DBMS LAB-1

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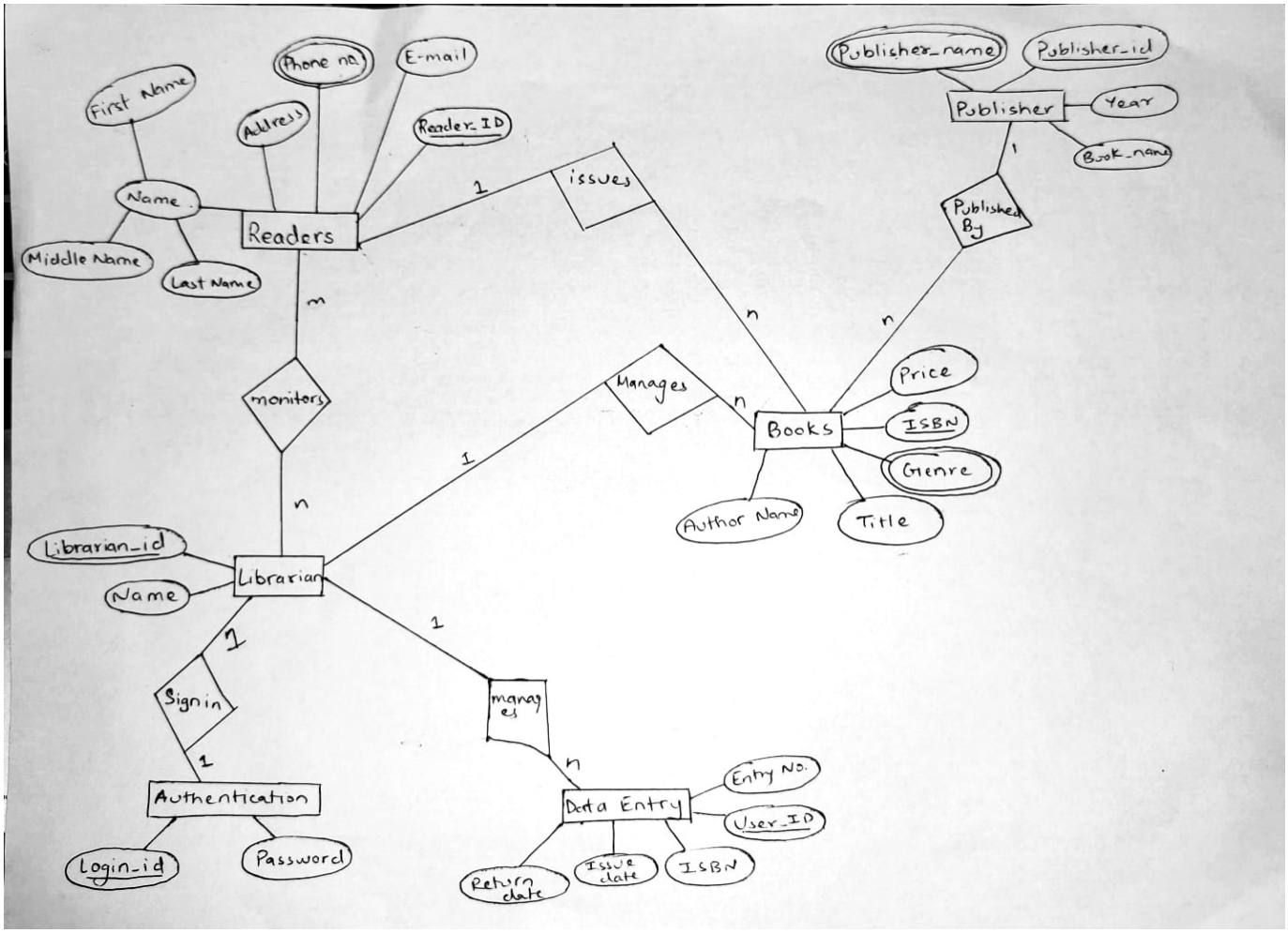
E-R Diagram



Assumptions

1. We have taken a total of 6 entities :
    - Librarian
    - Readers
    - Authentication/Verification
    - Books
    - Publishers
    - Data Entry
2. From all the attributes of every entity, only the *name* attribute of *Readers* entity is a compound attribute and the *phone number* attribute of *Readers* entity, Publishers_name attribute of Publisher entity, Genre attribute of Books are multivalued attributes. Rest all are simple attributes.
3. Relationships :
    - The relationship *issues* between Readers and Books entity is a one to many relation since, for 1 reader, there can be multiple books issued by him/her but for a particular book only 1 reader can issue it at a given time.
    - The relationship *Monitors* between Readers and Librarian entities is a many to many relation since for 1 reader, there can be multiple librarians who issued different books for that user and similarly for 1 librarian, there can be multiple readers who issued the books.
    - The relationship *Manages* between Librarian and Books entities is an one to many relation since for 1 book there can be only 1 librarian who issued that book to a reader while for 1 librarian there can be multiple books managed by him/her.
    - The relationship *Manages* between Librarian and Data Entry entities is also one to many relation because for a given data entry, there can be only 1 librarian who did it while for a given librarian, he/she may have done multiple data entries.
    - The relationship *Sign in* between Librarian and Authentication is an one to one relation because for a given authentication, there can be only one librarians using it and for a given authentication, only 1 librarian would have done it.
    - The relationship *Published by* between Publishers and Books is an one to many relation since for a given book there can be only 1 publisher while for a given publisher there can be multiple books

published by him/her.

Q3 a. The candidate keys are :

Table Name	Candidate Key
Authorization	user_id
books	ISBN
data entry	Entry_no.
genre	{ ISBN + Genre }
librarian	librarian_id
monitors	{ librarian_id + reader_id }
phone_no.	{ reader_id + phone_no. }
publisher	{publisher_id + year,publisher_id}
publisher_name	publisher_id
reader	reader_id

Q3 b. Are your tables in the 3nd normal form? If not, upgrade the tables to 2NF and update the database accordingly.

We have already taken care of 1 NF because we did take care of multivalued attributes.

Now since the table is already in 1 NF and all the non-prime attributes are FFD of primary key therefore the table is in 2 NF.

ScreenShots of Entities :

	Table	Action	Rows	Type	Collation	Size	Overhead
☐	authorization	Browse Structure Search Insert Empty Drop	3	InnoDB	latin1_swedish_ci	16.0 KiB	-
☐	books	Browse Structure Search Insert Empty Drop	6	InnoDB	latin1_swedish_ci	16.0 KiB	-
☐	data entry	Browse Structure Search Insert Empty Drop	3	InnoDB	latin1_swedish_ci	16.0 KiB	-
☐	genre	Browse Structure Search Insert Empty Drop	8	InnoDB	latin1_swedish_ci	16.0 KiB	-
☐	librarian	Browse Structure Search Insert Empty Drop	4	InnoDB	latin1_swedish_ci	16.0 KiB	-
☐	monitors	Browse Structure Search Insert Empty Drop	4	InnoDB	latin1_swedish_ci	16.0 KiB	-
☐	phone_no.	Browse Structure Search Insert Empty Drop	6	InnoDB	latin1_swedish_ci	16.0 KiB	-
☐	publisher	Browse Structure Search Insert Empty Drop	6	InnoDB	latin1_swedish_ci	16.0 KiB	-
☐	publisher_name	Browse Structure Search Insert Empty Drop	4	InnoDB	latin1_swedish_ci	16.0 KiB	-
☐	reader	Browse Structure Search Insert Empty Drop	4	InnoDB	latin1_swedish_ci	16.0 KiB	-
	10 tables	Sum	48	InnoDB	latin1_swedish_ci	160.0 KiB	0 B

				user_id	password	librarian_id
☐	Edit	Copy	Delete	user_1	abcd0	1
☐	Edit	Copy	Delete	user_2	abcd1	2
☐	Edit	Copy	Delete	user_3	abcd2	3

Showing rows 0 - 5 (6 total, Query took 0.0004 seconds.)

```
SELECT * FROM `books`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

Extra options

	ISBN	Author_name	title	price	Reader_id	publisher_id	librarian_id
Edit Copy Delete	123456788	Tatvam	Verity	599	3	4	3
Edit Copy Delete	123456789	JK Rowling	Harry Potter	400	1	1	1
Edit Copy Delete	1234567890	Yash Maniya	Flying Kites	500	1	2	1
Edit Copy Delete	1234567896	Ruthvik K.	Samson and Hues	349	4	6	3
Edit Copy Delete	1234567897	Ruthvik K.	Lagaan	399	2	5	3
Edit Copy Delete	1234567899	Yash Maniya	The Jungle Book	400	2	3	2

```
SELECT * FROM `data entry`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

Extra options

	Entry_no.	ISBN	user_id	issue_date	return_date	librarian_id
Edit Copy Delete	1	1234567896	1	12th august	-	1
Edit Copy Delete	2	1234567897	1	14th august	-	1
Edit Copy Delete	3	1234567897	1	-	21st august	2

```
SELECT * FROM `genre`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table

Extra options

ISBN	Genre
1	horror
1	kids
2	thriller
3	romance
3	horror
4	kids
5	romance
6	fantasy


SELECT * FROM `librarian`
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Re
Show all
Number of rows:
25
Filter rows:
Searc
Extra options
Librarian_id
name
Edit Copy Delete 1 khushi majmudar
Edit Copy Delete 2 yukta soni
Edit Copy Delete 3 ramu kaderi
Edit Copy Delete 4 manu maniya

```
SELECT * FROM `phone_no.`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table

Extra options

Reader_ID	Phone_No
1	9988776655
1	9988776654
2	9988776255
3	9988771655
3	9988176655
3	9188776655

```
SELECT * FROM `monitors`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table

Extra options

reader_id	librarian_id
1	1
2	2
3	3
4	3

Showing rows 0 - 5 (6 total, Query took 0.0003 seconds.)

```
SELECT * FROM `publisher`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

Extra options

	publisher_id	book_name	Year
Edit Copy Delete	1	Harry Potter	2003
Edit Copy Delete	2	The Jungle Book	2008
Edit Copy Delete	3	Verity	2013
Edit Copy Delete	4	Lagaan	2001
Edit Copy Delete	5	Flying Kites	2015
Edit Copy Delete	6	Samson and Hues	2018

Check all *With selected:* Edit Copy Delete Export

Showing rows 0 - 3 (4 total, Query took 0.0007 seconds.)

```
SELECT * FROM `publisher_name`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table

Extra options

Publisher_id	Publisher_name
1	ram shyam publication
2	ramesh publication
3	shyamesh publication
4	ruthvik publication

Show all | Number of rows: 25 Filter rows: Search this table

Showing rows 0 - 3 (4 total, Query took 0.0004 seconds.)

```
SELECT * FROM `reader`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

Extra options

	reader_id	email	name	address
Edit Copy Delete	1	abc@gmail.com	abc	45 - Huston appt., NY - 105436
Edit Copy Delete	2	aaa@gmail.com	aaa	23 - James appt., NY - 165402
Edit Copy Delete	3	ccc@gmail.com	ccc	158 - Pittsberg soc., NY - 189765
Edit Copy Delete	4	xyz@gmail.com	xyz	244 - Riverden soc., NY - 845412

Check all *With selected:* Edit Copy Delete Export

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None