

## REPORT1:

### UNF:

CATALOGUE(catal\_ddcno,catal\_title,(author\_id,author\_firstname,author\_lastname),(subject\_id,subject\_desc),catal\_descrip,publisher\_id,publisher\_name,published\_date,catal\_edition,catal\_page\_count,catal\_language,catal\_note,(isbn\_no,isbn\_booktype))

### 1NF:

CATALOGUE(catal\_ddcno,catal\_title,catal\_descrip,publisher\_id,publisher\_name,published\_date,catal\_edition,catal\_page\_count,catal\_language,catal\_note)

### CK:

1. catal\_ddcno

CATALAUTHOR(author\_id,catal\_ddcno,author\_firstname,author\_lastname)

### CK:

1. author\_id, catal\_ddcno

CATALSUBJECT(catal\_ddcno,subject\_id,subject\_desc)

### CK:

1. subject\_id,catal\_ddcno

ISBN(isbn\_no,isbn\_booktype,catal\_ddcno)

### CK:

1. isbn\_no

### Partial Dependencies:

1. author\_id -> author\_firstname,author\_lastname
2. subject\_id ->subject\_desc

2NF:

CATALOGUE(catal\_ddcno,catal\_titile,catal\_descrip,publisher\_id,publisher\_name,published\_date,catal\_edition,catal\_page\_count,catal\_language,catal\_note)

CATALAUTHOR(author\_id,catal\_ddcno)

AUTHOR(author\_id,author\_firstname,author\_lastname)

CATALSUBJECT(catal\_ddcno,subject\_id,subject\_desc)

SUBJECT(subject\_id,subject\_desc)

ISBN(isbn\_no,isbn\_type,catal\_ddcno)

Transitive Dependencies :

1. publisher\_id -> publisher\_name

3NF:

CATALOGUE(catal\_ddcno,catal\_titile,catal\_descrip,publisher\_id,published\_date,catal\_edition,catal\_page\_count,catal\_language,catal\_note)

PUBLISHER(publisher\_id,publisher\_name)

CATALAUTHOR(author\_id,catal\_ddcno)

AUTHOR(author\_id,author\_firstname,author\_lastname)

CATALSUBJECT(catal\_ddcno,subject\_id)

SUBJECT(subject\_id,subject\_desc)

ISBN(isbn\_no,isbn\_type,catal\_ddcno)

Full Dependencies :

1. catal\_ddcno-  
    >catal\_title,catal\_descrip,publisher\_id,published\_date,catal\_edition,catal\_page\_count,catal\_language,catal\_note
2. publisher\_id ->publisher\_name
3. author\_id -> author\_firstname,author\_lastname
4. subject\_id ->subject\_desc
5. isbn\_no -> isbn\_type,catal\_ddcno

REPORT 2:

UNF:

BORROWER(borrower\_no,borrower\_first\_name,borrower\_last\_name,borrower\_class,borrower\_status,(branch\_code,book\_copy\_id,branch\_name,loan\_start\_datetime,loan\_due\_date,loan\_returned\_date,loan\_fine\_amount,loan\_date\_finepaid))

1NF:

BORROWER(borrower\_no,borrower\_first\_name,borrower\_last\_name,borrower\_class,borrower\_status)

CK:

1. borrower\_no

LOAN(branch\_code,book\_copy\_id,loan\_start\_datetime,borrower\_no,branch\_name,loan\_due\_date,loan\_returned\_date,loan\_fine\_amount,loan\_date\_finepaid)

CK's :

1. branch\_code,book\_copy\_id,loan\_start\_datetime

Partial Dependencies:

1. branch\_code -> branch\_name

2NF:

BORROWER(borrower\_no,borrower\_first\_name,borrower\_last\_name,borrower\_class,borrower\_status)

LOAN(branch\_code,book\_copy\_id,loan\_start\_datetime,branch\_name,loan\_due\_date,loan\_returned\_date,loan\_fine\_amount,loan\_date\_finepaid)

BRANCH(branch\_code,branch\_name)

Transitive Dependencies :

None

3NF:

BORROWER(borrower\_no,borrower\_first\_name,borrower\_last\_name,borrower\_class,borrower\_status)

LOAN(branch\_code,book\_copy\_id,loan\_start\_datetime,branch\_name,loan\_due\_date,loan\_returned\_date,loan\_fine\_amount,loan\_date\_finepaid)

BRANCH(branch\_code,branch\_name)

Full Dependencies :

1. borrower\_no-  
     >borrower\_first\_name,borrower\_last\_name,borrower\_class,borrower\_status
2. branch\_code,book\_copy\_id,loan\_start\_datetime-  
     >branch\_name,loan\_due\_date,loan\_returned\_date,loan\_fine\_amount,loan\_date\_finepaid
3. branch\_code ->branch\_name

#### COLLECTED 3NF RELATIONS :

1. CATALOGUE(catal\_ddcno,catal\_titile,publisher\_id,published\_date,catal\_edition,catal\_page\_count,catal\_language,catal\_note)
2. PUBLISHER(publisher\_id,publisher\_name)
3. CATALAUTHOR(author\_id,catal\_ddcno)
4. AUTHOR(author\_id,author\_firstname,author\_lastname)
5. CATALSUBJECT(catal\_ddcno,subject\_id)
6. SUBJECT(subject\_id,subject\_desc)
7. ISBN(isbn\_no,isbn\_type,catal\_ddcno)
8. BORROWER(borrower\_no,borrower\_first\_name,borrower\_last\_name,borrower\_class,borrower\_status)
9. LOAN(branch\_code,book\_copy\_id,loan\_start\_datetime,branch\_name,loan\_due\_date,loan\_returned\_date,loan\_fine\_amount,loan\_date\_finepaid)
10. BRANCH(branch\_code,branch\_name)

Attribute synthesis :

None

FINAL 3NF RELATIONS :

CATALOGUE(catal\_ddcno,catal\_titile,catal\_descrip,publisher\_id,published\_date,catal\_edition,catal\_page\_count,catal\_language,catal\_note)

PUBLISHER(publisher\_id,publisher\_name)

CATALAUTHOR(author\_id,catal\_ddcno)

AUTHOR(author\_id,author\_firstname,author\_lastname)

CATALSUBJECT(catal\_ddcno,subject\_id)

SUBJECT(subject\_id,subject\_desc)

ISBN(isbn\_no,isbn\_type,catal\_ddcno)

BORROWER(borrower\_no,borrower\_first\_name,borrower\_last\_name,borrower\_class,borrower\_status)

LOAN(branch\_code,book\_copy\_id,loan\_start\_datetime,branch\_name,loan\_due\_date,loan\_returned\_date,loan\_fine\_amount,loan\_date\_finepaid)

BRANCH(branch\_code,branch\_name)