

Index	Rule
1	$\forall x, y \text{ @Amalgam_A:InProceedings}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:title}(x, y) \rightarrow \text{@Amalgam_B:titles}(x) \wedge$ $\text{@Amalgam_B:title}(x, y)$
2	$\forall x, y \text{ @Amalgam_A:InProceedings}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:month}(x, y) \rightarrow \text{@Amalgam_B:months}(x) \wedge$ $\text{@Amalgam_B:month}(x, y)$
3	$\forall x, y \text{ @Amalgam_A:InProceedings}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:year}(x, y) \rightarrow \text{@Amalgam_B:years}(x) \wedge$ $\text{@Amalgam_B:year}(x, y)$
4	$\forall x, y \text{ @Amalgam_A:InProceedings}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:pages}(x, y) \rightarrow \text{@Amalgam_B:pages}(x) \wedge$ $\text{@Amalgam_B:pgrange}(x, y)$
5	$\forall x, y \text{ @Amalgam_A:InProceedings}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:vol}(x, y) \rightarrow \text{@Amalgam_B:volums}(x) \wedge$ $\text{@Amalgam_B:volNum}(x, y)$
6	$\forall x, y \text{ @Amalgam_A:InProceedings}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:num}(x, y) \rightarrow \text{@Amalgam_B:numbers}(x) \wedge$ $\text{@Amalgam_B:num}(x, y)$
7	$\forall x, y \text{ @Amalgam_A:InProceedings}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:class}(x, y) \rightarrow \text{@Amalgam_B:numbers}(x) \wedge$ $\text{@Amalgam_B:num}(x, y)$
8	$\forall x, y \text{ @Amalgam_A:InProceedings}(x) \wedge \text{@Amalgam_A:author}(y) \wedge \text{String}(z) \wedge \text{name}(y, z)$ $\text{@Amalgam_A:InprocPublished}(x, y) \rightarrow \text{@Amalgam_B:author}(x) \wedge$ $\text{@Amalgam_B:autnm}(x, z)$
9	$\forall x, y \text{ @Amalgam_A:Article}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:title}(x, y) \rightarrow \text{@Amalgam_B:titles}(x) \wedge$ $\text{@Amalgam_B:title}(x, y)$
10	$\forall x, y \text{ @Amalgam_A:Article}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:month}(x, y) \rightarrow \text{@Amalgam_B:months}(x) \wedge$ $\text{@Amalgam_B:month}(x, y)$
11	$\forall x, y \text{ @Amalgam_A:Article}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:year}(x, y) \rightarrow \text{@Amalgam_B:years}(x) \wedge$ $\text{@Amalgam_B:year}(x, y)$
12	$\forall x, y \text{ @Amalgam_A:Article}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:pages}(x, y) \rightarrow \text{@Amalgam_B:pages}(x) \wedge$ $\text{@Amalgam_B:pgrange}(x, y)$
13	$\forall x, y \text{ @Amalgam_A:Article}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:vol}(x, y) \rightarrow \text{@Amalgam_B:volums}(x) \wedge$ $\text{@Amalgam_B:volNum}(x, y)$
14	$\forall x, y \text{ @Amalgam_A:Article}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:num}(x, y) \rightarrow \text{@Amalgam_B:numbers}(x) \wedge$ $\text{@Amalgam_B:num}(x, y)$
15	$\forall x, y \text{ @Amalgam_A:Article}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:class}(x, y) \rightarrow \text{@Amalgam_B:numbers}(x) \wedge$ $\text{@Amalgam_B:num}(x, y)$
16	$\forall x, y \text{ @Amalgam_A:Article}(x) \wedge \text{@Amalgam_A:author}(y) \wedge \text{String}(z) \wedge \text{name}(y, z)$ $\text{@Amalgam_A:articlePublished}(x, y) \rightarrow \text{@Amalgam_B:author}(x) \wedge$ $\text{@Amalgam_B:autnm}(x, z)$

Table 1: Mappings From Amalgam A to Amalgam B Databases: Part 1

Index	Rule
17	$\forall x, y @Amalgam_A:techReport(x) \wedge String(y) \wedge @Amalgam_A:title(x, y) \rightarrow @Amalgam_B:titles(x) \wedge @Amalgam_B:title(x, y)$
18	$\forall x, y @Amalgam_A:techReport(x) \wedge String(y) \wedge @Amalgam_A:month(x, y) \rightarrow @Amalgam_B:months(x) \wedge @Amalgam_B:month(x, y)$
19	$\forall x, y @Amalgam_A:techReport(x) \wedge String(y) \wedge @Amalgam_A:year(x, y) \rightarrow @Amalgam_B:years(x) \wedge @Amalgam_B:year(x, y)$
20	$\forall x, y @Amalgam_A:techReport(x) \wedge String(y) \wedge @Amalgam_A:pages(x, y) \rightarrow @Amalgam_B:pages(x) \wedge @Amalgam_B:pgrange(x, y)$
21	$\forall x, y @Amalgam_A:techReport(x) \wedge String(y) \wedge @Amalgam_A:vol(x, y) \rightarrow @Amalgam_B:volums(x) \wedge @Amalgam_B:volNum(x, y)$
22	$\forall x, y @Amalgam_A:techReport(x) \wedge String(y) \wedge @Amalgam_A:num(x, y) \rightarrow @Amalgam_B:numbers(x) \wedge @Amalgam_B:num(x, y)$
23	$\forall x, y @Amalgam_A:techReport(x) \wedge String(y) \wedge @Amalgam_A:class(x, y) \rightarrow @Amalgam_B:numbers(x) \wedge @Amalgam_B:num(x, y)$
24	$\forall x, y @Amalgam_A:techReport(x) \wedge @Amalgam_A:author(y) \wedge String(z) \wedge name(y, z) \wedge @Amalgam_A:TechPublished(x, y) \rightarrow @Amalgam_B:author(x) \wedge @Amalgam_B:autnm(x, z)$
25	$\forall x, y @Amalgam_A:Book(x) \wedge String(y) \wedge @Amalgam_A:title(x, y) \rightarrow @Amalgam_B:titles(x) \wedge @Amalgam_B:title(x, y)$
26	$\forall x, y @Amalgam_A:Book(x) \wedge String(y) \wedge @Amalgam_A:month(x, y) \rightarrow @Amalgam_B:months(x) \wedge @Amalgam_B:month(x, y)$
27	$\forall x, y @Amalgam_A:Book(x) \wedge String(y) \wedge @Amalgam_A:year(x, y) \rightarrow @Amalgam_B:years(x) \wedge @Amalgam_B:year(x, y)$
28	$\forall x, y @Amalgam_A:Book(x) \wedge String(y) \wedge @Amalgam_A:pages(x, y) \rightarrow @Amalgam_B:pages(x) \wedge @Amalgam_B:pgrange(x, y)$
29	$\forall x, y @Amalgam_A:Book(x) \wedge String(y) \wedge @Amalgam_A:vol(x, y) \rightarrow @Amalgam_B:volums(x) \wedge @Amalgam_B:volNum(x, y)$
30	$\forall x, y @Amalgam_A:Book(x) \wedge String(y) \wedge @Amalgam_A:num(x, y) \rightarrow @Amalgam_B:numbers(x) \wedge @Amalgam_B:num(x, y)$
31	$\forall x, y @Amalgam_A:Book(x) \wedge String(y) \wedge @Amalgam_A:class(x, y) \rightarrow @Amalgam_B:numbers(x) \wedge @Amalgam_B:num(x, y)$
32	$\forall x, y @Amalgam_A:Book(x) \wedge @Amalgam_A:author(y) \wedge String(z) \wedge name(y, z) \wedge @Amalgam_A:bookPublished(x, y) \rightarrow @Amalgam_B:author(x) \wedge @Amalgam_B:autnm(x, z)$

Table 2: Mappings From Amalgam A to Amalgam B Databases: Part 2

Index	Rule
33	$\forall x, y \text{ @Amalgam_A:InCollection}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:title}(x, y) \rightarrow \text{@Amalgam_B:titles}(x) \wedge$ $\text{@Amalgam_B:title}(x, y)$
34	$\forall x, y \text{ @Amalgam_A:InCollection}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:month}(x, y) \rightarrow \text{@Amalgam_B:months}(x) \wedge$ $\text{@Amalgam_B:month}(x, y)$
35	$\forall x, y \text{ @Amalgam_A:InCollection}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:year}(x, y) \rightarrow \text{@Amalgam_B:years}(x) \wedge$ $\text{@Amalgam_B:year}(x, y)$
36	$\forall x, y \text{ @Amalgam_A:InCollection}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:pages}(x, y) \rightarrow \text{@Amalgam_B:pages}(x) \wedge$ $\text{@Amalgam_B:pgrange}(x, y)$
37	$\forall x, y \text{ @Amalgam_A:InCollection}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:vol}(x, y) \rightarrow \text{@Amalgam_B:volums}(x) \wedge$ $\text{@Amalgam_B:volNum}(x, y)$
38	$\forall x, y \text{ @Amalgam_A:InCollection}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:num}(x, y) \rightarrow \text{@Amalgam_B:numbers}(x) \wedge$ $\text{@Amalgam_B:num}(x, y)$
39	$\forall x, y \text{ @Amalgam_A:InCollection}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:class}(x, y) \rightarrow \text{@Amalgam_B:numbers}(x) \wedge$ $\text{@Amalgam_B:num}(x, y)$
40	$\forall x, y \text{ @Amalgam_A:InCollection}(x) \wedge \text{@Amalgam_A:author}(y) \wedge \text{String}(z) \wedge \text{name}(y, z)$ $\text{@Amalgam_A:InCollPublished}(x, y) \rightarrow \text{@Amalgam_B:author}(x) \wedge$ $\text{@Amalgam_B:autnm}(x, z)$
41	$\forall x, y \text{ @Amalgam_A:Misc}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:title}(x, y) \rightarrow \text{@Amalgam_B:titles}(x) \wedge$ $\text{@Amalgam_B:title}(x, y)$
42	$\forall x, y \text{ @Amalgam_A:Misc}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:month}(x, y) \rightarrow \text{@Amalgam_B:months}(x) \wedge$ $\text{@Amalgam_B:month}(x, y)$
43	$\forall x, y \text{ @Amalgam_A:Misc}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:year}(x, y) \rightarrow \text{@Amalgam_B:years}(x) \wedge$ $\text{@Amalgam_B:year}(x, y)$
44	$\forall x, y \text{ @Amalgam_A:Misc}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:pages}(x, y) \rightarrow \text{@Amalgam_B:pages}(x) \wedge$ $\text{@Amalgam_B:pgrange}(x, y)$
45	$\forall x, y \text{ @Amalgam_A:Misc}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:vol}(x, y) \rightarrow \text{@Amalgam_B:volums}(x) \wedge$ $\text{@Amalgam_B:volNum}(x, y)$
46	$\forall x, y \text{ @Amalgam_A:Misc}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:num}(x, y) \rightarrow \text{@Amalgam_B:numbers}(x) \wedge$ $\text{@Amalgam_B:num}(x, y)$
47	$\forall x, y \text{ @Amalgam_A:Misc}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_A:class}(x, y) \rightarrow \text{@Amalgam_B:numbers}(x) \wedge$ $\text{@Amalgam_B:num}(x, y)$
48	$\forall x, y \text{ @Amalgam_A:Misc}(x) \wedge \text{@Amalgam_A:author}(y) \wedge \text{String}(z) \wedge \text{name}(y, z)$ $\text{@Amalgam_A:MiscPublished}(x, y) \rightarrow \text{@Amalgam_B:author}(x) \wedge$ $\text{@Amalgam_B:autnm}(x, z)$

Table 3: Mappings From Amalgam A to Amalgam B Databases: Part 3

Index	Rule
49	$\forall x, y @Amalgam_A:Manual(x) \wedge String(y) \wedge @Amalgam_A:title(x, y) \rightarrow @Amalgam_B:titles(x) \wedge @Amalgam_B:title(x, y)$
50	$\forall x, y @Amalgam_A:Manual(x) \wedge String(y) \wedge @Amalgam_A:month(x, y) \rightarrow @Amalgam_B:months(x) \wedge @Amalgam_B:month(x, y)$
51	$\forall x, y @Amalgam_A:Manual(x) \wedge String(y) \wedge @Amalgam_A:year(x, y) \rightarrow @Amalgam_B:years(x) \wedge @Amalgam_B:year(x, y)$
52	$\forall x, y @Amalgam_A:Manual(x) \wedge String(y) \wedge @Amalgam_A:pages(x, y) \rightarrow @Amalgam_B:pages(x) \wedge @Amalgam_B:pgrange(x, y)$
53	$\forall x, y @Amalgam_A:Manual(x) \wedge String(y) \wedge @Amalgam_A:vol(x, y) \rightarrow @Amalgam_B:volums(x) \wedge @Amalgam_B:volNum(x, y)$
54	$\forall x, y @Amalgam_A:Manual(x) \wedge String(y) \wedge @Amalgam_A:num(x, y) \rightarrow @Amalgam_B:numbers(x) \wedge @Amalgam_B:num(x, y)$
55	$\forall x, y @Amalgam_A:Manual(x) \wedge String(y) \wedge @Amalgam_A:class(x, y) \rightarrow @Amalgam_B:numbers(x) \wedge @Amalgam_B:num(x, y)$
56	$\forall x, y @Amalgam_A:Manual(x) \wedge @Amalgam_A:author(y) \wedge String(z) \wedge name(y, z) @Amalgam_A:ManualPublished(x, y) \rightarrow @Amalgam_B:author(x) \wedge @Amalgam_B:autnm(x, z)$
57	$\forall x, y @Amalgam_A:InProcedding(x) \wedge String(y) \wedge @Amalgam_A:bktitle(x, y) \rightarrow \exists z @Amalgam_B:booktitle(z) \wedge @Amalgam_B:allBibs(x) \wedge @Amalgam_B:citbktitle(x, y)$
58	$\forall x, y @Amalgam_A:Article(x) \wedge String(y) \wedge @Amalgam_A:journal(x, y) \rightarrow \exists z @Amalgam_B:Journal(z) \wedge @Amalgam_B:allBibs(x) \wedge @Amalgam_B:citJournal(x, y)$
59	$\forall x, y @Amalgam_A:TechReport(x) \wedge String(y) \wedge @Amalgam_A:inst(x, y) \rightarrow @Amalgam_B:institutions(x) \wedge @Amalgam_B:institNm(x, y)$
60	$\forall x, y @Amalgam_A:Book(x) \wedge String(y) \wedge @Amalgam_A:publisher(x, y) \rightarrow \exists z @Amalgam_B:publisher(z) \wedge @Amalgam_B:allBibs(x) \wedge @Amalgam_B:citPublisher(x, y)$
61	$\forall x, y @Amalgam_A:InCollection(x) \wedge String(y) \wedge @Amalgam_A:bktitle(x, y) \rightarrow \exists z @Amalgam_B:booktitle(z) \wedge @Amalgam_B:allBibs(x) \wedge @Amalgam_B:citbktitle(x, y)$

Table 4: Mappings From Amalgam A to Amalgam B Databases: Part 4

Index	Rule
1	$\forall x, y \text{ @Amalgam_B:titles}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_B:title}(x, y) \rightarrow (\text{@Amalgam_A:Inproceeding}(x) \vee$ $\text{@Amalgam_A:Article}(x) \vee \text{@Amalgam_A:techReport}(x) \vee$ $\text{@Amalgam_A:Book}(x) \vee \text{@Amalgam_A:InCollection}(x) \vee$ $\text{@Amalgam_A:misc}(x) \vee \text{@Amalgam_A>manual}(x)) \wedge \text{@Amalgam_A:title}(x, y)$
2	$\forall x, y \text{ @Amalgam_B:years}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_B:year}(x, y) \rightarrow (\text{@Amalgam_A:Inproceeding}(x) \vee$ $\text{@Amalgam_A:Article}(x) \vee \text{@Amalgam_A:techReport}(x) \vee$ $\text{@Amalgam_A:Book}(x) \vee \text{@Amalgam_A:InCollection}(x) \vee$ $\text{@Amalgam_A:misc}(x) \vee \text{@Amalgam_A>manual}(x)) \wedge \text{@Amalgam_A:year}(x, y)$
3	$\forall x, y \text{ @Amalgam_B:months}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_B:month}(x, y) \rightarrow (\text{@Amalgam_A:Inproceeding}(x) \vee$ $\text{@Amalgam_A:Article}(x) \vee \text{@Amalgam_A:techReport}(x) \vee$ $\text{@Amalgam_A:Book}(x) \vee \text{@Amalgam_A:InCollection}(x) \vee$ $\text{@Amalgam_A:misc}(x) \vee \text{@Amalgam_A>manual}(x)) \wedge \text{@Amalgam_A:month}(x, y)$
4	$\forall x, y \text{ @Amalgam_B:pages}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_B:pgrange}(x, y) \rightarrow (\text{@Amalgam_A:Inproceeding}(x) \vee$ $\text{@Amalgam_A:Article}(x) \vee \text{@Amalgam_A:techReport}(x) \vee$ $\text{@Amalgam_A:Book}(x) \vee \text{@Amalgam_A:InCollection}(x) \vee$ $\text{@Amalgam_A:misc}(x) \vee \text{@Amalgam_A>manual}(x)) \wedge \text{@Amalgam_A:pages}(x, y)$
5	$\forall x, y \text{ @Amalgam_B:notes}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_B:note}(x, y) \rightarrow (\text{@Amalgam_A:Inproceeding}(x) \vee$ $\text{@Amalgam_A:Article}(x) \vee \text{@Amalgam_A:techReport}(x) \vee$ $\text{@Amalgam_A:Book}(x) \vee \text{@Amalgam_A:InCollection}(x) \vee$ $\text{@Amalgam_A:misc}(x) \vee \text{@Amalgam_A>manual}(x)) \wedge \text{@Amalgam_A:note}(x, y)$
6	$\forall x, y \text{ @Amalgam_B:volumns}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_B:volNum}(x, y) \rightarrow (\text{@Amalgam_A:Inproceeding}(x) \vee$ $\text{@Amalgam_A:Article}(x) \vee \text{@Amalgam_A:techReport}(x) \vee$ $\text{@Amalgam_A:Book}(x) \vee \text{@Amalgam_A:InCollection}(x) \vee$ $\text{@Amalgam_A:misc}(x) \vee \text{@Amalgam_A>manual}(x)) \wedge \text{@Amalgam_A:vol}(x, y)$
7	$\forall x, y \text{ @Amalgam_B:numbers}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_B:number}(x, y) \rightarrow (\text{@Amalgam_A:Inproceeding}(x) \vee$ $\text{@Amalgam_A:Article}(x) \vee \text{@Amalgam_A:techReport}(x) \vee$ $\text{@Amalgam_A:Book}(x) \vee \text{@Amalgam_A:InCollection}(x) \vee$ $\text{@Amalgam_A:misc}(x) \vee \text{@Amalgam_A>manual}(x)) \wedge \text{@Amalgam_A:number}(x, y)$
8	$\forall x, y \text{ @Amalgam_B:institutions}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_B:instNm}(x, y) \rightarrow \text{@Amalgam_A:techReport}(x) \wedge$ $\text{@Amalgam_A:inst}(x, y)$
9	$\forall x, y \text{ @Amalgam_B:authors}(x) \wedge \text{String}(y) \wedge$ $\text{@Amalgam_B:autNm}(x, y) \rightarrow (\text{@Amalgam_A:Inproceeding}(x) \wedge$ $\text{@Amalgam_A:InproPublished}(x, y)) \vee (\text{@Amalgam_A:Article}(x) \wedge$ $\text{@Amalgam_A:ArticlePublished}(x, y)) \vee (\text{@Amalgam_A:Incollection}(x) \wedge$ $\text{@Amalgam_A:InCollPublished}(x, y)) \vee (\text{@Amalgam_A:Book}(x) \wedge$ $\text{@Amalgam_A:BookPublished}(x, y)) \vee (\text{@Amalgam_A:misc}(x) \wedge$ $\text{@Amalgam_A:miscPublished}(x, y)) \vee (\text{@Amalgam_A:techReport}(x) \wedge$ $\text{@Amalgam_A:techPublished}(x, y)) \vee (\text{@Amalgam_A>manual}(x) \wedge$ $\text{@Amalgam_A>manualPublished}(x, y))$
10	$\forall x, y \text{ @Amalgam_B:publisher}(x) \wedge \text{@Amalgam_B:allBibs}(y) \wedge$ $\text{@Amalgam_B:citPublisher}(x, y) \rightarrow \text{@Amalgam_A:Book}(x) \wedge$ $\text{@Amalgam_A:publisher}(x, y)$
11	$\forall x, y \text{ @Amalgam_B:journal}(x) \wedge \text{@Amalgam_B:allBibs}(y) \wedge$ $\text{@Amalgam_B:citJournal}(x, y) \rightarrow \text{@Amalgam_A:Article}(x) \wedge$ $\text{@Amalgam_A:journal}(x, y)$
12	$\forall x, y \text{ @Amalgam_B:booktitle}(x) \wedge \text{@Amalgam_B:allBibs}(y) \wedge$ $\text{@Amalgam_B:citbktitle}(x, y) \rightarrow (\text{@Amalgam_A:InProceeding}(x) \wedge$ $\text{@Amalgam_A:bktitle}(x, y)) \vee (\text{@Amalgam_A:InCollection}(x) \wedge$ $\text{@Amalgam_A:bktitle}(x, y))$

Table 5: Mappings From Amalgam B to Amalgam A Databases