Report 1 - ReadMore Community Library Catalogue

UNF
CATALOGUE(cat_call_no, cat_title, (author_id, author_name) , (subject_id, subject_desc), publisher_id, publisher_name, cat_content, cat_publication_year, edition, cat_no_pages, cat_lang, cat_note, (isbn_no, isbn_type))

Repeating Groups Identified:
- isbn_no, isbn_type
- author_id, author_name
- subject_id, subject_desc

1NF
CATALOGUE(cat_call_no, cat_title, cat_content, cat_publication_year, cat_no_pages, cat_lang, cat_note, publisher_id, publisher_name)
CK:
- cat_call_no

CATALOGUE_ISBN(cat_call_no, isbn_no, isbn_type)
CK:
- isbn_no, cat_call_no

CATALOGUE_AUTHOR(cat_call_no, author_id, author_name)
CK:
- author_id, cat_call_no

CATALOGUE_SUBJECT(cat_call_no, subject_id, subject_desc)
CK:
- subject_id, cat_call_no

Partial Dependencies Identified:
subject_id -> subject_desc
author_id -> author_name
isbn_no -> isbn_type

2NF
CATALOGUE(cat_call_no, cat_title, cat_content, cat_publication_year, cat_no_pages, cat_lang, cat_note, publisher_id, publisher_name)
CATALOGUE_ISBN(cat_call_no, isbn_no)
CATALOGUE_AUTHOR(cat_call_no, author_id)
CATALOGUE_SUBJECT(cat_call_no, subject_id)

AUTHOR(<u>author_id</u>, author_name)
SUBJECT(<u>subject_id</u>, subject_desc)
ISBN(<u>isbn_no</u>, isbn_type)

Transitive Dependencies Identified:
publisher_id -> publisher_name

3NF
CATALOGUE(<u>cat_call_no</u>, cat_title, cat_content, cat_publication_year, cat_no_pages, cat_lang, cat_note, publisher_id)
CATALOGUE_ISBN(<u>cat_call_no</u>, <u>isbn_no</u>)
CATALOGUE_AUTHOR(<u>cat_call_no, author_id</u>)
CATALOGUE_SUBJECT(<u>cat_call_no, subject_id</u>)
AUTHOR(<u>author_id</u>, author_name)
SUBJECT(<u>subject_id</u>, subject_desc)
ISBN(<u>isbn_no</u>, isbn_type)
PUBLISHER(<u>publisher_id</u>, publisher_name)

Full Dependencies Identified:
author_id -> author_name
subject_id -> subject_desc
isbn_no -> isbn_type
publisher_id -> publisher_name
cat_call_no -> cat_title, cat_content, cat_publication_year, cat_no_pages, cat_lang, cat_note, publisher_id

Report 2 - ReadMore Community Library Borrowers

UNF
BORROWER(borrower_no, borrower_fname, borrower_lname, borrower_class, borrower_status, (branch_code,branch_name, loan_borrow_datetime, book_copy_id, loan_return_datetime, loan_fine_amnt, loan_fine_paid_date, loan_due_back_date))

Repeating Groups Identified:
branch_code, branch_name, loan_borrow_datetime, book_copy_id, loan_return_datetime, loan_fine_amnt, loan_fine_paid_date, loan_due_back_date

1NF
BORROWER(borrower_no, borrower_fname, borrower_lname, borrower_class, borrower_status)
CK:
- borrower_no

LOAN(borrower_no, branch_code,branch_name, loan_borrow_datetime, book_copy_id, loan_return_datetime, loan_fine_amnt, loan_fine_paid_date, loan_due_back_date)
CK:
- loan_borrow_datetime, borrow_no

Partial Dependencies Identified:
No partial dependencies present

2NF
BORROWER(borrower_no, borrower_fname, borrower_lname, borrower_class, borrower_status)
LOAN(borrower_no, branch_code, loan_borrow_datetime, book_copy_id, loan_fine_amnt, loan_fine_paid_date, loan_return_datetime, loan_due_back_date)
AGENCY_BRANCH(branch_code, branch_name)

Transitive Dependencies Identified:
branch_code -> branch_name

3NF
BORROWER(borrower_no, borrower_fname, borrower_lname, borrower_class, borrower_status)
LOAN(borrower_no, loan_borrow_datetime, book_copy_id, branch_code, loan_return_datetime, loan_due_back_date, loan_fine_amnt, loan_fine_paid_date)

AGENCY_BRANCH(<u>branch_code,</u> branch_name)

Full Dependencies Identified:

borrower_no -> borrower_fname, borrower_lname, borrower_class, borrower_status
borrower_no, loan_borrow_datetime -> book_copy_id, loan_fine_amnt,
loan_fine_paid_date, branch_code, loan_return_datetime, loan_due_back_date
branch_code -> branch_name

Collected 3NF:
1. BORROWER(<u>borrower_no,</u> borrower_fname, borrower_lname, borrower_class, borrower_status)
2. LOAN(<u>borrower_no, loan_borrow_datetime,</u> book_copy_id, loan_return_datetime, branch_code, loan_due_back_date, loan_fine_amnt, loan_fine_paid_date)
3. AGENCY_BRANCH(<u>branch_code,</u> branch_name)
4. CATALOGUE(<u>cat_call_no,</u> cat_title, cat_content, cat_publication_year, cat_no_pages, cat_lang, cat_note, publisher_id)
5. CATALOGUE_ISBN(<u>cat_call_no, isbn_no</u>)
6. CATALOGUE_AUTHOR(<u>cat_call_no, author_id</u>)
7. CATALOGUE_SUBJECT(<u>cat_call_no, subject_id</u>)
8. AUTHOR(<u>author_id,</u> author_name)
9. SUBJECT(<u>subject_id,</u> subject_desc)
10. ISBN(<u>isbn_no,</u> isbn_type)
11. PUBLISHER(<u>publisher_id,</u> publisher_name)

Attribute Synthesis

Join together relations, which have an identical PK: None

Final 3NF Relations:
1. BORROWER(<u>borrower_no,</u> borrower_fname, borrower_lname, borrower_class, borrower_status)
2. LOAN(<u>borrower_no, loan_borrow_datetime,</u> book_copy_id, loan_return_datetime, branch_code, loan_due_back_date, loan_fine_amnt, loan_fine_paid_date)
3. AGENCY_BRANCH(<u>branch_code,</u> branch_name)
4. CATALOGUE(<u>cat_call_no,</u> cat_title, cat_content, cat_publication_year, cat_no_pages, cat_lang, cat_note, publisher_id)
5. CATALOGUE_ISBN(<u>cat_call_no, isbn_no</u>)
6. CATALOGUE_AUTHOR(<u>cat_call_no, author_id</u>)
7. CATALOGUE_SUBJECT(<u>cat_call_no, subject_id</u>)
8. AUTHOR(<u>author_id,</u> author_name)

9. SUBJECT(<u>subject_id</u>, subject_desc)
10. ISBN(<u>isbn_no</u>, isbn_type)
11. PUBLISHER(<u>publisher_id</u>, publisher_name)