

Index	Rule
1	$\forall x, y \text{ @Mondial_A:Country}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_A:name}(x, y) \rightarrow \text{@Mondial_B:Country}(x) \wedge$ $\text{@Mondial_B:name}(x, y)$
2	$\forall x, y \text{ @Mondial_A:Country}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_A:code}(x, y) \rightarrow \text{@Mondial_B:Country}(x) \wedge$ $\text{@Mondial_B:car_code}(x, y)$
3	$\forall x, y \text{ @Mondial_A:Country}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_A:capital}(x, y) \rightarrow \exists z \text{@Mondial_B:Country}(x) \wedge$ $\text{@Mondial_B:City}(z) \wedge \text{@Mondial_B:capital}(x, z) \wedge \text{@Mondial_B:name}(z, y)$
4	$\forall x, y \text{ @Mondial_A:Country}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_A:area}(x, y) \rightarrow \text{@Mondial_B:Country}(x) \wedge$ $\text{@Mondial_B:area}(x, y)$
5	$\forall x, y \text{ @Mondial_A:Country}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_A:Population}(x, y) \rightarrow \text{@Mondial_B:Country}(x) \wedge$ $\text{@Mondial_B:Population}(x, y)$
6	$\forall x, y \text{ @Mondial_A:Province}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_A:name}(x, y) \rightarrow \text{@Mondial_B:Province}(x) \wedge$ $\text{@Mondial_B:name}(x, y)$
7	$\forall x, y \text{ @Mondial_A:Province}(x) \wedge \text{@Mondial_A:Country}(y) \wedge$ $\text{@Mondial_A:country}(x, y) \rightarrow \text{@Mondial_B:Province}(x) \wedge \text{@Mondial_B:Country}(y) \wedge$ $\text{@Mondial_B:country}(x, y)$
8	$\forall x, y \text{ @Mondial_A:Province}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_A:capital}(x, y) \rightarrow \text{@Mondial_B:Province}(x) \wedge$ $\text{@Mondial_B:capital}(x, y)$
9	$\forall x, y \text{ @Mondial_A:City}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_A:name}(x, y) \rightarrow \text{@Mondial_B:City}(x) \wedge$ $\text{@Mondial_B:name}(x, y)$
10	$\forall x, y \text{ @Mondial_A:City}(x) \wedge \text{@Mondial_A:Country}(y) \wedge$ $\text{@Mondial_A:country}(x, y) \rightarrow \text{@Mondial_B:City}(x) \wedge \text{@Mondial_B:Country}(y) \wedge$ $\text{@Mondial_B:country}(x, y)$
11	$\forall x, y \text{ @Mondial_A:Economy}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_A:GDP}(x, y) \rightarrow \text{@Mondial_B:Country}(x) \wedge$ $\text{@Mondial_B:gdp_total}(x, y)$
12	$\forall x, y \text{ @Mondial_A:Economy}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_A:Agriculture}(x, y) \rightarrow \text{@Mondial_B:Country}(x) \wedge$ $\text{@Mondial_B:gdp_agri}(x, y)$
13	$\forall x, y \text{ @Mondial_A:Economy}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_A:service}(x, y) \rightarrow \text{@Mondial_B:Country}(x) \wedge$ $\text{@Mondial_B:gdp_serv}(x, y)$
14	$\forall x, y \text{ @Mondial_A:Economy}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_A:Industry}(x, y) \rightarrow \text{@Mondial_B:Country}(x) \wedge$ $\text{@Mondial_B:gdp_ind}(x, y)$
15	$\forall x, y \text{ @Mondial_A:Economy}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_A:Inflation}(x, y) \rightarrow \text{@Mondial_B:Country}(x) \wedge$ $\text{@Mondial_B:inflation}(x, y)$
16	$\forall x, y \text{ @Mondial_A:Population}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_A:population_growth}(x, y) \rightarrow \text{@Mondial_B:Country}(x) \wedge$ $\text{@Mondial_B:population_growth}(x, y)$
17	$\forall x, y \text{ @Mondial_A:Population}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_A:infant_mortality}(x, y) \rightarrow \text{@Mondial_B:Country}(x) \wedge$ $\text{@Mondial_B:infant_mortality}(x, y)$
18	$\forall x, y \text{ @Mondial_A:Politics}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_A:Independence}(x, y) \rightarrow \text{@Mondial_B:Country}(x) \wedge$ $\text{@Mondial_B:indep_date}(x, y)$

Table 1: Mappings From Mondial A to mondial B Databases : Part1

Index	Rule
19	$\forall x, y @Mondial_A:Politics(x) \wedge String(y) \wedge @Mondial_A:government(x, y) \rightarrow @Mondial_B:Country(x) \wedge @Mondial_B:government(x, y)$
20	$\forall x, y @Mondial_A:Continent(x) \wedge String(y) \wedge @Mondial_A:name(x, y) \rightarrow @Mondial_B:Continent(x) \wedge @Mondial_B:name(x, y)$
21	$\forall x, y @Mondial_A:Continent(x) \wedge String(y) \wedge @Mondial_A:area(x, y) \rightarrow @Mondial_B:Continent(x) \wedge @Mondial_B:area(x, y)$
22	$\forall x, y @Mondial_A:borders(x) \wedge @Mondial_A:Country(y) \wedge @Mondial_A:Country(z) \wedge @Mondial_A:country1(x, y) \wedge @Mondial_A:country2(x, z) \rightarrow @Mondial_B:border(x) \wedge @Mondial_B:forCountry(x, y) \wedge @Mondial_B:borderingCountry(x, z)$
23	$\forall x, y @Mondial_A:borders(x) \wedge String(y) \wedge @Mondial_A:length(x, y) \rightarrow @Mondial_B:border(x) \wedge @Mondial_B:length(x, y)$
24	$\forall x, y @Mondial_A:encompasses(x) \wedge @Mondial_A:Country(y) \wedge @Mondial_A:Continent(z) \wedge @Mondial_A:country(x, y) \wedge @Mondial_A:continent(x, z) \rightarrow @Mondial_B:encompass(x) \wedge @Mondial_B:country(x, y) \wedge @Mondial_B:continent(x, z)$
25	$\forall x, y @Mondial_A:encompasses(x) \wedge String(y) \wedge @Mondial_A:percentage(x, y) \rightarrow @Mondial_B:encompass(x) \wedge @Mondial_B:percentage(x, y)$
26	$\forall x, y @Mondial_A:Organization(x) \wedge String(y) \wedge @Mondial_A:name(x, y) \rightarrow @Mondial_B:Organization(x) \wedge @Mondial_B:name(x, y)$
27	$\forall x, y @Mondial_A:Organization(x) \wedge String(y) \wedge @Mondial_A:abbreviation(x, y) \rightarrow @Mondial_B:Organization(x) \wedge @Mondial_B:abbrev(x, y)$
28	$\forall x, y @Mondial_A:is_member(x) \wedge @Mondial_A:Country(y) \wedge @Mondial_A:organization(z) \wedge @Mondial_A:country(x, y) \wedge @Mondial_A:organization(x, z) \rightarrow @Mondial_B:member(x) \wedge @Mondial_B:country(x, y) \wedge @Mondial_B:org(x, z)$
29	$\forall x, y @Mondial_A:is_member(x) \wedge String(y) \wedge @Mondial_A:type(x, y) \rightarrow @Mondial_B:member(x) \wedge @Mondial_B:type(x, y)$
30	$\forall x, y @Mondial_A:Mountain(x) \wedge String(y) \wedge @Mondial_A:name(x, y) \rightarrow @Mondial_B:Mountain(x) \wedge @Mondial_B:name(x, y)$
31	$\forall x, y @Mondial_A:Mountain(x) \wedge String(y) \wedge @Mondial_A:height(x, y) \rightarrow @Mondial_B:Mountain(x) \wedge @Mondial_B:height(x, y)$
30	$\forall x, y @Mondial_A:Mountain(x) \wedge String(y) \wedge @Mondial_A:CoordinatesLatitude(x, y) \rightarrow @Mondial_B:Mountain(x) \wedge @Mondial_B:longitude(x, y)$
31	$\forall x, y @Mondial_A:Mountain(x) \wedge String(y) \wedge @Mondial_A:CoordinatesLongitude(x, y) \rightarrow @Mondial_B:Mountain(x) \wedge @Mondial_B:latitude(x, y)$
32	$\forall x, y @Mondial_A:desert(x) \wedge String(y) \wedge @Mondial_A:name(x, y) \rightarrow @Mondial_B:desert(x) \wedge @Mondial_B:name(x, y)$
33	$\forall x, y @Mondial_A:desert(x) \wedge String(y) \wedge @Mondial_A:area(x, y) \rightarrow @Mondial_B:desert(x) \wedge @Mondial_B:area(x, y)$

Table 2: Mappings From Mondial A to mondial B Databases: Part2

Index	Rule
34	$\forall x, y @Mondial_A:island(x) \wedge String(y) \wedge @Mondial_A:name(x, y) \rightarrow @Mondial_B:island(x) \wedge @Mondial_B:name(x, y)$
35	$\forall x, y @Mondial_A:island(x) \wedge String(y) \wedge @Mondial_A:area(x, y) \rightarrow @Mondial_B:island(x) \wedge @Mondial_B:area(x, y)$
36	$\forall x, y @Mondial_A:island(x) \wedge String(y) \wedge @Mondial_A:CoordinatesLong(x, y) \rightarrow @Mondial_B:island(x) \wedge @Mondial_B:longitude(x, y)$
37	$\forall x, y @Mondial_A:island(x) \wedge String(y) \wedge @Mondial_A:CoordinatesLat(x, y) \rightarrow @Mondial_B:island(x) \wedge @Mondial_B:latitude(x, y)$
38	$\forall x, y @Mondial_A:lake(x) \wedge String(y) \wedge @Mondial_A:name(x, y) \rightarrow @Mondial_B:lake(x) \wedge @Mondial_B:name(x, y)$
39	$\forall x, y @Mondial_A:lake(x) \wedge String(y) \wedge @Mondial_A:area(x, y) \rightarrow @Mondial_B:lake(x) \wedge @Mondial_B:area(x, y)$
40	$\forall x, y @Mondial_A:sea(x) \wedge String(y) \wedge @Mondial_A:name(x, y) \rightarrow @Mondial_B:sea(x) \wedge @Mondial_B:name(x, y)$
41	$\forall x, y @Mondial_A:sea(x) \wedge String(y) \wedge @Mondial_A:depth(x, y) \rightarrow @Mondial_B:sea(x) \wedge @Mondial_B:depth(x, y)$
42	$\forall x, y @Mondial_A:river(x) \wedge String(y) \wedge @Mondial_A:name(x, y) \rightarrow @Mondial_B:river(x) \wedge @Mondial_B:name(x, y)$
43	$\forall x, y @Mondial_A:river(x) \wedge String(y) \wedge @Mondial_A:lake(x, y) \rightarrow @Mondial_B:river(x) \wedge @Mondial_B:lake(x, y)$
44	$\forall x, y @Mondial_A:river(x) \wedge String(y) \wedge @Mondial_A:sea(x, y) \rightarrow @Mondial_B:river(x) \wedge @Mondial_B:sea(x, y)$
45	$\forall x, y @Mondial_A:river(x) \wedge String(y) \wedge @Mondial_A:length(x, y) \rightarrow @Mondial_B:river(x) \wedge @Mondial_B:length(x, y)$
46	$\forall x, y @Mondial_A:geo_mountain(x) \wedge @Mondial_A:mountain(y) \wedge @Mondial_A:country(z) \wedge @Mondial_A:mountain(x, y) \wedge @Mondial_A:country(x, z) \rightarrow @Mondial_B:mountain_located(x) \wedge @Mondial_B:mountain(x, y) \wedge @Mondial_B:country(x, z) \wedge @Mondial_B:mountain(y) \wedge @Mondial_B:country(z)$
47	$\forall x, y @Mondial_A:geo_lake(x) \wedge @Mondial_A:lake(y) \wedge @Mondial_A:country(z) \wedge @Mondial_A:lake(x, y) \wedge @Mondial_A:country(x, z) \rightarrow @Mondial_B:lake_located(x) \wedge @Mondial_B:lake(x, y) \wedge @Mondial_B:country(x, z) \wedge @Mondial_B:lake(y) \wedge @Mondial_B:country(z)$

Table 3: Mappings From Mondial A to mondial B Databases: Part3

Index	Rule
48	$\forall x, y \text{ @Mondial_A:geo_desert}(x) \wedge \text{ @Mondial_A:desert}(y) \wedge$ $\text{ @Mondial_A:country}(z) \wedge \text{ @Mondial_A:desert}(x, y) \wedge \text{ @Mondial_A:country}(x, z)$ $\rightarrow \text{ @Mondial_B:desert_located}(x) \wedge \text{ @Mondial_B:desert}(x, y) \wedge \text{ @Mondial_B:country}(x, z)$ $\wedge \text{ @Mondial_B:desert}(y) \wedge \text{ @Mondial_B:country}(z)$
49	$\forall x, y \text{ @Mondial_A:geo_sea}(x) \wedge \text{ @Mondial_A:sea}(y) \wedge$ $\text{ @Mondial_A:country}(z) \wedge \text{ @Mondial_A:sea}(x, y) \wedge \text{ @Mondial_A:country}(x, z)$ $\rightarrow \text{ @Mondial_B:sea_located}(x) \wedge \text{ @Mondial_B:sea}(x, y) \wedge \text{ @Mondial_B:country}(x, z)$ $\wedge \text{ @Mondial_B:sea}(y) \wedge \text{ @Mondial_B:country}(z)$
50	$\forall x, y \text{ @Mondial_A:geo_river}(x) \wedge \text{ @Mondial_A:river}(y) \wedge$ $\text{ @Mondial_A:country}(z) \wedge \text{ @Mondial_A:river}(x, y) \wedge \text{ @Mondial_A:country}(x, z)$ $\rightarrow \text{ @Mondial_B:river_located}(x) \wedge \text{ @Mondial_B:river}(x, y) \wedge \text{ @Mondial_B:country}(x, z)$ $\wedge \text{ @Mondial_B:river}(y) \wedge \text{ @Mondial_B:country}(z)$
51	$\forall x, y \text{ @Mondial_A:geo_island}(x) \wedge \text{ @Mondial_A:island}(y) \wedge$ $\text{ @Mondial_A:country}(z) \wedge \text{ @Mondial_A:island}(x, y) \wedge \text{ @Mondial_A:country}(x, z)$ $\rightarrow \text{ @Mondial_B:island_located}(x) \wedge \text{ @Mondial_B:island}(x, y) \wedge \text{ @Mondial_B:country}(x, z)$ $\wedge \text{ @Mondial_B:island}(y) \wedge \text{ @Mondial_B:country}(z)$

Table 4: Mappings From Mondial A to mondial B Databases: Part4

Index	Rule
1	$\forall x, y @Mondial_B:Country(x) \wedge String(y) \wedge @Mondial_B:name(x, y) \rightarrow @Mondial_A:Country(x) \wedge @Mondial_A:name(x, y)$
2	$\forall x, y @Mondial_B:Country(x) \wedge String(y) \wedge @Mondial_B:car_code(x, y) \rightarrow @Mondial_A:Country(x) \wedge @Mondial_A:code(x, y)$
3	$\forall x, y @Mondial_B:Country(x) \wedge emph@Mondial_B :city(y) \wedge String(z) \wedge @Mondial_B:capital(x, y) \wedge @Mondial_B:name(y, z) \rightarrow @Mondial_A:Country(x) \wedge @Mondial_A:captial(x, z)$
4	$\forall x, y @Mondial_B:Country(x) \wedge String(y) \wedge @Mondial_B:area(x, y) \rightarrow @Mondial_A:Country(x) \wedge @Mondial_A:area(x, y)$
5	$\forall x, y @Mondial_B:Country(x) \wedge String(y) \wedge @Mondial_B:Population(x, y) \rightarrow @Mondial_A:Country(x) \wedge @Mondial_A:Population(x, y)$
6	$\forall x, y @Mondial_B:Province(x) \wedge String(y) \wedge @Mondial_B:name(x, y) \rightarrow @Mondial_A:Province(x) \wedge @Mondial_A:name(x, y)$
7	$\forall x, y @Mondial_B:Province(x) \wedge @Mondial_B:Country(y) \wedge @Mondial_B:country(x, y) \rightarrow @Mondial_A:Province(x) \wedge @Mondial_A:Country(y) \wedge @Mondial_A:country(x, y)$
8	$\forall x, y @Mondial_B:Province(x) \wedge String(y) \wedge @Mondial_B:capital(x, y) \rightarrow @Mondial_A:Province(x) \wedge @Mondial_A:capital(x, y)$
9	$\forall x, y @Mondial_B:City(x) \wedge String(y) \wedge @Mondial_B:name(x, y) \rightarrow @Mondial_A:City(x) \wedge @Mondial_A:name(x, y)$
10	$\forall x, y @Mondial_B:City(x) \wedge @Mondial_B:Country(y) \wedge @Mondial_B:country(x, y) \rightarrow @Mondial_A:City(x) \wedge @Mondial_A:Country(y) \wedge @Mondial_A:country(x, y)$
11	$\forall x, y @Mondial_B:Country(x) \wedge String(y) \wedge @Mondial_B:gdp_{total}(x, y) \rightarrow @Mondial_A:Economy(x) \wedge @Mondial_A:GDP(x, y)$
12	$\forall x, y @Mondial_B:Country(x) \wedge String(y) \wedge @Mondial_B:gdp_{agri}(x, y) \rightarrow @Mondial_A:Economy(x) \wedge @Mondial_A:Agriculture(x, y)$
13	$\forall x, y @Mondial_B:Country(x) \wedge String(y) \wedge @Mondial_B:gdp_{serv}(x, y) \rightarrow @Mondial_A:Economy(x) \wedge @Mondial_A:Service(x, y)$
14	$\forall x, y @Mondial_B:Country(x) \wedge String(y) \wedge @Mondial_B:gdp_{nd}(x, y) \rightarrow @Mondial_A:Economy(x) \wedge @Mondial_A:Industry(x, y)$
15	$\forall x, y @Mondial_B:Country(x) \wedge String(y) \wedge @Mondial_B:infaltion(x, y) \rightarrow @Mondial_A:Economy(x) \wedge @Mondial_A:Inflation(x, y)$
16	$\forall x, y @Mondial_B:Country(x) \wedge String(y) \wedge @Mondial_B:population_growth(x, y) \rightarrow @Mondial_A:Population(x) \wedge @Mondial_A:population_growth(x, y)$
17	$\forall x, y @Mondial_B:Country(x) \wedge String(y) \wedge @Mondial_B:infant_mortality(x, y) \rightarrow @Mondial_A:Population(x) \wedge @Mondial_A:infant_mortality(x, y)$
18	$\forall x, y @Mondial_B:Country(x) \wedge String(y) \wedge @Mondial_B:indep_date(x, y) \rightarrow @Mondial_A:Politics(x) \wedge @Mondial_A:Independence(x, y)$

Table 5: Mappings From Mondial B to mondial A Databases : Part1

Index	Rule
19	$\forall x, y @Mondial_B:Country(x) \wedge String(y) \wedge @Mondial_B:government(x, y) \rightarrow @Mondial_A:Politics(x) \wedge @Mondial_A:government(x, y)$
20	$\forall x, y @Mondial_B:Continent(x) \wedge String(y) \wedge @Mondial_B:name(x, y) \rightarrow @Mondial_A:Continent(x) \wedge @Mondial_A:name(x, y)$
21	$\forall x, y @Mondial_B:Continent(x) \wedge String(y) \wedge @Mondial_B:area(x, y) \rightarrow @Mondial_A:Continent(x) \wedge @Mondial_A:area(x, y)$
22	$\forall x, y @Mondial_B:borders(x) \wedge @Mondial_B:Country(y) \wedge @Mondial_B:Country(z) \wedge @Mondial_B:forcountry(x, y) \wedge @Mondial_B:borderingcountry(x, z) \rightarrow @Mondial_A:border(x) \wedge @Mondial_A:Country1(x, y) \wedge @Mondial_A:Country2(x, z)$
23	$\forall x, y @Mondial_B:borders(x) \wedge String(y) \wedge @Mondial_B:length(x, y) \rightarrow @Mondial_A:border(x) \wedge @Mondial_A:length(x, y)$
24	$\forall x, y @Mondial_B:encompass(x) \wedge @Mondial_B:Country(y) \wedge @Mondial_B:Continent(z) \wedge @Mondial_B:country(x, y) \wedge @Mondial_B:continent(x, z) \rightarrow @Mondial_A:encompasses(x) \wedge @Mondial_A:country(x, y) \wedge @Mondial_A:continent(x, z)$
25	$\forall x, y @Mondial_B:encompass(x) \wedge String(y) \wedge @Mondial_B:percentage(x, y) \rightarrow @Mondial_A:encompasses(x) \wedge @Mondial_A:percentage(x, y)$
26	$\forall x, y @Mondial_B:Organization(x) \wedge String(y) \wedge @Mondial_B:name(x, y) \rightarrow @Mondial_A:Organization(x) \wedge @Mondial_A:name(x, y)$
27	$\forall x, y @Mondial_B:Organization(x) \wedge String(y) \wedge @Mondial_B:abbrev(x, y) \rightarrow @Mondial_A:Organization(x) \wedge @Mondial_A:abbreviation(x, y)$
28	$\forall x, y @Mondial_B:member(x) \wedge @Mondial_B:Country(y) \wedge @Mondial_B:organization(z) \wedge @Mondial_B:country(x, y) \wedge @Mondial_B:org(x, z) \rightarrow @Mondial_A:is_member(x) \wedge @Mondial_A:country(x, y) \wedge @Mondial_A:organization(x, z)$
29	$\forall x, y @Mondial_B:member(x) \wedge String(y) \wedge @Mondial_B:type(x, y) \rightarrow @Mondial_A:is_member(x) \wedge @Mondial_A:type(x, y)$
30	$\forall x, y @Mondial_B:Mountain(x) \wedge String(y) \wedge @Mondial_B:name(x, y) \rightarrow @Mondial_A:Mountain(x) \wedge @Mondial_A:name(x, y)$
31	$\forall x, y @Mondial_B:Mountain(x) \wedge String(y) \wedge @Mondial_B:height(x, y) \rightarrow @Mondial_A:Mountain(x) \wedge @Mondial_A:height(x, y)$
30	$\forall x, y @Mondial_B:Mountain(x) \wedge String(y) \wedge @Mondial_B:latitute(x, y) \rightarrow @Mondial_A:Mountain(x) \wedge @Mondial_A:CoordinatesLatitude(x, y)$
31	$\forall x, y @Mondial_B:Mountain(x) \wedge String(y) \wedge @Mondial_B:longitute(x, y) \rightarrow @Mondial_A:Mountain(x) \wedge @Mondial_A:CoordinatesLongitute(x, y)$
32	$\forall x, y @Mondial_B:desert(x) \wedge String(y) \wedge @Mondial_B:name(x, y) \rightarrow @Mondial_A:desert(x) \wedge @Mondial_A:name(x, y)$
33	$\forall x, y @Mondial_B:desert(x) \wedge String(y) \wedge @Mondial_B:area(x, y) \rightarrow @Mondial_A:desert(x) \wedge @Mondial_A:area(x, y)$

Table 6: Mappings From Mondial B to mondial A Databases: Part2

Index	Rule
34	$\forall x, y \text{ @Mondial_B:island}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_B:name}(x, y) \rightarrow \text{@Mondial_A:island}(x) \wedge$ $\text{@Mondial_A:name}(x, y)$
35	$\forall x, y \text{ @Mondial_B:island}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_B:area}(x, y) \rightarrow \text{@Mondial_A:island}(x) \wedge$ $\text{@Mondial_A:area}(x, y)$
36	$\forall x, y \text{ @Mondial_B:island}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_B:longitude}(x, y) \rightarrow \text{@Mondial_A:island}(x) \wedge$ $\text{@Mondial_A:CoordinatesLong}(x, y)$
37	$\forall x, y \text{ @Mondial_B:island}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_B:latitude}(x, y) \rightarrow \text{@Mondial_A:island}(x) \wedge$ $\text{@Mondial_A:CoordinatesLat}(x, y)$
38	$\forall x, y \text{ @Mondial_B:lake}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_B:name}(x, y) \rightarrow \text{@Mondial_A:lake}(x) \wedge$ $\text{@Mondial_A:name}(x, y)$
39	$\forall x, y \text{ @Mondial_B:lake}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_B:area}(x, y) \rightarrow \text{@Mondial_A:lake}(x) \wedge$ $\text{@Mondial_A:area}(x, y)$
40	$\forall x, y \text{ @Mondial_B:sea}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_B:name}(x, y) \rightarrow \text{@Mondial_A:sea}(x) \wedge$ $\text{@Mondial_A:name}(x, y)$
41	$\forall x, y \text{ @Mondial_B:sea}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_B:depth}(x, y) \rightarrow \text{@Mondial_A:sea}(x) \wedge$ $\text{@Mondial_A:depth}(x, y)$
42	$\forall x, y \text{ @Mondial_B:river}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_B:name}(x, y) \rightarrow \text{@Mondial_A:river}(x) \wedge$ $\text{@Mondial_A:name}(x, y)$
43	$\forall x, y \text{ @Mondial_B:river}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_B:lake}(x, y) \rightarrow \text{@Mondial_A:river}(x) \wedge$ $\text{@Mondial_A:lake}(x, y)$
44	$\forall x, y \text{ @Mondial_B:river}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_B:sea}(x, y) \rightarrow \text{@Mondial_A:river}(x) \wedge$ $\text{@Mondial_A:sea}(x, y)$
45	$\forall x, y \text{ @Mondial_B:river}(x) \wedge \text{String}(y) \wedge$ $\text{@Mondial_B:length}(x, y) \rightarrow \text{@Mondial_A:river}(x) \wedge$ $\text{@Mondial_A:length}(x, y)$
46	$\forall x, y \text{ @Mondial_B:mountain_located}(x) \wedge \text{@Mondial_B:mountain}(y) \wedge$ $\text{@Mondial_B:country}(z) \wedge \text{@Mondial_B:mountain}(x, y) \wedge \text{@Mondial_B:country}(x, z)$ $\rightarrow \text{@Mondial_A:geo_mountain}(x) \wedge \text{@Mondial_A:mountain}(x, y) \wedge \text{@Mondial_A:country}(x, z)$ $\wedge \text{@Mondial_A:mountain}(y) \wedge \text{@Mondial_A:country}(z)$
47	$\forall x, y \text{ @Mondial_B:lake_located}(x) \wedge \text{@Mondial_B:lake}(y) \wedge$ $\text{@Mondial_B:country}(z) \wedge \text{@Mondial_B:lake}(x, y) \wedge \text{@Mondial_B:country}(x, z)$ $\rightarrow \text{@Mondial_A:geo_lake}(x) \wedge \text{@Mondial_A:lake}(x, y) \wedge \text{@Mondial_A:country}(x, z)$ $\wedge \text{@Mondial_A:lake}(y) \wedge \text{@Mondial_A:country}(z)$

Table 7: Mappings From Mondial B to mondial A Databases: Part3

Index	Rule
48	$\forall x, y \text{ @Mondial_B:desert_located}(x) \wedge \text{ @Mondial_B:desert}(y) \wedge$ $\text{ @Mondial_B:country}(z) \wedge \text{ @Mondial_B:desert}(x, y) \wedge \text{ @Mondial_B:country}(x, z)$ $\rightarrow \text{ @Mondial_A:geo_desert}(x) \wedge \text{ @Mondial_A:desert}(x, y) \wedge \text{ @Mondial_A:country}(x, z)$ $\wedge \text{ @Mondial_A:desert}(y) \wedge \text{ @Mondial_A:country}(z)$
49	$\forall x, y \text{ @Mondial_B:sea_located}(x) \wedge \text{ @Mondial_B:sea}(y) \wedge$ $\text{ @Mondial_B:country}(z) \wedge \text{ @Mondial_B:sea}(x, y) \wedge \text{ @Mondial_B:country}(x, z)$ $\rightarrow \text{ @Mondial_A:geo_sea}(x) \wedge \text{ @Mondial_A:sea}(x, y) \wedge \text{ @Mondial_A:country}(x, z)$ $\wedge \text{ @Mondial_A:sea}(y) \wedge \text{ @Mondial_A:country}(z)$
50	$\forall x, y \text{ @Mondial_B:river_located}(x) \wedge \text{ @Mondial_B:river}(y) \wedge$ $\text{ @Mondial_B:country}(z) \wedge \text{ @Mondial_B:river}(x, y) \wedge \text{ @Mondial_B:country}(x, z)$ $\rightarrow \text{ @Mondial_A:geo_river}(x) \wedge \text{ @Mondial_A:river}(x, y) \wedge \text{ @Mondial_A:country}(x, z)$ $\wedge \text{ @Mondial_A:river}(y) \wedge \text{ @Mondial_A:country}(z)$
51	$\forall x, y \text{ @Mondial_B:island_located}(x) \wedge \text{ @Mondial_B:island}(y) \wedge$ $\text{ @Mondial_B:country}(z) \wedge \text{ @Mondial_B:island}(x, y) \wedge \text{ @Mondial_B:country}(x, z)$ $\rightarrow \text{ @Mondial_A:geo_island}(x) \wedge \text{ @Mondial_A:island}(x, y) \wedge \text{ @Mondial_A:country}(x, z)$ $\wedge \text{ @Mondial_A:island}(y) \wedge \text{ @Mondial_A:country}(z)$

Table 8: Mappings From Mondial B to mondial A Databases: Part4