239,776	2313,005	3611,575	1341,641	1528,733	3736,412
EQ	1511,001	555,209	2350,465	1353,772	3430,458	1285,808	489,612	1477,431	3584,046	2221,584	2047,383	892,853	2003,279	3249,794	926,292	1235,441	3366,247
ER	1915,172	1820,321	573,027	2031,638	1622,902	967,869	1847,120	2300,443	1753,414	458,469	667,174	1910,974	330,926	1407,250	1446,414	2239,925	1542,356
ES	271,450	880,366	2210,806	427,766	3182,326	689,400	1790,478	689,238	3269,606	1722,473	1325,341	638,047	1955,194	2673,399	495,069	730,791	2721,247
ET	648,820	1297,790	1965,481	881,384	2852,982	650,591	2082,202	1117,430	2919,103	1396,918	963,299	1104,348	1767,195	2270,390	821,669	1202,599	2300,278

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KOTA	EH	EI	EK	EL	EM	EN	EO	EP	EQ	ER	ES	ET
A	936,654	648,531	1007,182	426,439	878,053	1521,665	1277,047	2649,997	2271,419	533,175	1724,970	1382,167
B	1066,004	1802,106	2596,402	1266,848	1975,895	209,747	1213,763	1104,940	876,102	1187,941	1629,420	1770,476
C	2340,100	2767,354	2595,187	2012,223	3007,217	1581,010	979,809	1477,271	1152,611	2078,480	596,360	1075,372
D	1346,739	611,121	1570,786	1338,484	434,232	2296,566	2353,170	3484,829	3161,654	1316,372	2824,674	2482,003
E	2182,559	2836,383	3189,919	2147,493	3044,842	1197,879	1421,352	411,428	309,958	2136,681	1436,714	1847,692
F	1182,027	599,771	872,351	798,159	752,787	1895,913	1656,402	3040,345	2665,897	870,480	2075,742	1692,792
G	1676,616	1992,495	1835,268	1246,315	2235,323	1199,427	225,743	1728,171	1309,712	1336,794	310,788	436,371
H	657,754	267,726	1360,168	491,929	511,004	1486,826	1526,254	2668,392	2327,001	469,233	2023,487	1737,903
I	1632,568	1960,847	1840,659	1212,033	2203,303	1149,596	181,011	1696,732	1277,063	1299,066	353,927	473,271
J	1614,856	1009,137	541,502	1175,491	1113,584	2268,477	1871,406	3376,048	2984,766	1272,404	2214,246	1777,322
K	1818,263	1472,541	331,014	1222,497	1655,044	2157,639	1463,653	3116,661	2700,468	1368,772	1668,499	1194,060
L	1863,046	2125,994	1813,183	1395,122	2369,470	1415,221	428,841	1882,809	1471,003	1498,665	189,789	308,177
M	2034,420	2755,414	3340,147	2143,904	2939,442	1068,101	1643,814	154,263	407,578	2097,575	1796,170	2145,391
N	2384,827	2862,464	2779,456	2108,413	3098,906	1558,012	1102,037	1300,842	1012,423	2160,953	790,424	1270,832
O	1927,726	1584,259	345,006	1328,279	1764,445	2242,829	1513,052	3178,617	2760,442	1475,820	1683,568	1204,504
P	1828,563	1064,057	1257,751	1624,938	989,532	2692,980	2521,898	3865,481	3506,426	1658,906	2922,994	2511,861
Q	1932,334	1583,829	333,042	1334,093	1762,737	2252,317	1525,197	3190,171	2772,106	1481,273	1696,587	1217,537
R	1912,200	1191,380	894,566	1579,843	1195,732	2677,844	2357,449	3817,466	3436,628	1649,171	2707,610	2268,402
S	1306,767	546,937	1202,383	1130,673	524,818	2177,215	2089,922	3355,760	3005,745	1148,671	2533,303	2163,138
T	1770,967	1995,020	1663,616	1275,351	2238,289	1404,200	391,394	1968,235	1550,735	1386,857	343,372	194,672
U	1819,826	1336,249	135,237	1279,497	1480,913	2310,522	1731,230	3340,289	2931,647	1408,601	1988,145	1521,739
V	1890,274	1124,452	1306,971	1694,216	1040,720	2760,340	2591,752	3933,872	3575,634	1726,906	2991,397	2578,572
W	1618,193	1530,751	895,625	1001,178	1757,795	1712,921	907,650	2581,698	2161,708	1153,219	1109,076	647,244
X	2008,729	1315,010	767,816	1628,912	1342,536	2727,308	2338,842	3846,704	3457,388	1712,227	2659,432	2207,542
Y	1163,990	1612,971	1877,774	865,243	1846,694	686,739	341,797	1530,370	1121,807	906,735	849,852	883,469
Z	1605,483	954,322	1957,111	1707,722	724,997	2587,993	2739,052	3770,269	3471,055	1664,332	3222,832	2892,215
AA	1950,036	2170,124	1758,028	1454,901	2413,137	1543,823	543,399	2012,625	1602,944	1567,333	258,544	233,054
AB	869,097	937,691	1236,023	255,766	1181,154	1174,225	876,112	2258,524	1870,253	405,080	1355,465	1076,413
AC	2130,828	2576,552	2486,939	1821,331	2814,844	1369,082	803,473	1359,356	1001,532	1881,122	519,711	992,676
AD	1998,209	2553,130	2707,681	1816,461	2780,039	1105,398	934,222	922,649	563,724	1840,966	883,652	1305,644
AE	526,972	363,072	1805,539	811,804	411,924	1513,371	1825,167	2692,217	2401,852	704,278	2349,717	2123,158
AF	1673,735	1403,174	515,233	1064,305	1604,484	1963,228	1264,749	2914,822	2498,749	1214,686	1492,005	1025,137
AG	2133,298	2851,624	3414,308	2233,380	3037,129	1163,564	1702,132	71,694	446,723	2189,970	1827,849	2192,124
AH	1938,307	2326,150	2186,658	1572,321	2567,206	1288,506	533,985	1531,547	1135,257	1646,366	258,799	703,466
AI	2035,941	2195,823	1658,422	1507,406	2436,967	1695,581	683,948	2190,649	1781,156	1630,601	421,514	196,431
AJ	2055,892	1432,556	485,874	1597,200	1507,670	2677,288	2180,085	3753,695	3352,329	1703,233	2453,594	1987,668
AK	2153,062	2817,160	3203,466	2137,043	3022,728	1165,379	1440,868	346,347	272,523	2121,359	1479,039	1881,006
AL	2053,937	1376,781	700,406	1650,409	1416,310	2745,892	2322,122	3853,112	3459,671	1740,704	2626,489	2168,838
AM	1846,562	2453,619	2752,576	1741,415	2671,481	903,615	986,471	728,295	326,741	1744,783	1064,133	1437,761
AN	773,336	1481,165	2277,649	931,760	1666,077	216,171	1052,135	1399,173	1108,788	851,630	1534,282	1586,967
AO	2728,448	3197,331	3036,394	2442,285	3435,079	1891,138	1421,466	1485,066	1267,030	2499,251	1039,174	1511,962
AP	495,631	271,693	1606,373	601,122	451,009	1430,003	1632,738	2618,092	2302,857	513,422	2150,066	1905,383
AQ	2406,116	2791,609	2527,005	2039,696	3033,503	1695,537	999,090	1647,792	1317,500	2117,000	541,477	1002,050
AR	1179,513	1869,309	2511,625	1252,458	2063,320	190,801	1003,758	1008,100	702,086	1202,667	1387,144	1562,168
AS	1744,445	1560,640	701,018	1124,422	1774,014	1916,933	1127,865	2802,425	2382,501	1277,940	1299,331	824,061
AT	2223,306	2635,007	2460,270	1880,367	2875,497	1497,387	844,569	1499,723	1148,359	1950,059	463,609	944,172
AU	1333,021	1048,945	664,694	742,590	1259,044	1739,777	1218,762	2779,281	2375,379	885,891	1564,054	1144,993
AV	2424,271	2962,441	2998,901	2217,414	3192,743	1525,735	1265,405	1062,115	836,747	2251,773	1040,481	1514,611
AW	1206,391	598,078	880,184	838,962	737,610	1935,409	1703,468	3082,826	2709,658	907,013	2122,226	1737,606
AX	1297,213	1957,711	2504,142	1302,922	2160,979	329,912	910,996	944,043	593,028	1270,846	1254,486	1464,461
AY	1295,415	1631,432	1692,616	878,022	1872,593	939,915	163,518	1727,514	1309,489	958,833	693,568	638,074
AZ	2232,058	2841,139	3072,475	2123,509	3059,852	1273,500	1296,840	670,667	466,991	2131,313	1233,469	1670,296
BA	1585,137	826,799	1147,186	1369,669	784,873	2438,010	2280,090	3609,808	3251,057	1403,439	2694,402	2295,819
BB	738,196	1471,054	2333,838	968,614	1645,197	276,875	1154,513	1427,310	1160,767	874,643	1637,843	1686,624
BC	1921,044	2256,521	2036,171	1509,210	2499,273	1352,695	475,176	1688,938	1286,089	1596,387	106,042	537,777
BD	847,270	153,639	1567,347	904,478	90,736	1800,062	1943,878	2988,017	2672,195	852,222	2444,035	2152,851
BE	1623,796	1914,258	1744,706	1172,629	2157,449	1202,514	193,933	1792,989	1372,647	1268,967	378,112	387,001
BF	942,215	1197,080	1454,182	446,203	1438,736	957,883	595,961	1980,673	1583,673	543,813	1105,807	908,309
BG	1966,894	1485,582	31,953	1417,800	1626,060	2431,818	1807,916	3439,527	3027,385	1550,118	2029,670	1555,217
BH	1749,805	1791,203	1219,345	1164,148	2027,453	1642,110	700,928	2375,607	1954,166	1305,080	781,315	306,320
BI	1115,221	1495,932	1714,230	741,232	1733,896	796,492	336,430	1694,521	1286,515	803,488	871,271	813,354
BJ	1790,573	1888,505	1370,228	1227,601	2127,791	1595,650	613,463	2265,945	1845,724	1360,991	631,880	155,322
BK	1168,148	682,690	806,916	712,373	865,647	1809,532	1512,214	2935,424	2553,399	807,075	1922,286	1535,814
BL	832,657	1522,564	2265,461	941,015	1713,963	166,090	984,224	1353,715	1048,554	872,700	1459,338	1524,721
BM	1465,131	747,553	1678,258	1482,972	550,841	2426,067	2499,993	3614,007	3296,113	1456,971	2971,801	2627,537
BN	1560,828	826,545	1641,060	1545,199	646,426	2512,669	2549,598	3700,931	3376,908	1528,625	3011,364	2654,253
BO	609,148	906,838	1520,498	177,767	1140,951	928,500	915,240	2068,965	1703,911	207,251	1439,920	1249,989
BP	1396,525	1969,522	2318,812	1252,557	2190,984	561,894	624,468	1089,796	677,676	1258,753	935,013	1164,002
BQ	938,998	1523,161	2064,002	839,639	1738,807	363,670	687,943	1409,860	1042,773	819,976	1176,127	1227,691
BR	1856,268	1090,923	1469,599	1722,419	969,827	2761,818	2661,324	3944,001	3597,171	1738,807	3081,413	2683,056
BS	2651,234	3127,865	2995,384	2373,272	3364,882	1809,161	1358,298	1415,318	1187,983	2427,683	996,306	1473,352
BT	1725,473	1203,897	280,143	1213,495	1339,006	2272,958	1758,322	3333,371	2930,252	1333,388	2050,649	1594,506
BU	1176,769	1805,709	2325,076	1132,519	2015,543	296,184	771,038	1118,966	750,816	1109,000	1167,204	1329,424
BV	1877,908	1401,809	69,584	1330,511	1546,908	2350,801	1747,226	3368,413	2957,855	1462,010	1987,444	1516,961
BW	1080,268	337,617	1217,697	906,680	401,708	1943,442	1891,152	3123,051	2775,695	917,031	2352,179	2004,803

Sumber : www.lwr.uni-heidelberg.de/ groups/ comopt/ software/ TSPLIB95/ XML-TSPLIB/ instances/

KOTA	EH	EI	EK	EL	EM	EN	EO	EP	EQ	ER	ES	ET
BX	2111,019	2838,774	3441,223	2236,784	3019,307	1154,279	1746,571	163,218	505,610	2187,275	1893,519	2246,826
BY	1576,544	1670,876	1276,409	1006,786	1911,127	1454,483	544,656	2227,216	1805,669	1141,655	745,432	334,201
BZ	2193,453	2805,140	3049,213	2089,385	3023,236	1233,782	1273,239	651,952	430,183	2095,763	1225,341	1656,614
CA	1698,011	965,945	955,580	1403,804	966,224	2495,165	2243,659	3649,530	3277,324	1460,307	2626,484	2206,462
CB	604,041	292,851	1754,078	831,573	324,968	1585,596	1858,590	2767,514	2471,468	736,517	2378,659	2136,279
CC	1149,066	1621,087	1921,301	878,570	1852,698	636,899	385,130	1488,090	1082,164	911,586	881,940	931,814
CD	1634,765	2360,039	3015,440	1769,007	2541,167	677,620	1399,178	537,448	428,029	1713,272	1658,180	1937,826
CE	1917,338	2260,529	2053,918	1511,902	2503,088	1338,263	475,042	1665,776	1263,261	1597,174	127,224	559,000
CF	1742,964	1110,903	546,701	1314,718	1193,784	2408,395	2000,402	3515,221	3123,031	1409,636	2329,941	1885,113
CG	1548,814	2109,576	2389,927	1382,864	2333,751	701,430	644,063	1038,611	617,288	1397,554	861,818	1149,108
CH	1918,696	2114,138	1677,007	1408,070	2356,680	1554,846	544,132	2068,217	1655,447	1525,152	336,150	152,329
CI	1438,633	1773,298	1754,126	1021,519	2015,057	1016,808	23,000	1700,826	1279,413	1104,877	548,401	552,302
CJ	1813,453	1052,170	1199,634	1591,866	990,869	2665,819	2477,318	3835,141	3473,182	1630,355	2873,874	2460,092
CK	355,373	432,681	1775,523	656,832	559,647	1332,358	1649,092	2515,059	2218,373	535,023	2176,986	1968,464
CL	1396,504	730,302	829,327	1046,886	816,077	2143,522	1885,155	3289,664	2914,557	1114,136	2283,611	1879,424
CM	1565,890	1396,340	728,616	946,138	1615,166	1773,079	1049,515	2702,648	2285,723	1099,593	1293,062	837,234
CN	854,280	355,844	1160,142	554,032	576,990	1622,124	1535,736	2790,201	2432,892	585,746	2006,431	1680,345
CO	916,014	962,000	1197,483	300,541	1205,173	1208,401	867,417	2281,166	1889,569	451,208	1336,363	1044,359
CP	1974,041	1213,046	1235,115	1740,858	1147,870	2820,280	2604,222	3986,227	3620,853	1784,099	2986,370	2562,190
CQ	1858,673	2593,822	3257,248	2013,396	2769,662	918,896	1614,933	369,900	480,759	1955,314	1830,283	2141,437
CR	2125,840	2737,123	2991,840	2022,159	2955,105	1168,251	1216,069	650,846	386,432	2027,889	1189,354	1612,007
CS	1049,494	291,757	1450,167	1016,673	198,957	1980,003	2039,393	3167,835	2840,023	992,156	2520,679	2196,530
CT	1550,085	1430,766	826,840	930,155	1655,653	1704,618	953,919	2613,531	2195,560	1083,415	1194,817	742,647
CU	2336,053	1681,036	722,433	1893,793	1728,521	2976,534	2467,285	4052,006	3649,465	1996,531	2719,360	2247,022
CV	2616,572	3117,797	3042,635	2365,459	3352,569	1748,838	1368,307	1300,031	1088,482	2412,554	1047,240	1527,635
CW	1898,884	2478,343	2706,149	1752,103	2701,230	983,734	931,125	832,332	447,182	1766,587	956,737	1350,431
CX	2354,953	1674,783	835,374	1939,820	1703,634	3030,816	2557,194	4122,521	3723,730	2035,067	2825,011	2355,644
CY	2202,679	2905,304	3403,342	2263,636	3097,918	1219,868	1665,418	77,473	408,065	2229,893	1749,617	2134,200
CZ	2208,524	1531,431	749,995	1796,455	1566,342	2889,260	2435,701	3987,220	3590,558	1890,097	2719,557	2254,851
DA	640,450	822,900	1414,001	68,308	1062,106	1048,479	974,996	2187,201	1819,162	181,604	1488,012	1260,908
DB	1553,202	839,610	897,367	1242,550	871,236	2335,343	2087,633	3487,927	3115,385	1301,519	2479,170	2066,847
DC	1925,079	2469,384	2618,799	1730,346	2697,469	1051,834	844,538	974,690	593,897	1757,503	817,736	1227,212
DD	784,949	1186,670	1656,960	448,264	1419,231	744,834	670,320	1827,044	1447,542	479,033	1204,435	1085,356
DE	1576,125	1350,756	622,391	961,426	1561,808	1842,653	1153,610	2796,735	2381,413	1113,396	1405,167	948,103
DF	1560,335	1641,760	1243,344	984,787	1881,534	1461,398	568,138	2250,203	1828,837	1121,617	781,216	367,267
DG	2331,424	1637,679	885,084	1934,520	1655,989	3029,501	2582,785	4132,039	3736,249	2024,600	2863,784	2397,547
DH	2026,001	2517,472	2539,496	1766,237	2751,791	1213,415	795,277	1178,461	811,380	1811,630	641,898	1087,589
DI	1457,568	973,559	504,061	948,300	1135,051	2020,070	1576,068	3103,231	2706,526	1065,188	1919,980	1489,126
DJ	1078,782	1756,007	2397,935	1132,970	1953,240	116,400	934,824	1124,210	803,560	1084,551	1351,204	1492,655
DK	2264,051	2565,730	2186,109	1828,587	2809,182	1684,964	813,050	1870,695	1497,179	1924,808	279,630	668,283
DL	1468,285	2165,510	2761,968	1540,657	2358,294	480,751	1146,112	712,065	429,840	1496,566	1435,220	1690,380
DM	1696,042	2036,695	1907,822	1286,634	2278,939	1174,583	249,002	1662,048	1244,863	1371,022	295,237	500,793
DN	1410,503	781,852	1905,884	1537,172	544,541	2394,727	2574,093	3575,680	3279,530	1485,564	3066,429	2751,138
DO	1042,348	396,107	1698,459	1149,067	153,951	2016,659	2188,384	3201,959	2896,638	1093,955	2687,138	2388,701
DP	2257,571	2553,379	2165,451	1817,702	2796,851	1687,580	806,089	1886,416	1511,001	1915,172	271,450	648,820
DQ	1976,632	2532,517	2693,798	1796,426	2759,218	1084,277	919,462	920,436	555,209	1820,321	880,366	1297,790
DR	522,245	251,645	1638,049	661,926	404,358	1473,718	1693,116	2661,083	2350,465	573,027	2210,806	1965,481
DS	2336,010	2697,908	2406,025	1948,892	2940,472	1664,722	909,774	1702,930	1353,772	2031,638	427,766	881,384
DT	1565,966	912,901	1929,616	1666,389	683,670	2547,807	2697,993	3730,493	3430,458	1622,902	3182,326	2852,982
DU	1297,722	1644,292	1716,234	890,081	1885,055	923,483	155,666	1703,890	1285,808	967,869	689,400	650,591
DV	1745,775	2482,035	3164,630	1907,888	2657,036	810,950	1546,851	467,424	489,612	1847,120	1790,478	2082,202
DW	2043,257	1514,934	181,620	1516,261	1635,747	2551,800	1953,201	3575,929	3165,566	1642,226	2180,643	1706,264
DX	2598,383	2967,448	2633,112	2218,472	3210,051	1891,212	1179,021	1784,805	1477,431	2300,443	689,238	1117,430
DY	1735,073	1041,849	1893,712	1782,586	830,626	2708,074	2800,026	3894,389	3584,046	1753,414	3269,606	2919,103
DZ	859,424	612,295	1084,606	359,561	848,500	1458,244	1259,959	2595,666	2221,584	458,469	1722,473	1396,918
EA	1133,821	1054,888	982,805	513,639	1291,115	1419,752	922,155	2450,047	2047,383	667,174	1325,341	963,299
EB	2135,724	2613,788	2584,195	1860,482	2849,618	1329,611	867,067	1239,776	892,853	1910,974	638,047	1104,348
EC	222,072	573,276	1733,202	472,705	752,724	1125,400	1424,588	2313,005	2003,279	330,926	1955,194	1767,195
ED	1602,136	848,661	1103,092	1368,386	818,010	2443,064	2265,155	3611,575	3249,794	1407,250	2673,399	2270,390
EE	1695,644	2146,645	2190,783	1392,783	2383,253	997,926	422,298	1341,641	926,292	1446,414	495,069	821,669
EF	2499,344	2928,312	2727,087	2173,279	3168,335	1724,260	1139,365	1528,733	1235,441	2239,925	730,791	1202,599
EG	1765,532	1022,002	1026,090	1490,109	1001,879	2578,282	2338,167	3736,412	3366,247	1542,356	2721,247	2300,278
EH	0,000	767,143	1943,607	620,356	914,858	989,414	1451,612	2165,296	1880,814	466,840	1986,484	1849,891
EI	767,143	0,000	1471,362	755,352	243,479	1688,295	1793,039	2876,221	2550,533	712,259	2291,159	1999,621
EJ	1547,621	1971,338	2026,495	1216,416	2209,245	935,936	250,567	1451,344	1030,134	1275,951	514,382	728,321
EK	1943,607	1471,362	0,000	1391,104	1615,599	2401,790	1775,985	3407,839	2995,596	1524,379	1999,084	1525,074
EL	620,356	755,352	1391,104	0,000	995,133	1099,175	1040,625	2246,356	1881,517	153,551	1550,732	1312,738
EM	914,858	243,479	1615,599	995,133	0,000	1878,057	2034,612	3065,236	2753,721	941,172	2534,485	2240,929
EN	989,414	1688,295	2401,790	1099,175	1878,057	0,000	1013,284	1188,263	892,861	1036,425	1450,190	1567,556
EO	1451,612	1793,039	1775,985	1040,625	2034,612	1013,284	0,000	1682,560	1261,025	1122,299	534,877	558,616
EP	2165,296	2876,221	3407,839	2246,356	3065,236	1188,263	1682,560	0,000	421,674	2207,616	1788,793	2162,836
EQ	1880,814	2550,533	2995,596	1881,517	2753,721	892,861	1261,025	421,674	0,000	1859,349	1388,600	1745,403
ER	466,840	712,259	1524,379	153,551	941,172	1036,425	1122,299	2207,616	1859,349	0,000	1645,439	1437,916
ES	1986,484	2291,159	1999,084	1550,732	2534,485	1450,190	534,877	1788,793	1388,600	1645,439	0,000	480,684
ET	1849,891	1999,621	1525,074	1312,738	2240,929	1567,556	558,616	2162,836	1745,403	1437,916	480,684	0,000

Sumber : www.lwr.uni-heidelberg.de/ groups/ comopt/ software/ TSPLIB95/ XML-TSPLIB/ instances/

Lampiran 4 : *Source code*

Kelas NewJFrame

```
import java.awt.Color;
import java.io.File;
import java.util.Arrays;
import javax.swing.JFileChooser;
import javax.swing.JList;
import javax.swing.JOptionPane;
import javax.swing.JScrollPane;
import javax.swing.JTable;
import jxl.Sheet;
import jxl.Workbook;
import jxl.read.biff.BiffException;
public class NewJFrame extends javax.swing.JFrame {
        /*** Creates new form NewJFrame*/
        private File namaFileExcel;
        private JList listHeader;
        public static float jarak[][];
        public static int awal,akhir;
        public static boolean terupdate=false;
        int dataTerbaik[];
        public NewJFrame() {
        initComponents();}
        private void jMenuItem1ActionPerformed(java.awt.event.ActionEvent evt) {
        boolean hasil=read(table1,pane1);
                if(hasil)     {
                start1.setEnabled(true);
                 n_kunjungan.setEnabled(true);}
                        }

        private void start1ActionPerformed(java.awt.event.ActionEvent evt) {
                int n_ind=Integer.parseInt(pop_size.getText());
                int Iterasi=Integer.parseInt(iterasi.getText());
                float Alfa=Float.parseFloat(alfa.getText());
                float Beta=Float.parseFloat(beta.getText());
                float Pc=Float.parseFloat(pc.getText());
                float Pm=Float.parseFloat(pm.getText());
                int N_kunjungi=Integer.parseInt(n_kunjungan.getText());
                int domain[]=cariDomain(0,N_kunjungi);
                Semut panggil=new Semut();
                int tabu[][]=new int[n_ind][N_kunjungi];
                float jarak_tabu[]=panggil.data(n_ind, N_kunjungi, Alfa, Beta, Iterasi,tabu,jarak,domain);
    System.out.println("#Semua Ditampilkan");
    tampildi(tabu,jarak_tabu);
    System.out.println("::::::::"+jarak_tabu[0]);
                GA panggil2=new GA();
                 dataTerbaik=new int[N_kunjungi];
                float terbaik=panggil2.GAterbaik(tabu, jarak_tabu, Pc, Pm, Iterasi, dataTerbaik);
                String kata="\n\tHasil Iterasi terakhir adalah\n\n";
        kata+=tampil(tabu,jarak_tabu);
        kata+="\n\n\tDan hasil terbaiknya adalah\n\n";
        kata+=tampil(dataTerbaik,terbaik);
        hasil1.setText(kata);
        Tabe.setSelectedIndex(1);
                String hasil="\n\n\tDan hasil terbaiknya adalah\n\n";
                hasil+=tampil(dataTerbaik,terbaik);
                hasil2.setText(hasil);
                input.setEnabled(true);}
        private String tampil(int data[][], float jarak[]){
                String hasil="";
                for(int i=0; i<data.length; i++){
                hasil+="\n";
                hasil+=tampil(data[i],jarak[i]);}
        return hasil;}
        private String tampil(int data[],float jarak){
                String hasil="\t";
                for(int i=0; i<data.length; i++){
```

```
                hasil+=data[i]+"\t";}
    hasil+="jarak :"+jarak+"\t";
     return hasil;}
 private void updateActionPerformed(java.awt.event.ActionEvent evt) {
                int nkota=table1.getColumnCount();
                int nKunjungi=Integer.parseInt(n_kunjungan.getText());
                int nkotaTambah=nkota-nKunjungi;
                        if(hapus.isSelected()){
                        int kota=Integer.parseInt(input.getText());
                        int randkota=nKunjungi-kota-2;
                        int rand=Integer.parseInt(input1.getText());
                        hasil2.setText(hasil2.getText()+"\n\tkota yg didelete mulai urutan ke :"+rand);
                        rand--;
                        if(rand!=0){
                        int n=nKunjungi-(rand+kota)+1;
                        String kata=hasil2.getText();
                        kata+="\n\tkota yg didelete adalah : \n\t";
for(int i=rand; i<(rand+kota); i++){
kata+=dataTerbaik[i]+"\t";}
kata+="\n\tSedangkan kota yang terupdate adalah \n";
int hasil[]=new int[nKunjungi-kota];
int r=0;
for(int i=0; i<rand; i++)    {
    hasil[r]=dataTerbaik[i];
    r++;
                                        }
System.out.println("panjang domain "+n);
int domain[]=new int[n];
domain[0]=dataTerbaik[rand-1];
akhir=domain[0];
terupdate=true;
awal=dataTerbaik[0];
    int k=1;
                for(int i=(rand+kota); i<dataTerbaik.length; i++)            {
    domain[k]=dataTerbaik[i];
     k++;                                                                    }
System.out.println("Domain update");
for(int i=0; i<domain.length; i++)     {
                System.out.print(domain[i]+"\t");
    kata+="\t"+domain[i];
                                                }
    Update(domain);
for(int i=0; i<dataTerbaik.length; i++)             {
    hasil[r]=dataTerbaik[i];
    r++;                                            }
    kata+="\n\tHasil terbaik setelah di update adalah\n\t";
    for(int i=0; i<hasil.length; i++){
   kata+=hasil[i]+"\t";}
                float jarHasil=hitung(hasil);
                kata+="\n\tdengan jarak "+jarHasil;
                hasil2.setText(kata);}
                }
    else{
    int kota=Integer.parseInt(input.getText());
    int posisi=Integer.parseInt(input1.getText());
    int pjg=nKunjungi-posisi+1+kota;
    int domain[]=new int[pjg];
    domain[0]=dataTerbaik[posisi-1];
    int hasil[]=new int[nKunjungi+kota];
    akhir=domain[0];
    terupdate=true;
    awal=dataTerbaik[0];
                int r=0;
                for(int i=0; i<posisi; i++)             {
                        hasil[r]=dataTerbaik[i];
                        r++;                            }
                String kata2=domain[0]+"\t";
    int k=1;
    hasil2.setText(hasil2.getText()+"\n\tkota yg ditambahkan\n\t");
    System.out.println("kota yang ditambahkan ");
    String kata=hasil2.getText();
    for(int i=nKunjungi; i<(nKunjungi+kota); i++){
                domain[k]=i;
```

```
                        kata2+=domain[k]+"\t";
                                System.out.print(domain[k]+"\t");
                        kata+=domain[k]+"\t";
                        k++; }
            for(int i=posisi; i<nKunjungi; i++){
                        domain[k]=dataTerbaik[i];
                        kata2+=domain[k]+"\t";
                        k++;}
      System.out.println();
      kata+="\n\t";
      System.out.println("sedangkan kombinasi kota yg update :");
      kata+="sedangkan kombinasi kota yg update :\n\t";
      kata+=kata2;
      System.out.println(kata2);
      Update(domain);
      for(int i=0; i<dataTerbaik.length; i++){
        hasil[r]=dataTerbaik[i];
        r++;}
          System.out.println("Hasil terbaik yang didapatkan");
          kata+="Hasil terbaik yang didapatkan\n\t";
          float jarHasil=hitung(hasil);
          for(int i=0; i<hasil.length; i++){
                        System.out.print(hasil[i]+"\t");
                        kata+=hasil[i]+"\t";}
          kata+="\n\t";
          System.out.println();
          System.out.println("dengan jarak : "+jarHasil);
          kata+="dengan jarak : "+jarHasil;
      hasil2.setText(kata);
    }
}
private float hitung(int data[]){
    float sum=0;
    for(int i=0; i<data.length-1; i++){
       sum+=jarak[data[i]][data[i+1]];
    }
    sum+=jarak[data.length-1][0];
    return sum;
}
private void Update(int domain[]){
    int n_ind=Integer.parseInt(pop_size.getText());
    int Iterasi=Integer.parseInt(iterasi.getText());
    float Alfa=Float.parseFloat(alfa.getText());
    float Beta=Float.parseFloat(beta.getText());
    float Pc=Float.parseFloat(pc.getText());
    float Pm=Float.parseFloat(pm.getText());
    int N_kunjungi=domain.length;
    System.out.println("kota update "+N_kunjungi);
    int tabu[][]=new int[n_ind][N_kunjungi];
    Semut panggil=new Semut();
    float jarak_tabu[]=panggil.data(n_ind, N_kunjungi, Alfa, Beta, Iterasi,tabu,jarak,domain);
    System.out.println("#semua ditampilkan");
    tampildi(tabu,jarak_tabu);
    GA panggil2=new GA();
    dataTerbaik=new int[N_kunjungi-1];
    int [][]tabu_baru=newtabu(tabu);
    float terbaik=panggil2.GAterbaik(tabu_baru, jarak_tabu, Pc, Pm, Iterasi, dataTerbaik);
}
private int[][]newtabu(int tabu[][]){
    int baru[][]=new int[tabu.length][tabu[0].length-1];
    for(int i=0; i<tabu.length; i++){
       for(int j=1; j<tabu[0].length; j++){
          baru[i][j-1]=tabu[i][j];
       }
    }
    return baru;
}
private void inputKeyReleased(java.awt.event.KeyEvent evt) {
    int nkota=table1.getColumnCount();
    int nKunjungi=Integer.parseInt(n_kunjungan.getText());
    int nkotaTambah=nkota-nKunjungi;
    String hasil=input.getText();
    if("".equals(hasil)||hasil.startsWith("-") || "0".equals(hasil)){
```

```
            N_Kota.setForeground(Color.red);
            input1.setEnabled(false);
        }else{
          if (hapus.isSelected()) {
           int kota=Integer.parseInt(hasil);
           if(kota>nKunjungi){
              N_Kota.setForeground(Color.red);
              input1.setEnabled(false);
           }
           else if(kota<nKunjungi){
             N_Kota.setForeground(Color.BLACK);
             input1.setEnabled(true);
           }

        } else {
             int kota = Integer.parseInt(hasil);
             if (kota == 1) {
               N_Kota.setForeground(Color.red);
               input1.setEnabled(false);
             } else {
               if (kota > nkotaTambah) {
                 N_Kota.setForeground(Color.red);
                 input1.setEnabled(false);
               } else if ((kota <= nkotaTambah) && (kota != 0)) {
                 N_Kota.setForeground(Color.BLACK);
                 input1.setEnabled(true);
               }
             }
          }
        }
    }
    private void input1KeyReleased(java.awt.event.KeyEvent evt) {
        String hasil=input1.getText();
        int nkota=Integer.parseInt(input.getText());
        int nKunjungan=Integer.parseInt(n_kunjungan.getText());
        if("".equals(hasil)||hasil.startsWith("-") || "0".equals(hasil)){
             N_Kota1.setForeground(Color.red);
             update.setEnabled(false);
        }
        else{
           int posisi=Integer.parseInt(hasil);
           if (posisi>1) {
              if (hapus.isSelected()) {
                 if (posisi>(nKunjungan-nkota)) {
                    N_Kota1.setForeground(Color.red);
                    update.setEnabled(false);
                 }
                 else if(posisi<=(nKunjungan-nkota)){
                    N_Kota1.setForeground(Color.BLACK);
                    update.setEnabled(true);
                 }
              }else{
                 if (posisi>nKunjungan) {
                    N_Kota1.setForeground(Color.red);
                    update.setEnabled(false);
                 }
                 else if(posisi<=nKunjungan){
                    N_Kota1.setForeground(Color.BLACK);
                    update.setEnabled(true);
                 }
              }
           }else{
              N_Kota1.setForeground(Color.red);
              update.setEnabled(false);
           }
        }
    }
    private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
        pop_size.setText(null);
        iterasi.setText(null);
        alfa.setText(null);
        beta.setText(null);
        pc.setText(null);
```

```
    pm.setText(null);
    n_kunjungan.setText(null);
}
            private void pop_sizeKeyReleased(java.awt.event.KeyEvent evt) {
    float t;
    String x = pop_size.getText();
    if ("".equals(x)) {
      epop.setText("1.Jumlah semut tidak boleh kosong");
                }
    else if (x.startsWith("-") || "0".equals(x)) {
      epop.setText("1.Jumlah semut tidak boleh kurang dari 0");
    }
    else {
      try {
        t = Float.parseFloat(x);
        epop.setText("");
        if (t % 1 != 0) {
          epop.setText("1.Jumlah semut tidak boleh pecahan");
                  }
        else {
          epop.setText("");}

      } catch (Exception e) {
        epop.setText("1.Jumlah semut tidak boleh string");
      }
    }
}

private void iterasiKeyReleased(java.awt.event.KeyEvent evt) {
    float t;
    String x = iterasi.getText();
    if ("".equals(x)) {
      eite.setText("2.Iterasi tidak boleh kosong");
                }

    else if (x.startsWith("-") || "0".equals(x)) {
      eite.setText("2.Iterasi tidak boleh kurang dari 0");
    }
    else {
      try {
        t = Float.parseFloat(x);
        eite.setText("");
        if (t % 1 != 0) {
          eite.setText("2.Iterasi tidak boleh pecahan");
                  }
        else {
          eite.setText("");}

      } catch (Exception e) {
        eite.setText("2.Iterasi tidak boleh string");
      }
    }
}

private void alfaKeyReleased(java.awt.event.KeyEvent evt) {
    float t;
    String x = alfa.getText();
    if ("".equals(x)) {
      eA.setText("3.Alfa tidak boleh kosong");
    } else if (x.startsWith("-") || "0".equals(x)) {
      eA.setText("3.Alfa tidak boleh <= 0");
    } else {
      try {
        t = Float.parseFloat(x);
        eA.setText("");
        if (t >= 1) {
          eA.setText("3.Rekomendasi, Alfa < 1 ");
        } else {
          eA.setText("");
        }
      } catch (Exception e) {
        eA.setText("3.Alfa tidak boleh string");
      }
```

```
    }
}

private void betaKeyReleased(java.awt.event.KeyEvent evt) {
    float t;
    String x = beta.getText();
    if ("".equals(x)) {
        eB.setText("4.Beta tidak boleh kosong");
    } else if (x.startsWith("-") || "0".equals(x)) {
        eB.setText("4.Beta tidak boleh <= 0");
    } else {
        try {
            t = Float.parseFloat(x);
            eB.setText("");
            if (t % 1 != 0) {
                eB.setText("4.Rekomendasi, Beta > 1 ");
            } else {
                eB.setText("");
            }
        } catch (Exception e) {
            eB.setText("4.Beta tidak boleh string");
        }
    }
}

private void pcKeyReleased(java.awt.event.KeyEvent evt) {
    float t;
    String x = pc.getText();
    if ("".equals(x)) {
        ePC.setText("5.Nilai pc tidak boleh kosong");
    } else if (x.startsWith("-") || "0".equals(x)) {
        ePC.setText("5.Nilai pc tidak boleh <= 0");
    } else {
        try {
            t = Float.parseFloat(x);
            ePC.setText("");
            if (t >= 1) {
                ePC.setText("5.Nilai pc tidak boleh > 1");
            } else {
                ePC.setText("");
            }
        } catch (Exception e) {
            ePC.setText("5.Nilai pc tidak boleh string");
        }
    }

}

private void pmKeyReleased(java.awt.event.KeyEvent evt) {
    float t;
    String x = pm.getText();
    if ("".equals(x)) {
        ePM.setText("6.Nilai pm tidak boleh kosong");
    } else if (x.startsWith("-") || "0".equals(x)) {
        ePM.setText("6.Nilai pm tidak boleh <= 0");
    } else {
        try {
            t = Float.parseFloat(x);
            ePM.setText("");
            if (t >= 1) {
                ePM.setText("6.Nilai pm tidak boleh > 1");
            } else {
                ePM.setText("");
            }
        } catch (Exception e) {
            ePM.setText("6.Nilai pm tidak boleh string");
        }
    }
}

private void n_kunjunganKeyReleased(java.awt.event.KeyEvent evt) {
    float t;
    String x = n_kunjungan.getText();
```

```
    if ("".equals(x)) {
      eN.setText("7.n Kota tujuan tidak boleh kosong");
                }
    else if (x.startsWith("-") || "0".equals(x)) {
      eN.setText("7.n Kota tujuan tidak boleh kurang dari 0");
    }
    else {
      try {
        t = Float.parseFloat(x);
        eN.setText("");
        if (t % 1 != 0) {
          eN.setText("7.n Kota tujuan tidak boleh pecahan");
        }
        else{
          eN.setText("");}
      } catch (Exception e) {
        eN.setText("7.n Kota tidak boleh string");
      }
    }
}



            private float[] Perhitungan_jarak(int tabu[][]) {
                        float jar_total[] = new float[tabu.length];
                        int maks_ant=tabu.length;
                        for (int i = 0; i < maks_ant; i++) {
                        float sum = 0;
                        for (int t = 0; t < tabu[0].length - 1; t++) {
                    sum = sum + jarak[tabu[i][t]][tabu[i][t + 1]];
                        System.out.print(jarak[tabu[i][t]][tabu[i][t + 1]] + " ");
                        if (t == tabu[0].length - 2) {
                                    sum = sum + jarak[tabu[i][0]][tabu[i][t + 1]];
                                    System.out.print(jarak[tabu[i][0]][tabu[i][t + 1]] + " ");
                                                }
                                     jar_total[i] = sum;
                                                        }
            System.out.println("Total_Jaraknya: " + jar_total[i]);
                        }
                        return jar_total;
                        }
 private int []cariDomain(int awal, int akhir){
    int n=akhir-awal;
    int hasil[]=new int[n];
    for(int i=0; i<n; i++){
      hasil[i]=i+awal;
            }
    return hasil;
            }
 private float [][]dataJarak(int nKota){
    float datajarak[][]=new float[nKota][nKota];
    for(int i=0; i<datajarak.length; i++){
      for(int j=0; j<datajarak[0].length; j++){
        datajarak[i][j]=jarak[i][j];
            }
    }
    return datajarak;
 }

 private void tampildi(int data[][],float jarak[]){
    for(int i=0; i<data.length; i++){
      tampildi(data[i],jarak[i]);
            }
}

 private void tampildi(int data[],float jarak){
    for(int i=0; i<data.length; i++){
      System.out.print(data[i]+"\t");
    }
    System.out.println("jarak "+jarak);
 }
 private boolean read(JTable jTable1, JScrollPane jScrollPane1) {
    boolean hasil = false;
```

```
    final JFileChooser fc = new JFileChooser();
    fc.showOpenDialog(this);
    try {
      namaFileExcel = fc.getSelectedFile();
      if (namaFileExcel != null) {
        try {
          Workbook w = Workbook.getWorkbook(namaFileExcel);
          // Get the first sheet
          Sheet sheet = w.getSheet(0);
          // Loop over first 10 column and lines
          int jmlCol = sheet.getColumns();
          int jmlRow = sheet.getRows();
          n_kunjungan.setText(String.valueOf(jmlCol));
          jarak=new float[jmlCol][jmlRow];
          String[] namaKolom = new String[jmlCol];
          String isiData[][] = new String[jmlRow][jmlCol];
          String[] header = new String[jmlRow];

          // KALAU BARIS DATANYA TIDAK ADA, BERARTI DATANYA KOSONG
          if (jmlRow > 0) {
            // ASUMSI BAHWA BARIS PERTAMA ADALAH NAMA KOLOM
            for (int j = 0; j < jmlCol; j++) {
              namaKolom[j] = "Kota " + (j + 1);
              header[j] = "Kota " + (j + 1);
            }

            // ISI DATA
            for (int i = 0; i < jmlRow; i++) {
              for (int j = 0; j < jmlCol; j++) {
                {
                  isiData[i][j] = sheet.getCell(j, i).getContents();
                  jarak[i][j]=Float.parseFloat(isiData[i][j]);
                }
              }
            }
          }

          // MASUKAN JUDUL KOLOM DAN ISI DATA KE TABEL
          jTable1.setModel(new javax.swing.table.DefaultTableModel(isiData, namaKolom));
          setRowHeader(jTable1, jScrollPane1, header, namaKolom.length);
          jScrollPane1.setViewportView(jTable1);
          hasil = true;
        } catch (BiffException e) {
          JOptionPane.showMessageDialog(this, e.toString());
        }
      } else {
        JOptionPane.showMessageDialog(this, "Pilih file terlebih dahulu!");
        hasil = false;
        jTable1.requestFocus();
      }
    } catch (Exception ioe) {
      hasil = false;
      JOptionPane.showMessageDialog(this, ioe.toString());
    }
    return hasil;
  }
  private void setRowHeader(JTable jTable1, JScrollPane jScrollPane1, String header[], int kolom) {
    listHeader = new JList();
    listHeader.setListData(header);
    listHeader.setFixedCellWidth(50);
    listHeader.setFixedCellHeight(jTable1.getRowHeight());
    listHeader.setBackground(jTable1.getTableHeader().getBackground());
    listHeader.setCellRenderer(new RowCellRenderer(jTable1));
    if (kolom > 10) {
      jTable1.setAutoResizeMode(0);
    }
    jScrollPane1.setRowHeaderView(listHeader);
  }
  public static void main(String args[])        {

                                                  }
```

Kelas Semut:

```
import static skripsiku90.NewJFrame.jarak;
import static skripsiku90.NewJFrame.awal;
import static skripsiku90.NewJFrame.terupdate;
public class Semut {
public float[]data(int maks_ant, int jml_kota,float alpha, float beta, int iterasi, int tabu[][],float jarak[][],int domain[]){
    //int tabu[][] = new int[maks_ant][jml_kota];
    float jarak_tabu[]=new float[jml_kota];
    System.out.println("Pheromone Awal = ");
    double phero[][] = Phero(jml_kota);
    float rho = (float) 0.7;
    boolean uap=false;
    for (int i = 0; i < iterasi; i++) {
            //penguapanPherom(phero,jml_kota);
            Pilihkota(alpha, beta, phero, jarak, tabu,domain);
             if(terupdate){
            jarak_tabu=Perhitungan(tabu,awal);
                        }else{
                        jarak_tabu=Perhitungan(tabu);
                        }
      float Q = 1000;
      if(i%4==0){
         uap=true;
      }
      Upd_phero(tabu, maks_ant, jml_kota, jarak_tabu, phero, rho, Q,domain,uap);
      System.out.println("-t.r.h-");
      uap=false;
    }

    System.out.println("JARAK : "+jarak_tabu[0]);
    return jarak_tabu;
            }

  private double [][]Phero(int jml_kota){
    double [][]phero=new double[jml_kota][jml_kota];
    for(int i=0; i<jml_kota; i++){
        for(int j=0; j<jml_kota; j++){
          if(i==j){
             phero[i][j]=0;
          }
          else{
           phero[i][j]=(float)1/jml_kota;
          }
          System.out.print(phero[i][j]+" ");
        }System.out.println();
     }
    return phero;
  }

  public void Pilihkota(float alfa, float beta, double phero[][], float jarak[][], int tabu[][], int domain[]) {
    double prob[][] = new double[tabu.length][tabu[0].length];
    for (int i = 0; i < tabu.length; i++) {
      if (terupdate) {
         tabu[i][0] = domain[0];
      } else {
         int index = (int) (Math.random() * domain.length);
         tabu[i][0] = domain[index];
      }
      System.out.println("ant ke " + (i + 1));
      System.out.println("kota awal " + tabu[i][0]);
      for (int j = 1; j < tabu[0].length; j++) {
         if (j == 1) {
            double penyebut = 0;
            for (int k = 0; k < tabu[0].length; k++) {
               if (domain[k] != tabu[i][j - 1]) {
                  int indeks = index(tabu[i][j - 1], domain);
                  //System.out.println(indeks);
                  double a =  Math.pow(phero[indeks][k], alfa);
                  double b =  Math.pow(((double) 1 / jarak[tabu[i][j - 1]][domain[k]]), beta);
                  penyebut += (float) (a * b);
```

```
                }
            }
            System.out.println("prob ant ke " + (i + 1));
            for (int k = 0; k < tabu[0].length; k++) {
                if (domain[k] != tabu[i][j - 1]) {
                    int indeks = index(tabu[i][j - 1], domain);
                    double a = Math.pow(phero[indeks][k], alfa);
                    double b =  Math.pow(((double) 1 / jarak[tabu[i][j - 1]][domain[k]]), beta);
                    prob[i][k] = (a * b) / penyebut;
                    System.out.print(prob[i][k] + "\t");
                } else {
                    System.out.print(prob[i][k] + "\t");
                }
            }
        } else {
            double penyebut = 0;
            for (int k = 0; k < tabu[0].length; k++) {
                if (prob[i][k] != 0) {
                    int indeks = index(tabu[i][j - 1], domain);
                    double a = Math.pow(phero[indeks][k], alfa);
                    double b =  Math.pow(((double) 1 / jarak[tabu[i][j - 1]][domain[k]]), beta);
                    penyebut += (a * b);
                }
            }
            System.out.println("prob ant ke " + (i + 1));
            for (int k = 0; k < tabu[0].length; k++) {
                if (prob[i][k] != 0) {
                    int indeks = index(tabu[i][j - 1], domain);
                    double a = Math.pow(phero[indeks][k], alfa);
                    double b = Math.pow(((double) 1 / jarak[tabu[i][j - 1]][domain[k]]), beta);
                    prob[i][k] = (double) (a * b) / penyebut;
                    System.out.print(prob[i][k] + "\t");
                } else {
                    System.out.print(prob[i][k] + "\t");
                }
            }
        }
        System.out.println();
        float rand = (float) Math.random();
        System.out.println("di random untuk memilih kota selanjutnya " + rand);
        float sum = 0;
        for (int k = 0; k < tabu[0].length; k++) {
            sum += prob[i][k];
            if (rand <= sum) {
                tabu[i][j] = domain[k];
                prob[i][k] = 0;
                break;
            }
        }
        System.out.println("rute kota menjadi ");
        for (int k = 0; k <= j; k++) {
            System.out.print(tabu[i][k] + "\t");
        }
        System.out.println();
    }
    System.out.println();
  }
}
        private int index(int cari, int data[]){
                int k = 0;
                for(int i=0; i<data.length; i++){
                        if(cari==data[i]){
                k=i;
                break;
                }
        }
  return k;
}
private float[] Perhitungan(int tabu[][]) {
  float jar_total[] = new float[tabu.length];
  for (int i = 0; i < tabu.length; i++) {
    jar_total[i] = Perhitungan(tabu[i], tabu[i][0]);
    System.out.println("Total_Jaraknya : " + jar_total[i]);
```

```
    }
    return jar_total;
  }

  private float[] Perhitungan(int tabu[][],int awal) {
    float jar_total[] = new float[tabu.length];
    for (int i = 0; i < tabu.length; i++) {
      jar_total[i] = Perhitungan(tabu[i], awal);
      System.out.println("Total_Jaraknya : " + jar_total[i]);
    }
    return jar_total;
  }

  private float Perhitungan(int tabu[], int awal) {
    float sum = 0;
    for (int t = 0; t < tabu.length - 1; t++) {
      sum = sum + jarak[tabu[t]][tabu[t + 1]];
      System.out.print(jarak[tabu[t]][tabu[t + 1]] + " ");
    }
    sum += jarak[tabu[tabu.length - 1]][awal];
    return sum;
  }

public void Upd_phero(int tabu[][],int maks_ant, int jml_kota,float jar_total[],double phero[][],float rho, float Q,int domain[],boolean
uap){
  float jml[][][]=new float [maks_ant][jml_kota][jml_kota];
  for(int i=0; i<maks_ant; i++){
       for(int r=0; r<jml_kota-1; r++)
       {
         if(r!=jml_kota-1)
         {
         int index1=index(tabu[i][r],domain);
         int index2=index(tabu[i][r+1],domain);
         jml[i][index1][index2]=Q/jar_total[i];
         System.out.print(Q/jar_total[i]+" ");
         }
         Else

         {
         int index1=index(tabu[i][0],domain);
         int index2=index(tabu[i][r+1],domain);
         jml[i][index1][index2]=Q/jar_total[i];
         System.out.print(Q/jar_total[i]+" ");
         }
       }
       System.out.println();
  }System.out.println();
  System.out.println("Phero Update");
  for(int j=0; j<jml_kota; j++){
    for(int r=0; r<jml_kota; r++){
       double j1=0;
       for(int i=0; i<maks_ant; i++){
            j1=j1+jml[i][j][r];
            j1=j1+jml[i][r][j];
       }
       double c=0;
       if(uap){
         c=((1-rho)*phero[j][r])+j1;
       }else{
         c=(rho*phero[j][r])+j1;
       }
       phero[j][r]=c;
       System.out.print(phero[j][r]+" | ");
      if (phero[j][r] <= 1E-20 && phero[j][r] >= 0) {
         phero[j][r] = (double)1/jml_kota;
           }
    }
           System.out.println();}
           }
  }
```

Kelas GA:

```
import java.util.LinkedList;
import static skripsiku90.NewJFrame.jarak;
import static skripsiku90.NewJFrame.terupdate;
import static skripsiku90.NewJFrame.awal;
import static skripsiku90.NewJFrame.akhir;

public class GA {
   public float GAterbaik(int tabu[][], float jar_total[], float Pc, float Pm, int iterasi, int dataTerbaik[]) {
      float terbaik = 0;
      System.out.println("max ant " + tabu.length + " n kota yg dikunjungi " + tabu[0].length);
      System.out.println("PROSES ALGORITMA GENETIKA\n\n\n");
      for (int i = 0; i < iterasi; i++) {
         float fitKum[] = fitnesKumulatif(jar_total);
         int calonInduk[] = seleksi(fitKum);
         System.out.println("Crossover");
         int anakCros[][] = crossover(Pc, calonInduk, tabu);
         System.out.println("Hitung jarak masing2 anak Crossover");
         float Jarak_anakCros[] = null;
         if (!terupdate) {
            Jarak_anakCros = Perhitungan(anakCros);
         } else {
            Jarak_anakCros = Perhitungan(anakCros, awal, akhir);
         }
         calonInduk = seleksi(fitKum);
         System.out.println("Mutasi");
         int anakMutasi[][] = mutasi(calonInduk, Pm, tabu);
         System.out.println("Hitung jarak masing2 anak Mutasi");
         float Jarak_anakMutasi[] = null;
         if(!terupdate){
            Jarak_anakMutasi= Perhitungan(anakMutasi);
         }else{
            Jarak_anakMutasi= Perhitungan(anakMutasi,awal,akhir);
         }
         gabung(tabu, anakCros, anakMutasi, jar_total, Jarak_anakCros, Jarak_anakMutasi);
         int k = terbaik(jar_total);
         if (i == 0) {
            System.arraycopy(tabu[k], 0, dataTerbaik, 0, tabu[0].length);
            terbaik = jar_total[k];
         } else {
            if (terbaik > jar_total[k]) {
               System.arraycopy(tabu[k], 0, dataTerbaik, 0, tabu[0].length);
               terbaik = jar_total[k];
            }
         }
         System.out.println();
         System.out.print("pop baru");
         tampil(tabu);
      }
      System.out.print("DATA TERBAIK");
      tampil(dataTerbaik);
      System.out.print("Jarak :" + terbaik);
      return terbaik;
   }
   private int terbaik(float terbaik[]){
      float pendek=terbaik[0];
      int k=0;
      for(int i=1; i<terbaik.length; i++){
         if(pendek>terbaik[i]){
            pendek=terbaik[i];
            k=i;
         }
      }
      return k;
   }
   private float []fitnesKumulatif(float jarak[]){
      float fitKum[]=new float[jarak.length];
      float sum=0;
      for(int i=0; i<jarak.length; i++){
         sum+=jarak[i];
      }
```

```
    float sumEval=0;
    float Eval[]=new float[jarak.length];
    for(int i=0; i<jarak.length; i++){
       Eval[i]=sum-jarak[i];
       sumEval+=Eval[i];
    }
    float sumKum=0;
    System.out.println("didapatkan fitkumnya : ");
    for(int i=0; i<jarak.length; i++){
       sumKum+=Eval[i]/sumEval;
       fitKum[i]=sumKum;
       System.out.print(fitKum[i]+"\t");
    }
    return fitKum;
  }
  private int  []seleksi(float fitkum[]){
     int n=fitkum.length;
     int calonInduk[]=new int[n];
    for(int i=0; i<n; i++){
       double rand=Math.random();
       System.out.print("random "+rand);
       for(int j=0; j<n; j++){
          if(rand<=fitkum[j])
          {
           calonInduk[i]=j;
           System.out.println("  Calon Induknya adalah ke "+(j+1));
           break;
          }
       }
    }
    return calonInduk;
  }
  private int [][]crossover(float Pc,int calonInduk[], int data[][]){
    System.out.println("###panjang data : "+data[0].length);
     LinkedList induk=new LinkedList();
    System.out.println();
    for(int i=0; i<data.length; i++){
       double rand=Math.random();
       System.out.print((i+1)+". random : "+rand);
       if(rand<=Pc){
          induk.add(calonInduk[i]);
          System.out.println(" => Induk ke "+(calonInduk[i]+1));
       }
       else{
          System.out.println(" => bukan Induk");
       }
    }
    System.out.println(induk.size());
    if(induk.size()%2!=0){
       induk.removeLast();
    }
    int n_anak=induk.size();
    int anak[][]=new int[n_anak][data[0].length];
    int pjg=data[0].length;
    for(int i=0; i<n_anak; i=i+2){
       int rand=(int) (Math.random()*pjg);
       for(int j=0; j<data[0].length; j++){
          anak[i][j]=data[(int)induk.get(i)][j];
          anak[i+1][j]=data[(int)induk.get(i+1)][j];
       }
       System.out.println("random cut  : "+rand+"\ninduk : ");
       tampil(anak[i]);
       tampil(anak[i+1]);
       for(int j=rand; j<pjg; j++){
          int swap =anak[i][j];
          anak[i][j]=anak[i+1][j];
          anak[i+1][j]=swap;
       }
       System.out.println("setelah ditukar");
       tampil(anak[i]);
       tampil(anak[i+1]);
       benarkan(rand,anak[i],data[(int)induk.get(i)]);
       benarkan(rand,anak[i+1],data[(int)induk.get(i+1)]);
```

```
            System.out.println("setelah dibenarkan");
            tampil(anak[i]);
            tampil(anak[i+1]);
        }
        return anak;
    }
    private void tampil(int data[][]){
        for(int i=0; i<data.length; i++){
            tampil(data[i]);
        }
    }
    private void tampil(int data[]){
        System.out.println();
        for(int i=0; i<data.length; i++){
            System.out.print(data[i]+"\t");
        }
        System.out.println();
    }
    private void benarkan(int rand,int anak[],int data[]){
        LinkedList tukar=cariygkurang(data,anak);
        LinkedList posisi=cariygsama(rand,anak);
        for(int i=0; i<tukar.size(); i++){
            anak[(int)posisi.get(i)]=(int)tukar.get(i);
        }
    }

    private LinkedList cariygsama(int n, int data[]){
        LinkedList hasil=new LinkedList();
        for(int i=n; i<data.length; i++){
            for(int j=0; j<n; j++){
                if(data[i]==data[j]){
                    hasil.add(j);
                    break;
                }
            }
        }
        return hasil;
    }
    private LinkedList cariygkurang(int data1[], int data2[]){
        LinkedList hasil=new LinkedList();
        for(int i=0; i<data1.length; i++){
            boolean apa=false;
            for(int j=0; j<data1.length; j++){
                if(data1[i]==data2[j]){
                    apa=true;
                    break;
                }
            }
            if(apa==false){
                hasil.add(data1[i]);
            }
        }
        return hasil;
    }

    private int [][] mutasi(int calonInduk[], float Pm,int data[][]){
        LinkedList induk=new LinkedList();
      System.out.println();
      for(int i=0; i<data.length; i++){
          double rand=Math.random();
          System.out.print((i+1)+". random : "+rand);
          if(rand<=Pm){
              induk.add(calonInduk[i]);
              System.out.println(" => Induk ke "+(calonInduk[i]+1));
          }
          else{
              System.out.println(" => bukan Induk");
          }
      }
      int anakMutasi[][]=new int[induk.size()][data[0].length];
      for(int i=0; i<anakMutasi.length; i++){
          System.out.println("Induknya :");
          for(int j=0; j<data[0].length; j++){
```

```
            System.out.print(data[(int)induk.get(i)][j]+"\t");
        }
        System.out.println("\nMerandom lokus yang ditukar:");
        int rand1=(int) (Math.random()*anakMutasi[0].length);
        int rand2=rand1;
        do{
        rand2=(int) (Math.random()*anakMutasi[0].length);
        }while(rand2==rand1);
        System.out.println("lokus "+rand1+" dengan lokus "+rand2);
        System.out.println("didapatkan anak :");
        for(int j=0; j<anakMutasi[0].length; j++){
            if(j==rand1){
                anakMutasi[i][j]=data[(int)induk.get(i)][rand2];
                            }
            else if(j==rand2){
                anakMutasi[i][j]=data[(int)induk.get(i)][rand1];
                            }
            else{
                anakMutasi[i][j]=data[(int)induk.get(i)][j];
                            }
            System.out.print(anakMutasi[i][j]+"\t");
                            }
        System.out.println("");
                            }
              return anakMutasi;
              }
    private float[] Perhitungan(int tabu[][]) {
        float jar_total[] = new float[tabu.length];
        for (int i = 0; i < tabu.length; i++) {
            float sum=0;
            for (int t = 0; t < tabu[0].length - 1; t++) {
                sum = sum + jarak[tabu[i][t]][tabu[i][t + 1]];
                System.out.print(jarak[tabu[i][t]][tabu[i][t + 1]] + " ");
            }
            sum += jarak[tabu[i][tabu[0].length - 1]][tabu[i][0]];
            jar_total[i] = sum;
            System.out.println("Total_Jaraknya: " + jar_total[i]);
        }
        return jar_total;
    }

    private float[] Perhitungan(int tabu[][],int awal,int akhir) {
        float jar_total[] = new float[tabu.length];
        for (int i = 0; i < tabu.length; i++) {
            float sum=jarak[akhir][tabu[i][0]];
            for (int t = 0; t < tabu[0].length - 1; t++) {
                sum = sum + jarak[tabu[i][t]][tabu[i][t + 1]];
                System.out.print(jarak[tabu[i][t]][tabu[i][t + 1]] + " ");
            }
            sum += jarak[tabu[i][tabu[0].length - 1]][awal];
            jar_total[i] = sum;
            System.out.println("Total_Jaraknya: " + jar_total[i]);
        }
        return jar_total;
    }

    private float Perhitungan(int tabu[], int awal) {
        float sum = 0;
        for (int t = 0; t < tabu.length - 1; t++) {
            sum = sum + jarak[tabu[t]][tabu[t + 1]];
            System.out.print(jarak[tabu[t]][tabu[t + 1]] + " ");
        }
        sum += jarak[tabu[tabu.length - 1]][awal];
        //jar_total[i] = sum;
        return sum;
    }

    private void gabung(int data[][], int anakCross[][], int anakMutasi[][],float induk[], float anak1[], float anak2[]){
        //float induk[] adalah jarak semua tabu list,
        //float anak1[] adalah jarak semua anak crossover
        //float anak2[] adalah jarak semua anak mutasi
        int popBaru[][]=new int[data.length][data[0].length];
        float jarBaru[]=new float[data.length];
```

```
        float gabung[]=new float[induk.length+anak1.length+anak2.length];
        int k=0;
        for(int i=0; i<induk.length; i++){
          gabung[k]=induk[i];
          k++;
        }
        for(int i=0; i<anak1.length; i++){
          gabung[k]=induk[i];
          k++;
        }
        for(int i=0; i<anak2.length; i++){
          gabung[k]=induk[i];
          k++;
        }
        for(int i=0; i<induk.length; i++){
          float terbaik=gabung[i];
          int r=i;
          for(int j=i; j<gabung.length; j++){
            if(terbaik>gabung[j]){
              terbaik=gabung[j];
              r=j;
            }
          }
          if(r<induk.length){
            for(int j=0; j<data[0].length; j++){
              popBaru[i][j]=data[r][j];
              int temp=data[i][j];
              data[i][j]=data[r][j];
              data[r][j]=temp;
            }
            jarBaru[i]=gabung[r];
            float tukar=gabung[i];
            gabung[i]=gabung[r];
            gabung[r]=tukar;
          }
          else if(r<(induk.length+anak1.length)){
            int index=r-induk.length;
            System.out.println("r : "+r);
            System.out.println("index "+index);
            for(int j=0; j<data[0].length; j++){
              popBaru[i][j]=anakCross[index][j];
              int temp=anakCross[index][j];
              anakCross[index][j]=data[i][j];
              data[i][j]=temp;
            }
            jarBaru[i]=gabung[r];
            float tukar=gabung[r];
            gabung[r]=gabung[i];
            gabung[i]=tukar;
          }
          else if(r<(induk.length+anak1.length+anak2.length)){
            int index=r-(induk.length+anak1.length);
            for(int j=0; j<data[0].length; j++){
              popBaru[i][j]=anakMutasi[index][j];
              int temp=anakMutasi[index][j];
              anakMutasi[index][j]=data[i][j];
              data[i][j]=temp;
            }
            jarBaru[i]=gabung[r];
            float tukar=gabung[r];
            gabung[r]=gabung[i];
            gabung[i]=tukar;
          }
        }
        for(int i=0; i<data.length; i++){
          System.arraycopy(popBaru[i], 0, data[i], 0, data[0].length);
          induk[i]=jarBaru[i];
                              }
                }
}
```

Lampiran 5 : Tatap Muka Program