Assumptions are made at various points since enough information in not available in the question.

Below are the table names with description:

- Role
  It is a master table that consists of following data. Role ID is used to reference in User Table. Maximum Days is how long can the items be issued. Maximum Items is at most how many resources can be issued.

Role_id	Role_name	Maximum_days	Maximum_items
1	Faculty	120	300
2	Graduate	120	150
3	Undergraduate	21	5
4	Guest	10	3

- Department
  Master table. Department ID is referenced in User.

Department_id	Department_name
1	Computer Science
2	Software Engineering
3	Mechanical Engineering
4	Electrical Engineering

- Contact Method
  Master table. Using contact_id in User Contact.

Contact_id	Contact_type
1	Mobile Number
2	Office Number

3	Home Number
4	Home Address
5	Office Address
6	Personal Email
7	Work Email

- **User Contact Details**

This table holds user contact data. Linked with netid in User and contact_id in Contact Method.

Sample Data:

netID	Contact_id	Value	Country (nullable)
Vxk180003	1	1234567890	United States
Vxk180003	5	Civil Lines, Pune	India
Vxk180003	6	Vedantkumar.007@gmail.com	Null
Pxk150009	4	Cavalier Dr, Richardson	United States

- **User**

This table binds all user information. Assuming, Gender will always be Male and Female. When Is_active value is false, it means alumni.

Sample Data:

netID	UTDID	Name	Role_id	Gender	Department_id	Is_active
Vxk180003	123456	Vedant Kumar	2	M	1	True
Jxk170001	543216	John Cole	1	M	1	True
Hxp160041	789456	Jenny Hole	3	F	3	False

- **Resources**

Master data for all kind of available resources in the library. See sample data to know subset of kind of resources in library. Assuming, Fine_per_day and maximum_fine can be fine-tuned depending upon resource type.

Sample Data:

resource_id	Resource_type	Fine_per_day (nullable)	Maximum_fine (nullable)	Is_loanable
1	Paperback Books	.5	50	True
2	e-Books	Null	Null	False
3	Hardbound Books	.5	50	True
4	Magazines	.5	50	True
5	Journals	.25	25	True
6	Rare Books	Null	Null	False
7	Laptop	5	100	True
8	Calculators	2	20	True
9	Manuscripts	Null	Null	False
10	CD	1	20	True
11	DVD	1	20	True

- Composer

This table which consists of all authors of all books, crew and cast of all CDs and DVDs, and even manufacturer of calculator and laptop. An assumption is made that person name is not same with same profession. Set a unique constraint to the combination of name and profession fields.

Sample Data:

Composer_id	Name	Profession (nullable)
1	John Cole	Author
2	David Guetta	Musician

3	Brad Pitt	Actor
4	Sai Ram	Author
5	Barack Obama	Director
6	Donald Trump	Producer
7	Dell	null

- <mark>Publisher</mark>

This table consists of all publishers whose published books are available in the library. If a publisher exists, then it's published book will also exist.

Sample Data:

Publisher_id	Publisher_name
1	Frank publications
2	Safari Online
3	McGraw

- <mark>Genre</mark>

<mark>Master Data</mark> to know all types of available genres in the library. If any type of Genre exists, then a resource must also exist.

Sample Data:

Genre_id	Genre_name
1	Fiction
2	Non-Fiction
3	Poetry

- <mark>Resource Details</mark>

This table holds the details of every resource available in the library.

An <mark>assumption</mark> is made that ISBN can be different for every edition and each paper type resource has ISBN. A publisher can be changed for every edition but same for each edition. Authors can be changed for every edition. Publication Date is same for each edition. All books with same ISBN are kept together.

Sample Data:

ISBN	Resource_id	title	Edition (nullable)	Publication_date	Publisher_id	Available_Copies	Dewey_decimal_system_number (nullable)	Congress_catalogue_number	Pages	Item_type	description
"123456"	3	Introduction to Algorithm	2	08-28-2010	1	5	XXXX	ZZZZ	500	1	For CS folks

- <mark>User Loaned Details</mark>

This table holds information when a resource is issued to a user. Fine is calculated and updated after each day by scheduling. Due_date is set based on current_date + maximum_days of role table. An <mark>assumption</mark> is made that multiple copies of the same book cannot be issued to the same user.

Sample Data:

ISBN	Netid	Due_date	Fine (derived attribute)
"123456"	Vxk180003	12/12/2019	Null
"541245"	Pxk180012	07/07/2019	50

- <mark>Resource Composer</mark>

This table maps the author of the book. An <mark>assumption</mark> is made that title of the book is unique.

Sample Data:

Composer_id	title
1	"123456"
2	"456123"
3	Star Wars

- <mark>Digital Resource Details</mark>

This table is used to maintain details of CD, DVD resources. The parent entity is Resources.

Sample Data:

Movie_title	Resource_id	Running_time	Year	Genre_id	Storyline	Congress_cat_num
Star Wars	10	115	1996	2	"Alien War"	xxxxx
Iron Man	11	150	1999	3	"Super hero"	xxxxx