CC4057 Introduction to Information Systems

Lab work – week 4

1. Create a database named *movie_rental*.
2. Create the following tables in the database

genres

genreID	INT	PRIMARY KEY, AUTO_INCREMENT
name	VARCHAR(20)	NOT NULL

```
MariaDB [(none)]> use movie_rental;
Database changed
MariaDB [movie_rental]> desc genres;
+---------+-------------+------+-----+---------+----------------+
| Field   | Type        | Null | Key | Default | Extra          |
+---------+-------------+------+-----+---------+----------------+
| genreID | int(11)     | NO   | PRI | NULL    | auto_increment |
| name    | varchar(20) | NO   |     | NULL    |                |
+---------+-------------+------+-----+---------+----------------+
2 rows in set (0.053 sec)
```

movies

movieID	INT	PRIMARY KEY, AUTO_INCREMENT
name	VARCHAR(30)	NOT NULL
releaseDate	DATE	NOT NULL
genre	INT	FOREIGN KEY, NOT NULL
pricePerDay	INT	NOT NULL

*The foreign key *genre* references to the *genreID* column in the *genres* table

```
MariaDB [movie_rental]> desc movies;
+-------------+-------------+------+-----+---------+----------------+
| Field       | Type        | Null | Key | Default | Extra          |
+-------------+-------------+------+-----+---------+----------------+
| moviesID    | int(11)     | NO   | PRI | NULL    | auto_increment |
| name        | varchar(30) | NO   |     | NULL    |                |
| releaseDate | date        | NO   |     | NULL    |                |
| genreID     | int(11)     | YES  | MUL | NULL    |                |
| pricePerDay | int(11)     | NO   |     | NULL    |                |
+-------------+-------------+------+-----+---------+----------------+
5 rows in set (0.024 sec)
```

clients

clientID	INT	PRIMARY KEY, AUTO_INCREMENT
firstName	VARCHAR(20)	NOT NULL
lastName	VARCHAR(20)	
dob	DATE	
phone	VARCHAR(20)	NOT NULL

```
MariaDB [movie_rental]> desc clients;
+-----------+-------------+------+-----+---------+----------------+
| Field     | Type        | Null | Key | Default | Extra          |
+-----------+-------------+------+-----+---------+----------------+
| clientID  | int(11)     | NO   | PRI | NULL    | auto_increment |
| firstName | varchar(20) | NO   |     | NULL    |                |
| lastName  | varchar(20) | YES  |     | NULL    |                |
| DOB       | date        | YES  |     | NULL    |                |
| phone     | varchar(20) | NO   |     | NULL    |                |
+-----------+-------------+------+-----+---------+----------------+
5 rows in set (0.020 sec)
```

rents

rentID	INT	PRIMARY KEY
movie	INT	FOREIGN KEY, NOT NULL
client	INT	FOREIGN KEY, NOT NULL
startDate	DATE	NOT NULL
endDate	DATE	NOT NULL

*The foreign key *movie* references to the *movieID* column in the *movies* table, and foreign key *client* references to the *clientID* column in the *clients* table

```
MariaDB [movie_rental]> desc rents;
+-----------+----------+------+-----+---------+-------+
| Field     | Type     | Null | Key | Default | Extra |
+-----------+----------+------+-----+---------+-------+
| rentID    | int(11)  | NO   | PRI | NULL    |       |
| moviesID  | int(11)  | YES  | MUL | NULL    |       |
| clientID  | int(11)  | YES  | MUL | NULL    |       |
| startDate | date     | NO   |     | NULL    |       |
| endDate   | date     | NO   |     | NULL    |       |
+-----------+----------+------+-----+---------+-------+
5 rows in set (0.024 sec)
```

3. Insert the following data into the tables

   genres

genreID	name
1	Action
2	Comedy
3	Horror
4	Animation
5	Musical

```
MariaDB [movie_rental]> select * from genres;
+---------+-----------+
| genreID | name      |
+---------+-----------+
|       1 | Action    |
|       2 | Comedy    |
|       3 | Horror    |
|       4 | Animation |
|       5 | Musical   |
+---------+-----------+
5 rows in set (0.001 sec)
```

movies

movieID	name	releaseDate	genre	pricePerDay
1	Logan	2017-12-05	1	200
2	Star Wars	1990-01-07	1	150
3	Conjuring	2015-06-04	3	175
4	Grudge	2012-11-03	3	140
5	Mr Bean	1994-05-12	2	200
6	Kung Fu Panda	2009-12-21	2	160
7	Lion King	1994-06-22	4	250
8	August Rush	2009-08-14	5	160
9	School Of Rock	1997-06-22	5	300
10	Transformers	2014-06-12	1	275

```
MariaDB [movie_rental]> select * from movies;
+----------+----------------+-------------+---------+-------------+
| moviesID | name           | releaseDate | genreID | pricePerDay |
+----------+----------------+-------------+---------+-------------+
|        1 | Logan          | 2017-12-05  |       1 |         200 |
|        2 | StarWars       | 1990-01-07  |       1 |         150 |
|        3 | Conjuring      | 2015-06-04  |       3 |         175 |
|        4 | Grudge         | 2012-11-03  |       3 |         140 |
|        5 | Mr Bean        | 1994-05-12  |       2 |         200 |
|        6 | Kung Fu Panda  | 2009-12-21  |       2 |         160 |
|        7 | Lion King      | 1994-06-22  |       4 |         250 |
|        8 | August Rush    | 2009-08-14  |       5 |         160 |
|        9 | School of Rock | 1997-06-22  |       5 |         300 |
|       10 | Transfomers    | 2014-06-12  |       1 |         275 |
+----------+----------------+-------------+---------+-------------+
10 rows in set (0.000 sec)
```

clients

clientID	firstName	lastName	dob	phone
1	Mark	Guiliana	1989-09-12	122-555-888
2	Benny	Greb	1985-04-04	545-862-745
3	Mark	Twain	1990-07-22	541-965-785
4	Anna	Ivanovna	1994-09-12	654-785-022
5	Kate	Bengio	2000-12-01	854-885-446
6	Siraj	Rawal	1991-04-18	854-889-886
7	James	Arthur	1989-06-24	654-852-962

```
MariaDB [movie_rental]> insert into clients value
    -> (1, "Mark", "Guiliana", "1989-09-12", "122-555-888"),
    -> (2, "Benny", "Greb", "1985-04-04", "545-862-745"),
    -> (3, "Mark", "Twain", "1990-07-22", "541-965-785"),
    -> (4, "Anna", "Ivanovna", "1994-09-12", "654-785-022"),
    -> (5, "Kate", "Bengio", "2000-12-01", "854-885-446"),
    -> (6, "Siraj", "Rawal", "1991-04-18", "654-852-962"),
    -> (7, "James", "Arthur", "1989-06-24", "854-889-886");
Query OK, 7 rows affected (0.009 sec)
Records: 7  Duplicates: 0  Warnings: 0
```

```
MariaDB [movie_rental]> select * from clients;
+----------+-----------+----------+------------+-------------+
| clientID | firstName | lastName | DOB        | phone       |
+----------+-----------+----------+------------+-------------+
|        1 | Mark      | Guiliana | 1989-09-12 | 122-555-888 |
|        2 | Benny     | Greb     | 1985-04-04 | 545-862-745 |
|        3 | Mark      | Twain    | 1990-07-22 | 541-965-785 |
|        4 | Anna      | Ivanovna | 1994-09-12 | 654-785-022 |
|        5 | Kate      | Bengio   | 2000-12-01 | 854-885-446 |
|        6 | Siraj     | Rawal    | 1991-04-18 | 654-852-962 |
|        7 | James     | Arthur   | 1989-06-24 | 854-889-886 |
+----------+-----------+----------+------------+-------------+
7 rows in set (0.001 sec)
```

rents

rentID	movie	client	startDate	endDate
1	1	3	2017-02-12	2017-02-17
2	2	3	2017-02-12	2017-02-17
3	10	1	2017-02-19	2017-02-22
4	4	1	2017-02-22	2017-02-27
5	2	2	2017-02-26	2017-03-01
6	3	4	2017-03-01	2017-03-06
7	8	5	2017-03-12	2017-03-15
8	4	7	2017-03-19	2017-03-22
9	5	6	2017-03-21	2017-03-25
10	9	6	2017-03-22	2017-03-26

```
MariaDB [movie_rental]> insert into rents values
    -> (1, 1, 3, "2017-02-12", "2017-02-17"),
    -> (2, 2, 3, "2017-02-12", "2017-02-22"),
    -> (3, 10, 1, "2017-02-19", "2017-02-22"),
    -> (4, 4, 1, "2017-02-22", "2017-02-27"),
    -> (5, 2, 2, "2017-02-26", "2017-03-01"),
    -> (6, 3, 4, "2017-03-01", "2017-03-06"),
    -> (7, 8, 5, "2017-03-12", "2017-03-22"),
    -> (8, 4, 7,"2017-03-19", "2017-03-25"),
    -> (9, 5, 6, "2017-03-15", "2017-03-21"),
    -> (10, 9, 6, "2017-03-22", "2017-03-26");
Query OK, 10 rows affected (0.012 sec)
Records: 10  Duplicates: 0  Warnings: 0

MariaDB [movie_rental]> select * from rents;
+--------+----------+----------+------------+------------+
| rentID | moviesID | clientID | startDate  | endDate    |
+--------+----------+----------+------------+------------+
|      1 |        1 |        3 | 2017-02-12 | 2017-02-17 |
|      2 |        2 |        3 | 2017-02-12 | 2017-02-22 |
|      3 |       10 |        1 | 2017-02-19 | 2017-02-22 |
|      4 |        4 |        1 | 2017-02-22 | 2017-02-27 |
|      5 |        2 |        2 | 2017-02-26 | 2017-03-01 |
|      6 |        3 |        4 | 2017-03-01 | 2017-03-06 |
|      7 |        8 |        5 | 2017-03-12 | 2017-03-22 |
|      8 |        4 |        7 | 2017-03-19 | 2017-03-25 |
|      9 |        5 |        6 | 2017-03-15 | 2017-03-21 |
|     10 |        9 |        6 | 2017-03-22 | 2017-03-26 |
+--------+----------+----------+------------+------------+
10 rows in set (0.001 sec)
```

4. Write SQL statements for doing the following:
   a. Show all the details of the clients whose names begin with "m".

```
MariaDB [movie_rental]> select * from clients where firstName like "m%";
+----------+-----------+----------+------------+-------------+
| clientID | firstName | lastName | DOB        | phone       |
+----------+-----------+----------+------------+-------------+
|        1 | Mark      | Guiliana | 1989-09-12 | 122-555-888 |
|        3 | Mark      | Twain    | 1990-07-22 | 541-965-785 |
+----------+-----------+----------+------------+-------------+
2 rows in set (0.008 sec)
```

b. Show the lastName and dob of the clients whose last names end in "a" or "o".

```
MariaDB [movie_rental]> select lastName,DOB from clients where lastName like "%A" or
+----------+------------+
| lastName | DOB        |
+----------+------------+
| Guiliana | 1989-09-12 |
| Ivanovna | 1994-09-12 |
+----------+------------+
2 rows in set, 5 warnings (0.001 sec)
```

c. Show all the details of the movies which were released in the 90s.

```
MariaDB [movie_rental]> select * from movies where releaseDate like "19%";
+----------+----------------+-------------+---------+-------------+
| moviesID | name           | releaseDate | genreID | pricePerDay |
+----------+----------------+-------------+---------+-------------+
|        2 | StarWars       | 1990-01-07  |       1 |         150 |
|        5 | Mr Bean        | 1994-05-12  |       2 |         200 |
|        7 | Lion King      | 1994-06-22  |       4 |         250 |
|        9 | School of Rock | 1997-06-22  |       5 |         300 |
+----------+----------------+-------------+---------+-------------+
4 rows in set (0.001 sec)
```

d. Show all the details of the clients who were born in September or April.

```
MariaDB [movie_rental]> select * from clients where month(DOB)= "8" or "9";
+----------+-----------+-----------+------------+--------------+
| clientID | firstName | lastName  | DOB        | phone        |
+----------+-----------+-----------+------------+--------------+
|        1 | Mark      | Guiliana  | 1989-09-12 | 122-555-888  |
|        2 | Benny     | Greb      | 1985-04-04 | 545-862-745  |
|        3 | Mark      | Twain     | 1990-07-22 | 541-965-785  |
|        4 | Anna      | Ivanovna  | 1994-09-12 | 654-785-022  |
|        5 | Kate      | Bengio    | 2000-12-01 | 854-885-446  |
|        6 | Siraj     | Rawal     | 1991-04-18 | 654-852-962  |
|        7 | James     | Arthur    | 1989-06-24 | 854-889-886  |
+----------+-----------+-----------+------------+--------------+
7 rows in set (0.009 sec)

MariaDB [movie_rental]> select * from clients where month(DOB)= "8" or "9";
+----------+-----------+-----------+------------+--------------+
| clientID | firstName | lastName  | DOB        | phone        |
+----------+-----------+-----------+------------+--------------+
|        1 | Mark      | Guiliana  | 1989-09-12 | 122-555-888  |
|        2 | Benny     | Greb      | 1985-04-04 | 545-862-745  |
|        3 | Mark      | Twain     | 1990-07-22 | 541-965-785  |
|        4 | Anna      | Ivanovna  | 1994-09-12 | 654-785-022  |
|        5 | Kate      | Bengio    | 2000-12-01 | 854-885-446  |
|        6 | Siraj     | Rawal     | 1991-04-18 | 654-852-962  |
|        7 | James     | Arthur    | 1989-06-24 | 854-889-886  |
+----------+-----------+-----------+------------+--------------+
7 rows in set (0.001 sec)

MariaDB [movie_rental]> select * from clients where month(DOB)= "4" or "9";
+----------+-----------+-----------+------------+--------------+
| clientID | firstName | lastName  | DOB        | phone        |
+----------+-----------+-----------+------------+--------------+
|        1 | Mark      | Guiliana  | 1989-09-12 | 122-555-888  |
|        2 | Benny     | Greb      | 1985-04-04 | 545-862-745  |
|        3 | Mark      | Twain     | 1990-07-22 | 541-965-785  |
|        4 | Anna      | Ivanovna  | 1994-09-12 | 654-785-022  |
|        5 | Kate      | Bengio    | 2000-12-01 | 854-885-446  |
|        6 | Siraj     | Rawal     | 1991-04-18 | 654-852-962  |
|        7 | James     | Arthur    | 1989-06-24 | 854-889-886  |
+----------+-----------+-----------+------------+--------------+
7 rows in set (0.001 sec)
```

e. Show all the details of the Action and Horror movies.

```
MariaDB [movie_rental]> select* from movies where genreID = 1 and 3;
+----------+------------+-------------+---------+-------------+
| moviesID | name       | releaseDate | genreID | pricePerDay |
+----------+------------+-------------+---------+-------------+
|        1 | Logan      | 2017-12-05  |       1 |         200 |
|        2 | StarWars   | 1990-01-07  |       1 |         150 |
|       10 | Transfomers| 2014-06-12  |       1 |         275 |
+----------+------------+-------------+---------+-------------+
3 rows in set (0.012 sec)
```

f. Show the average pricePerDay of the movies.

```
MariaDB [movie_rental]> select avg(pricePerDay) from movies;
+------------------+
| avg(pricePerDay) |
+------------------+
|         201.0000 |
+------------------+
1 row in set (0.009 sec)
```