Normalization and mapping:

Member:

ID	Fname	Lname	TypeOfMember	PIN	DateBirth	dateJoind	contactNumber	Status	expiry	City	street

Multivalued

ID	contactNumber

ID	Fname	Lname	membertype	PIN	DateBirth	dateJoind	Status	expiry	City	street

Composite attribute is shown in yellow color :

MemberType:

ID	membertype	Fname	Lname	permission	descr

privilege:

PrivilegeNo	nameOfPrivilege	LoanPeriod	MaxItemToBorrow	MaxItemToRenewal

Loans:

LoanNo	status	dateLoaned	dueDate

Fine:

ID	Amount	desc	Status

ShortLoan :

callNo	Date	expiry	membersRequest	status

Book:

ISSN	Author	Publisher	BooksNotes	Status	PhysicsOrElec

SounRecord:

UniqueNumber	location	publisher	descr

Thesis :

callNo	Author	location	descr

Journal:

callNo	availability	title

Room:

RoomNo	Status	duration	Location	type

Online Database:

staff	student

Collection:

SerialNumber	name	Type

Many to many relationships became a separated tables:

loan_and_fine:

loanNo	id

book_and_Journal:

ISSN	callNo

book_and_thesis:

ISSN	callNo

SounRecord:

UniqueNumber	location	publisher	descr

In DBDL:

Book table:

ISBN (id, number, itemNo)

Primary Key id

Alternate Key number

Foreign Key itemNo references Book(itemNo)

ON UPDATE CASCADE, ON DELETE CASCADE

videoRecording table :

Primary Key UniqueNumber

soundsRecording:

Primary Key UniqueNumber

Thesis:

Primary Key callNo

Alternate Key location

Journal:

Primary Key callNo

Alternate Key title

Room:

Primary Key RoomNo

Alternate Key Location

Loan:

Primary Key LoanNo

Fine:

Primary Key id

Foreign Key id references member (id)

ON UPDATE CASCADE, ON DELETE CASCADE

Short Loan:

Primary Key callNo

Online Database

Staff Unique

Student Unique

Collection

Primary Key SerialNumber

Alternate Key name

Member

Primary Key id

Alternate Key name

Member Type

Primary Key id

Alternate Key name

Foreign Key id references member (id)

ON UPDATE CASCADE, ON DELETE CASCADE

Privilege

Primary Key PrivilegeNo

Alternate Key nameOfPrivilege