2. For the following relations
   Members (mid, name, design, age)
   Books (Bid, Btitle, BAuthor, Bpublisher, Bprice)
   Reserves (mid, Bid, date)
   Where Bid is book identification, Btitle is Book title, Bpublisher is book publisher, Bprice is Book price, mid is Members identification, and Desig is designation.

   a)Create the above tables in MySQL

Commands:

- create table members(mid int primary key, name varchar(30), design varchar(40), age int);

```
MariaDB [database_two]> desc members;
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| mid    | int(11)     | NO   | PRI | NULL    |       |
| name   | varchar(30) | YES  |     | NULL    |       |
| design | varchar(40) | YES  |     | NULL    |       |
| age    | int(11)     | YES  |     | NULL    |       |
+--------+-------------+------+-----+---------+-------+
4 rows in set (0.015 sec)
```

- create table books(Bid int primary key, Btitle varchar(40), BAuther varchar(50), Bpublisher varchar(50), Bprice decimal(10,2));

```
MariaDB [database_two]> desc books;
+------------+---------------+------+-----+---------+-------+
| Field      | Type          | Null | Key | Default | Extra |
+------------+---------------+------+-----+---------+-------+
| Bid        | int(11)       | NO   | PRI | NULL    |       |
| Btitle     | varchar(40)   | YES  |     | NULL    |       |
| BAuther    | varchar(50)   | YES  |     | NULL    |       |
| Bpublisher | varchar(50)   | YES  |     | NULL    |       |
| Bprice     | decimal(10,2) | YES  |     | NULL    |       |
+------------+---------------+------+-----+---------+-------+
5 rows in set (0.015 sec)
```

- create table Reserves(mid int, Bid int, date DATE, primary key(mid,Bid), foreign key(mid) references members(mid), foreign key(Bid) references books(Bid));

```
MariaDB [database_two]> desc reserves;
+-------+---------+------+-----+---------+-------+
| Field | Type    | Null | Key | Default | Extra |
+-------+---------+------+-----+---------+-------+
| mid   | int(11) | NO   | PRI | NULL    |       |
| Bid   | int(11) | NO   | PRI | NULL    |       |
| date  | date    | YES  |     | NULL    |       |
+-------+---------+------+-----+---------+-------+
3 rows in set (0.017 sec)
```

b)Insert any three records in each of the above tables and display them.

Commands:

- insert into members values(1, "Arjun Rokka", "Professor", 40),(2, "Arun Chaudary", "Student", 25),(3, "Aayush Gautam", "Professor",35);

```
MariaDB [database_two]> select * from members;
+-----+--------------+-----------+------+
| mid | name         | design    | age  |
+-----+--------------+-----------+------+
|   1 | Arjun Rokka  | Professor |   46 |
|   2 | Arun Chaudary | Student  |   25 |
|   3 | Aayush Gautam | Professor |   35 |
+-----+--------------+-----------+------+
3 rows in set (0.000 sec)
```

- insert into books values(101, "Database System", "Raghu Lal", "Read More", 2500),(102, "Introduction to Computer", "Gyani Ray", "KEC", 500),(103, "Think and Grow Rich", "Oliver Napoleon", "Good Readers",1200);

```
MariaDB [database_two]> select * from books;
+-----+-------------------------+----------------+-----------------+---------+
| Bid | Btitle                  | BAuther        | Bpublisher      | Bprice  |
+-----+-------------------------+----------------+-----------------+---------+
| 101 | Database System         | Raghu Lal      | Read More       | 2500.00 |
| 102 | Introduction to Computer | Gyani Ray     | KEC             |  500.00 |
| 103 | Think and Grow Rich     | Oliver Napoleon | Asia Publication | 1200.00 |
+-----+-------------------------+----------------+-----------------+---------+
3 rows in set (0.000 sec)
```

- insert into reserves values(1, 101, '2023-09-12'),(2, 102, '2024-05-31'),(3, 103, '2020-02-25');

```
MariaDB [database_two]> select * from reserves;
+-----+-----+------------+
| mid | Bid | date       |
+-----+-----+------------+
|   1 | 101 | 2023-09-12 |
|   2 | 102 | 2024-05-31 |
|   3 | 103 | 2020-02-25 |
+-----+-----+------------+
3 rows in set (0.001 sec)
```

c)Write the SQL for each of the following queries.

a) List the titles of books reserved by professors older than 45 years

Commands:

- select B.Btitle from books B join reserves R on B.Bid=R.Bid join members M on M.mid=R.mid where M.design= "Professor" and M.age>45;

```
MariaDB [database_two]> select B.Btitle from books B join reserves R on B.Bid=R.Bid
 join members M on M.mid=R.mid where M.design= "Professor" and M.age>45;
+-----------------+
| Btitle          |
+-----------------+
| Database System |
+-----------------+
1 row in set (0.001 sec)
```

b) Find IDs of members who have not reserved books costing more than Rs. 500.

- select M.mid from members M where M.mid not in (select R.mid from reserves R join books B on R.Bid=B.Bid where B.Bprice>500);

```
MariaDB [database_two]> select M.mid from members M where M.mid not in (select R.mi
d from reserves R join books B on R.Bid=B.Bid where B.Bprice>500);
+-----+
| mid |
+-----+
|   2 |
+-----+
1 row in set (0.001 sec)
```

c) Find the author and title of books reserved on 27-May-2007.

- select B.BAuther, B.Btitle from books B join reserves R on B.Bid = R.Bid where R.date = '2007-05-27';

```
MariaDB [database_two]> select M.mid from members M where M.mid not in (select
R.mid from reserves R join books B on R.Bid=B.Bid where B.Bprice>500);
+-----+
| mid |
+-----+
|   2 |
+-----+
1 row in set (0.001 sec)
```

d) Find the names of members who have reserved all books.

- select M.name from members M where not exists(select B.Bid from books B where not exists(select R.Bid from reserves R where R.mid=M.mid and R.Bid=B.Bid));

```
MariaDB [database_two]> select M.name from members M where not exists(select B.
Bid from books B where not exists(select R.Bid from reserves R where R.mid=M.mi
d and R.Bid=B.Bid));
Empty set (0.001 sec)
```

e) Update the price of all the books by Rs 100 whose publisher name is ‘Asia Publication’

- update books set Bprice=Bprice+100 where Bpublisher = 'Asia Publication';

```
MariaDB [database_two]> select * from books;
+-----+-------------------------+----------------+------------------+---------+
| Bid | Btitle                  | BAuther        | Bpublisher       | Bprice  |
+-----+-------------------------+----------------+------------------+---------+
| 101 | Database System         | Raghu Lal      | Read More        | 2500.00 |
| 102 | Introduction to Computer | Gyani Ray     | KEC              |  500.00 |
| 103 | Think and Grow Rich     | Oliver Napoleon | Asia Publication | 1300.00 |
+-----+-------------------------+----------------+------------------+---------+
3 rows in set (0.000 sec)
```

f) Delete the records of all members whose age is less than 18.

- delete from members where age<18;

```
MariaDB [database_two]> select * from members;
+-----+---------------+-----------+------+
| mid | name          | design    | age  |
+-----+---------------+-----------+------+
|   1 | Arjun Rokka   | Professor |   46 |
|   2 | Arun Chaudary | Student   |   25 |
|   3 | Aayush Gautam | Professor |   35 |
+-----+---------------+-----------+------+
3 rows in set (0.000 sec)
```