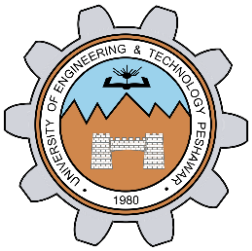
DATABASE MANAGEMENT SYSTEM

Activity #02



Spring 2021

CSE-403 Database Management System

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Class Section: **B**

"On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work."

Student Signature: _____

Submitted to:

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Thursday, 08 July, 2021

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TASK 6.1:

What is difference between SQL and MySQL? Why is MySQL used? What are its features?

Answer:

SQL	MySQL
SQL is a query language	MySQL is a relational database that uses SQL to query a database
SQL to access, update, and manipulate the data stored in a database	MySQL is a database that stores the existing data in a database in an organized manner
SQL is used for writing queries for databases	MySQL facilitates data storing, modifying, and management in a tabular format

USED FOR:

MySQL is a relational database management system based on SQL – Structured Query Language. The application is used for a wide range of purposes, including data warehousing, e-commerce, and logging applications. The most common use for MySQL however, is for the purpose of a web database.

FEATURES:

MySQL is faster, more reliable, and cheaper because of its unique storage engine architecture. It provides very high-performance results in comparison to other databases without losing an essential functionality of the software. It has fast loading utilities because of the different cache memory.

TASK 6.2:

What is database engine? What purpose does it serve? How many types of engines are supported by MySQL? Which database engine is most commonly used and why?

Answer:

Software that stores and retrieves data in a database. It may be a self-contained program or the part of a database management system (DBMS) that performs the storage and retrieval. The actual reads and writes are performed by the operating system. In general, referring to an "engine" for a technology implies that that specific module contains the core code for that technology's operations. In database design, a database engine is composed of the component of the system that actually stores and retrieves data.There are two types of storage engines; Transactional and Non-transactional storage engines.

Transactional Databases:

Transactional databases mean that the write operations on these databases are able to be rolled back if they do not complete. These operations are known as transactions. Most of the modern databases are transactional databases.

Non-Transactional Databases

The impact of no Rollback/Commit is felt. In order to perform rollback operation, the user will need to do it manually with codes.

Common storage engines used in MySQL are InnoDB and MyISAM.

TASK 6.3:

Specify at least fifteen (15) or more different data types supported by MySQL. Provide the

description with at least one example.

Answer:

1. CHAR(M) − A fixed-length string between 1 and 255 characters in length (for example CHAR(5)), right-padded with spaces to the specified length when stored. Defining a length is not required, but the default is 1.

2. VARCHAR(M) − A variable-length string between 1 and 255 characters in length. For example, VARCHAR(25). You must define a length when creating a VARCHAR field.

3. BLOB or TEXT − A field with a maximum length of 65535 characters. BLOBs are "Binary Large Objects" and are used to store large amounts of binary data, such as images or other types of files. Fields defined as TEXT also hold large amounts of data. The difference between

the two is that the sorts and comparisons on the stored data are case sensitive on BLOBs and are not case sensitive in TEXT fields. You do not specify a length with BLOB or TEXT.

4. TINYBLOB or TINYTEXT − A BLOB or TEXT column with a maximum length of 255 characters. You do not specify a length with TINYBLOB or TINYTEXT.

5. MEDIUMBLOB or MEDIUMTEXT − A BLOB or TEXT column with a maximum length of 16777215 characters. You do not specify a length with MEDIUMBLOB or MEDIUMTEXT.

6. LONGBLOB or LONGTEXT − A BLOB or TEXT column with a maximum length of 4294967295 characters. You do not specify a length with LONGBLOB or LONGTEXT.

7. ENUM − An enumeration, which is a fancy term for list. When defining an ENUM, you are creating a list of items from which the value must be selected (or it can be NULL). For example, if you wanted your field to contain "A" or "B" or "C", you would define your ENUM as ENUM ('A', 'B', 'C') and only those values (or NULL) could ever populate that field

8. INT − A normal-sized integer that can be signed or unsigned. If signed, the allowable range is from -2147483648 to 2147483647. If unsigned, the allowable range is from 0 to 4294967295. You can specify a width of up to 11 digits.

9. TINYINT − A very small integer that can be signed or unsigned. If signed, the allowable range is from -128 to 127. If unsigned, the allowable range is from 0 to 255. You can specify a width of up to 4 digits.

10. SMALLINT − A small integer that can be signed or unsigned. If signed, the allowable range is from -32768 to 32767. If unsigned, the allowable range is from 0 to 65535. You can specify a width of up to 5 digits.

11. MEDIUMINT − A medium-sized integer that can be signed or unsigned. If signed, the allowable range is from -8388608 to 8388607. If unsigned, the allowable range is from 0 to 16777215. You can specify a width of up to 9 digits.

12. BIGINT − A large integer that can be signed or unsigned. If signed, the allowable range is from -9223372036854775808 to 9223372036854775807. If unsigned, the allowable range is from 0 to 18446744073709551615. You can specify a width of up to 20 digits.

13. FLOAT(M,D) − A floating-point number that cannot be unsigned. You can define the display length (M) and the number of decimals (D). This is not required and will default to 10,2, where 2 is the number of decimals and 10 is the total number of digits (including decimals). Decimal precision can go to 24 places for a FLOAT.

14. DOUBLE(M,D) − A double precision floating-point number that cannot be unsigned. You can define the display length (M) and the number of decimals (D). This is not required and will default to 16,4, where 4 is the number of decimals. Decimal precision can go to 53 places for a DOUBLE. REAL is a synonym for DOUBLE.

15. DECIMAL(M,D) − An unpacked floating-point number that cannot be unsigned. In the unpacked decimals, each decimal corresponds to one byte. Defining the display length (M) and the number of decimals (D) is required. NUMERIC is a synonym for DECIMAL.

TASK 6.4:

Consider the Relational Schema given in Figure 6.2 and its tables given in Figure 6.3. Write SQL commands to create all the tables. Take the appropriate attribute type and length from the data provided. (Note: Use the following hierarchy for table creation: 1) Type, Tournament and Team, 2) Member, and 3) Entry).

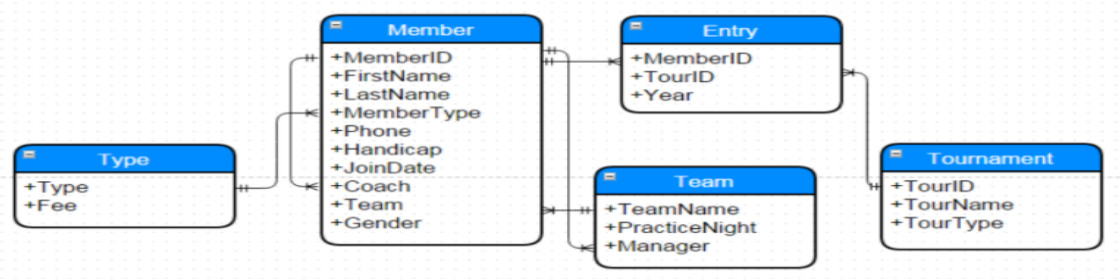

Figure 6.2 – Golf Club Relational Schema

Tables:

Member:

```
MariaDB [lab06]> describe member;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| memberid   | int(11)     | NO   | PRI | NULL    |       |
| firstname  | varchar(30) | YES  |     | NULL    |       |
| lastname   | varchar(30) | YES  |     | NULL    |       |
| membertype | varchar(30) | YES  | MUL | NULL    |       |
| phone      | varchar(30) | YES  |     | NULL    |       |
| handicap   | int(11)     | YES  |     | NULL    |       |
| joindate   | varchar(30) | YES  |     | NULL    |       |
| coach      | int(11)     | YES  | MUL | NULL    |       |
| team       | varchar(30) | YES  |     | NULL    |       |
| gender     | varchar(30) | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
10 rows in set (0.004 sec)
```

Type:

```
MariaDB [lab06]> describe type;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| type  | varchar(30) | NO   | PRI | NULL    |       |
| fee   | int(11)     | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
2 rows in set (0.004 sec)
```

Tournament:

```
MariaDB [lab06]> describe tournament;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| tourid   | int(11)     | NO   | PRI | NULL    |       |
| tourname | varchar(30) | YES  |     | NULL    |       |
| tourtype | varchar(30) | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
3 rows in set (0.094 sec)
```

Team:

```
MariaDB [lab06]> describe team;
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| teamname      | varchar(30) | NO   | PRI | NULL    |       |
| practicenight | varchar(30) | YES  |     | NULL    |       |
| manager       | int(11)     | YES  | MUL | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
3 rows in set (0.003 sec)
```

Entry:

```
MariaDB [lab06]> describe entry;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| memberid | int(11)     | NO   | MUL | NULL    |       |
| tourid   | int(11)     | YES  | MUL | NULL    |       |
| year     | varchar(10) | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
3 rows in set (0.003 sec)
```

TASK 6.5:

Using insert command, populate all the records in member, type, entry, team, and tournament tables according to Figure 6.3a and Figure 6.3b.

Database:

Member:

```
MariaDB [lab06]> select * from member;
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
| memberid | firstname | lastname | membertype | phone   | handicap | joindate  | coach | team   | gender |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
|      118 | Mckenzie  | Meliisa  | Junior     | 963270  |       30 | 10-May-09 |   153 |        | F      |
|      138 | Stone     | Michael  | Senior     | 983223  |       30 | 13-May-13 |     0 |        | M      |
|      153 | Nolen     | Brenda   | Senior     | 442749  |       11 | 24-jul-10 |  NULL | Team B | F      |
|      176 | Branch    | Helen    | Social     | 589419  |        0 | 18-Nov-15 |     0 |        | F      |
|      178 | Beck      | Sarah    | Social     | 226596  |        0 | 06-Jan-14 |     0 |        | F      |
|      228 | Burton    | Sandra   | Junior     | 244493  |       26 | 21-Jun-15 |   153 |        | F      |
|      235 | Cooper    | Willam   | Senior     | 7229454 |       14 | 12-Feb-12 |   153 | Team B | M      |
|      239 | Spance    | Thomas   | Senior     | 797720  |       10 | 4-jun-10  |     0 |        | M      |
|      258 | Olson     | Barbara  | Senior     | 370168  |       16 | 11-Jul-15 |     0 |        | F      |
|      286 | Pollard   | Robert   | Junior     | 617681  |       19 | 26-jul-15 |   235 | Team B | M      |
|      290 | Buxton    | Thomas   | Senior     | 268936  |       26 | 10-jul-12 |   235 |        | M      |
|      323 | Wilcox    | Daniel   | Senior     | 665993  |        3 | 30-Apr-13 |     0 | Team A | M      |
|      331 | Schmidt   | Thoma    | Senior     | 867492  |       25 | 20-Mar-13 |   153 |        | M      |
|      332 | Bridges   | Deborah  | Senior     | 279087  |       12 | 05-Mar-11 |   235 |        | F      |
|      339 | Young     | Betty    | Senior     | 507813  |       21 | 30-Mar-13 |     0 | Team B | F      |
|      414 | Gilmore   | Jane     | Junior     | 459558  |        5 | 12-May-11 |   153 | Team A | F      |
|      415 | taylor    | William  | Senior     | 137353  |        7 | 09-Nov-11 |   235 | Team A | M      |
|      461 | Reed      | Robert   | Senior     | 994664  |        3 | 18-Jul-09 |   235 | Team A | M      |
|      469 | Willis    | Carolyn  | Junior     | 688378  |       29 | 27-Dec-14 |     0 |        | F      |
|      487 | Kent      | Susan    | Social     | 707217  |        0 | 19-Sep-14 |     0 |        | F      |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
20 rows in set (0.001 sec)
```

Team:

```
MariaDB [lab06]> select * from team;
+----------+---------------+---------+
| teamname | practicenight | manager |
+----------+---------------+---------+
| Team A   | Tuesday       |     239 |
| Team B   | Monday        |     153 |
+----------+---------------+---------+
2 rows in set (0.001 sec)
```

Type:

```
MariaDB [lab06]> select * from type;
+-----------+------+
| type      | fee  |
+-----------+------+
| Associate |   80 |
| Junior    |  150 |
| Senior    |  300 |
| Social    |   50 |
+-----------+------+
4 rows in set (0.000 sec)
```

Entry:

```
MariaDB [lab06]> select * from entry;
+----------+--------+------+
| memberid | tourid | year |
+----------+--------+------+
|      118 |     24 | 2013 |
|      228 |     24 | 2014 |
|      228 |     25 | 2014 |
|      228 |     36 | 2014 |
|      235 |     38 | 2012 |
|      235 |     38 | 2014 |
|      235 |     40 | 2013 |
|      235 |     40 | 2014 |
|      239 |     25 | 2014 |
|      239 |     40 | 2012 |
|      258 |     24 | 2013 |
|      258 |     38 | 2013 |
|      286 |     24 | 2012 |
|      286 |     24 | 2013 |
|      286 |     24 | 2014 |
|      415 |     25 | 2014 |
|      415 |     36 | 2013 |
|      415 |     36 | 2014 |
|      415 |     38 | 2012 |
|      415 |     38 | 2014 |
+----------+--------+------+
20 rows in set (0.000 sec)
```

Tournament:

```
MariaDB [lab06]> select * from tournament;
+--------+-------------+----------+
| tourid | tourname    | tourtype |
+--------+-------------+----------+
|     24 | Leeston     | Social   |
|     25 | Kaiapoi     | Social   |
|     36 | Westcoast   | Social   |
|     38 | Canterburry | Open     |
|     40 | Otago       | Open     |
+--------+-------------+----------+
5 rows in set (0.000 sec)
```

TASK 6.6:

Write the query for the following:

a. List the first name, last name, and phone numbers of all the members.

```
MariaDB [lab06]> select firstname, lastname, phone from member;
+-----------+----------+---------+
| firstname | lastname | phone   |
+-----------+----------+---------+
| Mckenzie  | Meliisa  | 963270  |
| Stone     | Michael  | 983223  |
| Nolen     | Brenda   | 442749  |
| Branch    | Helen    | 589419  |
| Beck      | Sarah    | 226596  |
| Burton    | Sandra   | 244493  |
| Cooper    | Willam   | 7229454 |
| Spance    | Thomas   | 797720  |
| Olson     | Barbara  | 370168  |
| Pollard   | Robert   | 617681  |
| Buxton    | Thomas   | 268936  |
| Wilcox    | Daniel   | 665993  |
| Schmidt   | Thoma    | 867492  |
| Bridges   | Deborah  | 279087  |
| Young     | Betty    | 507813  |
| Gilmore   | Jane     | 459558  |
| taylor    | William  | 137353  |
| Reed      | Robert   | 994664  |
| Willis    | Carolyn  | 688378  |
| Kent      | Susan    | 707217  |
+-----------+----------+---------+
20 rows in set (0.000 sec)
```

b. List complete information of all the male members.

```
MariaDB [lab06]> select * from member where gender = 'M';
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
| memberid | firstname | lastname | membertype | phone   | handicap | joindate  | coach | team   | gender |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
|      138 | Stone     | Michael  | Senior     | 983223  |       30 | 13-May-13 |     0 |        | M      |
|      235 | Cooper    | Willam   | Senior     | 7229454 |       14 | 12-Feb-12 |   153 | Team B | M      |
|      239 | Spance    | Thomas   | Senior     | 797720  |       10 | 4-jun-10  |     0 |        | M      |
|      286 | Pollard   | Robert   | Junior     | 617681  |       19 | 26-jul-15 |   235 | Team B | M      |
|      290 | Buxton    | Thomas   | Senior     | 268936  |       26 | 10-jul-12 |   235 |        | M      |
|      323 | Wilcox    | Daniel   | Senior     | 665993  |        3 | 30-Apr-13 |     0 | Team A | M      |
|      331 | Schmidt   | Thoma    | Senior     | 867492  |       25 | 20-Mar-13 |   153 |        | M      |
|      415 | taylor    | William  | Senior     | 137353  |        7 | 09-Nov-11 |   235 | Team A | M      |
|      461 | Reed      | Robert   | Senior     | 994664  |        3 | 18-Jul-09 |   235 | Team A | M      |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
9 rows in set (0.001 sec)
```

c. List name of all the members who belonged to Team A.

```
MariaDB [lab06]> select * from member where team = 'Team A';
+----------+-----------+----------+------------+--------+----------+-----------+-------+--------+--------+
| memberid | firstname | lastname | membertype | phone  | handicap | joindate  | coach | team   | gender |
+----------+-----------+----------+------------+--------+----------+-----------+-------+--------+--------+
|      323 | Wilcox    | Daniel   | Senior     | 665993 |        3 | 30-Apr-13 |     0 | Team A | M      |
|      414 | Gilmore   | Jane     | Junior     | 459558 |        5 | 12-May-11 |   153 | Team A | F      |
|      415 | taylor    | William  | Senior     | 137353 |        7 | 09-Nov-11 |   235 | Team A | M      |
|      461 | Reed      | Robert   | Senior     | 994664 |        3 | 18-Jul-09 |   235 | Team A | M      |
+----------+-----------+----------+------------+--------+----------+-----------+-------+--------+--------+
4 rows in set (0.000 sec)
```

d. List complete information of all the senior members.

```
MariaDB [lab06]> select * from member where membertype = 'Senior';
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
| memberid | firstname | lastname | membertype | phone   | handicap | joindate  | coach | team   | gender |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
|      138 | Stone     | Michael  | Senior     | 983223  |       30 | 13-May-13 |     0 |        | M      |
|      153 | Nolen     | Brenda   | Senior     | 442749  |       11 | 24-jul-10 |  NULL | Team B | F      |
|      235 | Cooper    | Willam   | Senior     | 7229454 |       14 | 12-Feb-12 |   153 | Team B | M      |
|      239 | Spance    | Thomas   | Senior     | 797720  |       10 | 4-jun-10  |     0 |        | M      |
|      258 | Olson     | Barbara  | Senior     | 370168  |       16 | 11-Jul-15 |     0 |        | F      |
|      290 | Buxton    | Thomas   | Senior     | 268936  |       26 | 10-jul-12 |   235 |        | M      |
|      323 | Wilcox    | Daniel   | Senior     | 665993  |        3 | 30-Apr-13 |     0 | Team A | M      |
|      331 | Schmidt   | Thoma    | Senior     | 867492  |       25 | 20-Mar-13 |   153 |        | M      |
|      332 | Bridges   | Deborah  | Senior     | 279087  |       12 | 05-Mar-11 |   235 |        | F      |
|      339 | Young     | Betty    | Senior     | 507813  |       21 | 30-Mar-13 |     0 | Team B | F      |
|      415 | taylor    | William  | Senior     | 137353  |        7 | 09-Nov-11 |   235 | Team A | M      |
|      461 | Reed      | Robert   | Senior     | 994664  |        3 | 18-Jul-09 |   235 | Team A | M      |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
12 rows in set (0.026 sec)
```

e. List complete information of all the members in order of LastName.

```
MariaDB [lab06]> select * from member order by lastname asc;
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
| memberid | firstname | lastname | membertype | phone   | handicap | joindate  | coach | team   | gender |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
|      258 | Olson     | Barbara  | Senior     | 370168  |       16 | 11-Jul-15 |     0 |        | F      |
|      339 | Young     | Betty    | Senior     | 507813  |       21 | 30-Mar-13 |     0 | Team B | F      |
|      153 | Nolen     | Brenda   | Senior     | 442749  |       11 | 24-jul-10 |  NULL | Team B | F      |
|      469 | Willis    | Carolyn  | Junior     | 688378  |       29 | 27-Dec-14 |     0 |        | F      |
|      323 | Wilcox    | Daniel   | Senior     | 665993  |        3 | 30-Apr-13 |     0 | Team A | M      |
|      332 | Bridges   | Deborah  | Senior     | 279087  |       12 | 05-Mar-11 |   235 |        | F      |
|      176 | Branch    | Helen    | Social     | 589419  |        0 | 18-Nov-15 |     0 |        | F      |
|      414 | Gilmore   | Jane     | Junior     | 459558  |        5 | 12-May-11 |   153 | Team A | F      |
|      118 | Mckenzie  | Meliisa  | Junior     | 963270  |       30 | 10-May-09 |   153 |        | F      |
|      138 | Stone     | Michael  | Senior     | 983223  |       30 | 13-May-13 |     0 |        | M      |
|      286 | Pollard   | Robert   | Junior     | 617681  |       19 | 26-jul-15 |   235 | Team B | M      |
|      461 | Reed      | Robert   | Senior     | 994664  |        3 | 18-Jul-09 |   235 | Team A | M      |
|      228 | Burton    | Sandra   | Junior     | 244493  |       26 | 21-Jun-15 |   153 |        | F      |
|      178 | Beck      | Sarah    | Social     | 226596  |        0 | 06-Jan-14 |     0 |        | F      |
|      487 | Kent      | Susan    | Social     | 707217  |        0 | 19-Sep-14 |     0 |        | F      |
|      331 | Schmidt   | Thoma    | Senior     | 867492  |       25 | 20-Mar-13 |   153 |        | M      |
|      239 | Spance    | Thomas   | Senior     | 797720  |       10 | 4-jun-10  |     0 |        | M      |
|      290 | Buxton    | Thomas   | Senior     | 268936  |       26 | 10-jul-12 |   235 |        | M      |
|      235 | Cooper    | Willam   | Senior     | 7229454 |       14 | 12-Feb-12 |   153 | Team B | M      |
|      415 | taylor    | William  | Senior     | 137353  |        7 | 09-Nov-11 |   235 | Team A | M      |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
20 rows in set (0.000 sec)
```

f. Retrieve the number of records in Member table.

```
MariaDB [lab06]> select count(*) from member;
+----------+
| count(*) |
+----------+
|       20 |
+----------+
1 row in set (0.024 sec)
```

g. Provide the first name and last name of the two coaches.

```
MariaDB [lab06]> select firstname, lastname from member where coach = 153 or coach = 235;
+-----------+----------+
| firstname | lastname |
+-----------+----------+
| Mckenzie  | Meliisa  |
| Burton    | Sandra   |
| Cooper    | Willam   |
| Pollard   | Robert   |
| Buxton    | Thomas   |
| Schmidt   | Thoma    |
| Bridges   | Deborah  |
| Gilmore   | Jane     |
| taylor    | William  |
| Reed      | Robert   |
+-----------+----------+
10 rows in set (0.000 sec)
```

h. Find the amount of fee provided by each member by mentioning member first name, last name, and fee. (Hint: use the member and type tables.)

```
MariaDB [lab06]> select member.firstname, member.lastname, type.fee from member,type;
+-----------+----------+------+
| firstname | lastname | fee  |
+-----------+----------+------+
| Mckenzie  | Meliisa  |   80 |
| Mckenzie  | Meliisa  |  150 |
| Mckenzie  | Meliisa  |  300 |
| Mckenzie  | Meliisa  |   50 |
| Stone     | Michael  |   80 |
| Stone     | Michael  |  150 |
| Stone     | Michael  |  300 |
| Stone     | Michael  |   50 |
| Nolen     | Brenda   |   80 |
| Nolen     | Brenda   |  150 |
| Nolen     | Brenda   |  300 |
| Nolen     | Brenda   |   50 |
| Branch    | Helen    |   80 |
| Branch    | Helen    |  150 |
| Branch    | Helen    |  300 |
| Branch    | Helen    |   50 |
| Beck      | Sarah    |   80 |
| Beck      | Sarah    |  150 |
| Beck      | Sarah    |  300 |
| Beck      | Sarah    |   50 |
| Burton    | Sandra   |   80 |
| Burton    | Sandra   |  150 |
| Burton    | Sandra   |  300 |
| Burton    | Sandra   |   50 |
| Cooper    | Willam   |   80 |
| Cooper    | Willam   |  150 |
| Cooper    | Willam   |  300 |
| Cooper    | Willam   |   50 |
| Spance    | Thomas   |   80 |
| Spance    | Thomas   |  150 |
| Spance    | Thomas   |  300 |
| Spance    | Thomas   |   50 |
| Olson     | Barbara  |   80 |
| Olson     | Barbara  |  150 |
| Olson     | Barbara  |  300 |
| Olson     | Barbara  |   50 |
| Pollard   | Robert   |   80 |
| Pollard   | Robert   |  150 |
| Pollard   | Robert   |  300 |
| Pollard   | Robert   |   50 |
| Buxton    | Thomas   |   80 |
| Buxton    | Thomas   |  150 |
| Buxton    | Thomas   |  300 |
| Buxton    | Thomas   |   50 |
| Wilcox    | Daniel   |   80 |
| Wilcox    | Daniel   |  150 |
| Wilcox    | Daniel   |  300 |
| Wilcox    | Daniel   |   50 |
| Schmidt   | Thoma    |   80 |
| Schmidt   | Thoma    |  150 |
| Schmidt   | Thoma    |  300 |
| Schmidt   | Thoma    |   50 |
| Bridges   | Deborah  |   80 |
| Bridges   | Deborah  |  150 |
| Bridges   | Deborah  |  300 |
| Bridges   | Deborah  |   50 |
| Young     | Betty    |   80 |
| Young     | Betty    |  150 |
| Young     | Betty    |  300 |
| Young     | Betty    |   50 |
| Gilmore   | Jane     |   80 |
| Gilmore   | Jane     |  150 |
| Gilmore   | Jane     |  300 |
| Gilmore   | Jane     |   50 |
| taylor    | William  |   80 |
| taylor    | William  |  150 |
```

```
| taylor    | William   |  300 |
| taylor    | William   |   50 |
| Reed      | Robert    |   80 |
| Reed      | Robert    |  150 |
| Reed      | Robert    |  300 |
| Reed      | Robert    |   50 |
| Willis    | Carolyn   |   80 |
| Willis    | Carolyn   |  150 |
| Willis    | Carolyn   |  300 |
| Willis    | Carolyn   |   50 |
| Kent      | Susan     |   80 |
| Kent      | Susan     |  150 |
| Kent      | Susan     |  300 |
| Kent      | Susan     |   50 |
+-----------+-----------+------+
80 rows in set (0.001 sec)
```

i. Delete the record from Entry table where Member=415 and TourID=40.

```
MariaDB [lab06]> delete from entry where memberid = 415 and tourid = 40;
Query OK, 1 row affected (0.073 sec)
```

j. Update the Fee of Associate in Type table from 60 to 80.

```
MariaDB [lab06]> update type set fee = 80 where type = 'Associate';
```

TASK 6.7:

MySQL supports various built-in functions belonging to various categories such as numeric functions, string functions, and date & time functions. Write MySQL commands for following numeric functions: ceiling, cos, degrees, log10, mod, radians, round, sqrt, and truncate. Next write MySQL commands for following string functions: concat, upper, lower, repeat, reverse, regexp, replace, length, ltrim, and rtrim. Finally write MySQL commands for following date & time functions: curdate, week, date_from, quarter, now, sysdate, and date_format.

Numeric Functions:

```
MariaDB [lab06]> select ceiling(memberid) from member;
+--------------------+
| ceiling(memberid) |
+--------------------+
|                153 |
|                138 |
|                176 |
|                178 |
|                239 |
|                258 |
|                323 |
|                339 |
|                469 |
|                487 |
|                118 |
|                228 |
|                235 |
|                331 |
|                414 |
|                286 |
|                290 |
|                332 |
|                415 |
|                461 |
+--------------------+
20 rows in set (0.015 sec)
```

```
MariaDB [lab06]> select cos(memberid) from member;
+----------------------+
| cos(memberid)        |
+----------------------+
|  -0.5913696841443247 |
|   0.9736488930495181 |
|   0.9974939203271522 |
|  -0.4794387656291727 |
|   0.9715850561826999 |
|   0.9251360931462582 |
|  -0.8342399825282196 |
|   0.9576681585475916 |
|  -0.6194969495515196 |
|  -0.9985884718158823 |
|   0.1891294205289584 |
| -0.23238842122852268 |
|  -0.8141984723053474 |
|   -0.424151709070136 |
|   0.7710994166809965 |
|  -0.9933869191569467 |
|   0.5624289267667438 |
|   0.5328585288581931 |
|   0.9524037916633658 |
|  -0.6865084698355503 |
+----------------------+
20 rows in set (0.001 sec)
```

```
MariaDB [lab06]> select degrees(memberid) from member;
+--------------------+
| degrees(memberid)  |
+--------------------+
|  8766.254265501595 |
|   7906.81757280536 |
| 10084.057194302488 |
| 10198.648753328653 |
| 13693.691303626676 |
|  14782.31111437524 |
|  18506.53678272559 |
|  19423.26925493491 |
|  26871.72059163561 |
|  27903.04462287109 |
|  6760.901982543714 |
|  13063.43772898277 |
| 13464.508185574346 |
|  18964.90301883025 |
| 23720.452718416083 |
| 16386.592940741546 |
| 16615.776058793872 |
| 19022.198798343332 |
| 23777.748497929166 |
|  26413.35435553095 |
+--------------------+
20 rows in set (0.000 sec)
```

```
MariaDB [lab06]> select log10(memberid) from member;
+--------------------+
| log10(memberid)    |
+--------------------+
|  2.184691430817599 |
| 2.1398790864012365 |
|   2.24551266781415 |
|  2.250420002308894 |
| 2.3783979009481375 |
|   2.41161970596323 |
|  2.509202522331103 |
|  2.530199698203082 |
| 2.6711728427150834 |
| 2.6875289612146345 |
| 2.0718820073061255 |
|  2.357934847000454 |
| 2.3710678622717363 |
|  2.519827993775719 |
|  2.617000341120899 |
|  2.456366033129043 |
|  2.462397997898956 |
| 2.5211380837040362 |
| 2.6180480967120925 |
|  2.663700925389648 |
+--------------------+
20 rows in set (0.025 sec)
```

```
MariaDB [lab06]> select mod(memberid,2) from member;
+-----------------+
| mod(memberid,2) |
+-----------------+
|               1 |
|               0 |
|               0 |
|               0 |
|               1 |
|               0 |
|               1 |
|               1 |
|               1 |
|               1 |
|               0 |
|               0 |
|               1 |
|               1 |
|               0 |
|               0 |
|               0 |
|               0 |
|               1 |
|               1 |
+-----------------+
20 rows in set (0.000 sec)
```

```
MariaDB [lab06]> select radians(memberid) from member;
+--------------------+
| radians(memberid)  |
+--------------------+
|  2.670353755551324 |
| 2.4085543677521746 |
|   3.07177948351002 |
| 3.1066860685499065 |
|  4.171336912266447 |
|   4.50294947014537 |
| 5.6374134839416845 |
|  5.916666164260777 |
|  8.185594191853406 |
|  8.499753457212385 |
|  2.059488517353309 |
| 3.9793506945470716 |
|  4.101523742186674 |
|  5.777039824101231 |
|  7.225663103256524 |
|  4.991641660703783 |
|  5.061454830783556 |
|  5.794493116621174 |
|  7.243116395776467 |
|   8.04596785169386 |
+--------------------+
20 rows in set (0.000 sec)
```

```
MariaDB [lab06]> select round(memberid) from member;
+-----------------+
| round(memberid) |
+-----------------+
|             153 |
|             138 |
|             176 |
|             178 |
|             239 |
|             258 |
|             323 |
|             339 |
|             469 |
|             487 |
|             118 |
|             228 |
|             235 |
|             331 |
|             414 |
|             286 |
|             290 |
|             332 |
|             415 |
|             461 |
+-----------------+
20 rows in set (0.000 sec)
```

```
MariaDB [lab06]> select sqrt(memberid) from member;
+--------------------+
| sqrt(memberid)     |
+--------------------+
|  12.36931687685298 |
|  11.74734012447073 |
|   13.2664991614216 |
| 13.341664064126334 |
| 15.459624833740307 |
|  16.06237840420901 |
|  17.97220075561143 |
| 18.411952639521967 |
| 21.656407827707714 |
|  22.06807649071391 |
| 10.862780491200215 |
|   15.0996688705415 |
| 15.329709716755891 |
| 18.193405398660254 |
| 20.346989949375804 |
| 16.911534525287763 |
| 17.029386365926403 |
|   18.2208671582886 |
|  20.37154878746336 |
| 21.470910553583888 |
+--------------------+
20 rows in set (0.000 sec)
```

String Functions:

```
MariaDB [lab06]> select concat(firstname,lastname) from member;
+-----------------------------+
| concat(firstname,lastname)  |
+-----------------------------+
| MckenzieMeliisa             |
| StoneMichael                |
| NolenBrenda                 |
| BranchHelen                 |
| BeckSarah                   |
| BurtonSandra                |
| CooperWillam                |
| SpanceThomas                |
| OlsonBarbara                |
| PollardRobert               |
| BuxtonThomas                |
| WilcoxDaniel                |
| SchmidtThoma                |
| BridgesDeborah              |
| YoungBetty                  |
| GilmoreJane                 |
| taylorWilliam               |
| ReedRobert                  |
| WillisCarolyn               |
| KentSusan                   |
+-----------------------------+
20 rows in set (0.001 sec)
```

```
MariaDB [lab06]> select upper(firstname) from member;
+------------------+
| upper(firstname) |
+------------------+
| MCKENZIE         |
| STONE            |
| NOLEN            |
| BRANCH           |
| BECK             |
| BURTON           |
| COOPER           |
| SPANCE           |
| OLSON            |
| POLLARD          |
| BUXTON           |
| WILCOX           |
| SCHMIDT          |
| BRIDGES          |
| YOUNG            |
| GILMORE          |
| TAYLOR           |
| REED             |
| WILLIS           |
| KENT             |
+------------------+
20 rows in set (0.101 sec)
```

```
MariaDB [lab06]> select lower(firstname) from member;
+------------------+
| lower(firstname) |
+------------------+
| mckenzie         |
| stone            |
| nolen            |
| branch           |
| beck             |
| burton           |
| cooper           |
| spance           |
| olson            |
| pollard          |
| buxton           |
| wilcox           |
| schmidt          |
| bridges          |
| young            |
| gilmore          |
| taylor           |
| reed             |
| willis           |
| kent             |
+------------------+
20 rows in set (0.000 sec)
```

```
MariaDB [lab06]> select repeat(firstname,2) from member;
+---------------------+
| repeat(firstname,2) |
+---------------------+
| MckenzieMckenzie    |
| StoneStone          |
| NolenNolen          |
| BranchBranch        |
| BeckBeck            |
| BurtonBurton        |
| CooperCooper        |
| SpanceSpance        |
| OlsonOlson          |
| PollardPollard      |
| BuxtonBuxton        |
| WilcoxWilcox        |
| SchmidtSchmidt      |
| BridgesBridges      |
| YoungYoung          |
| GilmoreGilmore      |
| taylortaylor        |
| ReedReed            |
| WillisWillis        |
| KentKent            |
+---------------------+
20 rows in set (0.000 sec)
```

```
MariaDB [lab06]> select reverse(firstname) from member;
+--------------------+
| reverse(firstname) |
+--------------------+
| eiznekcM           |
| enotS              |
| neloN              |
| hcnarB             |
| kceB               |
| notruB             |
| repooC             |
| ecnapS             |
| noslO              |
| dralloP            |
| notxuB             |
| xocliW             |
| tdimhcS            |
| segdirB            |
| gnuoY              |
| eromliG            |
| rolyat             |
| deeR               |
| silliW             |
| tneK               |
+--------------------+
20 rows in set (0.000 sec)
```

```
MariaDB [lab06]> select replace(firstname, 'M','A')  from member;
+-----------------------------+
| replace(firstname, 'M','A') |
+-----------------------------+
| Ackenzie                    |
| Stone                       |
| Nolen                       |
| Branch                      |
| Beck                        |
| Burton                      |
| Cooper                      |
| Spance                      |
| Olson                       |
| Pollard                     |
| Buxton                      |
| Wilcox                      |
| Schmidt                     |
| Bridges                     |
| Young                       |
| Gilmore                     |
| taylor                      |
| Reed                        |
| Willis                      |
| Kent                        |
+-----------------------------+
20 rows in set (0.001 sec)
```

```
MariaDB [lab06]> select length(firstname)  from member;
+-------------------+
| length(firstname) |
+-------------------+
|                 8 |
|                 5 |
|                 5 |
|                 6 |
|                 4 |
|                 6 |
|                 6 |
|                 6 |
|                 5 |
|                 7 |
|                 6 |
|                 6 |
|                 7 |
|                 7 |
|                 5 |
|                 7 |
|                 6 |
|                 4 |
|                 6 |
|                 4 |
+-------------------+
20 rows in set (0.001 sec)
```

```
MariaDB [lab06]> select ltrim(firstname)  from member;
+------------------+
| ltrim(firstname) |
+------------------+
| Mckenzie         |
| Stone            |
| Nolen            |
| Branch           |
| Beck             |
| Burton           |
| Cooper           |
| Spance           |
| Olson            |
| Pollard          |
| Buxton           |
| Wilcox           |
| Schmidt          |
| Bridges          |
| Young            |
| Gilmore          |
| taylor           |
| Reed             |
| Willis           |
| Kent             |
+------------------+
20 rows in set (0.000 sec)
```

```
MariaDB [lab06]> select rtrim(firstname)  from member;
+------------------+
| rtrim(firstname) |
+------------------+
| Mckenzie         |
| Stone            |
| Nolen            |
| Branch           |
| Beck             |
| Burton           |
| Cooper           |
| Spance           |
| Olson            |
| Pollard          |
| Buxton           |
| Wilcox           |
| Schmidt          |
| Bridges          |
| Young            |
| Gilmore          |
| taylor           |
| Reed             |
| Willis           |
| Kent             |
+------------------+
20 rows in set (0.000 sec)
```

Date Functions:

```
MariaDB [lab06]> select curdate();
+------------+
| curdate()  |
+------------+
| 2021-07-08 |
+------------+
1 row in set (0.020 sec)
```

```
MariaDB [lab06]> select week("2018-07-11");
+--------------------+
| week("2018-07-11") |
+--------------------+
|                 27 |
+--------------------+
1 row in set (0.000 sec)
```

```
MariaDB [lab06]> select quarter("2018-07-11");
+-----------------------+
| quarter("2018-07-11") |
+-----------------------+
|                     3 |
+-----------------------+
1 row in set (0.027 sec)
```

```
MariaDB [lab06]> select now();
+---------------------+
| now()               |
+---------------------+
| 2021-07-08 00:22:39 |
+---------------------+
1 row in set (0.000 sec)
```

```
MariaDB [lab06]> select sysdate();
+---------------------+
| sysdate()           |
+---------------------+
| 2021-07-08 00:23:22 |
+---------------------+
1 row in set (0.000 sec)
```

```
MariaDB [lab06]> SELECT DATE_FORMAT("2017-06-15", "%Y");
+---------------------------------+
| DATE_FORMAT("2017-06-15", "%Y") |
+---------------------------------+
| 2017                            |
+---------------------------------+
1 row in set (0.000 sec)
```

TASK 6.8:

MySQL uses various operators such as Comparison (<, >, <=, >=, ==, and !=), Boolean (AND, OR, and NOT), and Special Operators (Between, Like, IN, Is Null, and Distinct). Give examples of these for Golf database created in this lab.

Comparison Operators:

```
MariaDB [lab06]> select * from member where coach != 153;
+----------+-----------+----------+------------+--------+----------+-----------+-------+--------+--------+
| memberid | firstname | lastname | membertype | phone  | handicap | joindate  | coach | team   | gender |
+----------+-----------+----------+------------+--------+----------+-----------+-------+--------+--------+
|      138 | Stone     | Michael  | Senior     | 983223 |       30 | 13-May-13 |     0 |        | M      |
|      176 | Branch    | Helen    | Social     | 589419 |        0 | 18-Nov-15 |     0 |        | F      |
|      178 | Beck      | Sarah    | Social     | 226596 |        0 | 06-Jan-14 |     0 |        | F      |
|      239 | Spance    | Thomas   | Senior     | 797720 |       10 | 4-jun-10  |     0 |        | M      |
|      258 | Olson     | Barbara  | Senior     | 370168 |       16 | 11-Jul-15 |     0 |        | F      |
|      286 | Pollard   | Robert   | Junior     | 617681 |       19 | 26-jul-15 |   235 | Team B | M      |
|      290 | Buxton    | Thomas   | Senior     | 268936 |       26 | 10-jul-12 |   235 |        | M      |
|      323 | Wilcox    | Daniel   | Senior     | 665993 |        3 | 30-Apr-13 |     0 | Team A | M      |
|      332 | Bridges   | Deborah  | Senior     | 279087 |       12 | 05-Mar-11 |   235 |        | F      |
|      339 | Young     | Betty    | Senior     | 507813 |       21 | 30-Mar-13 |     0 | Team B | F      |
|      415 | taylor    | William  | Senior     | 137353 |        7 | 09-Nov-11 |   235 | Team A | M      |
|      461 | Reed      | Robert   | Senior     | 994664 |        3 | 18-Jul-09 |   235 | Team A | M      |
|      469 | Willis    | Carolyn  | Junior     | 688378 |       29 | 27-Dec-14 |     0 |        | F      |
|      487 | Kent      | Susan    | Social     | 707217 |        0 | 19-Sep-14 |     0 |        | F      |
+----------+-----------+----------+------------+--------+----------+-----------+-------+--------+--------+
14 rows in set (0.001 sec)
```

```
MariaDB [lab06]> select * from member where handicap>10;
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
| memberid | firstname | lastname | membertype | phone   | handicap | joindate  | coach | team   | gender |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
|      118 | Mckenzie  | Meliisa  | Junior     | 963270  |       30 | 10-May-09 |   153 |        | F      |
|      138 | Stone     | Michael  | Senior     | 983223  |       30 | 13-May-13 |     0 |        | M      |
|      153 | Nolen     | Brenda   | Senior     | 442749  |       11 | 24-jul-10 |  NULL | Team B | F      |
|      228 | Burton    | Sandra   | Junior     | 244493  |       26 | 21-Jun-15 |   153 |        | F      |
|      235 | Cooper    | Willam   | Senior     | 7229454 |       14 | 12-Feb-12 |   153 | Team B | M      |
|      258 | Olson     | Barbara  | Senior     | 370168  |       16 | 11-Jul-15 |     0 |        | F      |
|      286 | Pollard   | Robert   | Junior     | 617681  |       19 | 26-jul-15 |   235 | Team B | M      |
|      290 | Buxton    | Thomas   | Senior     | 268936  |       26 | 10-jul-12 |   235 |        | M      |
|      331 | Schmidt   | Thoma    | Senior     | 867492  |       25 | 20-Mar-13 |   153 |        | M      |
|      332 | Bridges   | Deborah  | Senior     | 279087  |       12 | 05-Mar-11 |   235 |        | F      |
|      339 | Young     | Betty    | Senior     | 507813  |       21 | 30-Mar-13 |     0 | Team B | F      |
|      469 | Willis    | Carolyn  | Junior     | 688378  |       29 | 27-Dec-14 |     0 |        | F      |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
12 rows in set (0.001 sec)
```

```
MariaDB [lab06]> select * from member where handicap<20;
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
| memberid | firstname | lastname | membertype | phone   | handicap | joindate  | coach | team   | gender |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
|      153 | Nolen     | Brenda   | Senior     | 442749  |       11 | 24-jul-10 |  NULL | Team B | F      |
|      176 | Branch    | Helen    | Social     | 589419  |        0 | 18-Nov-15 |     0 |        | F      |
|      178 | Beck      | Sarah    | Social     | 226596  |        0 | 06-Jan-14 |     0 |        | F      |
|      235 | Cooper    | Willam   | Senior     | 7229454 |       14 | 12-Feb-12 |   153 | Team B | M      |
|      239 | Spance    | Thomas   | Senior     | 797720  |       10 | 4-jun-10  |     0 |        | M      |
|      258 | Olson     | Barbara  | Senior     | 370168  |       16 | 11-Jul-15 |     0 |        | F      |
|      286 | Pollard   | Robert   | Junior     | 617681  |       19 | 26-jul-15 |   235 | Team B | M      |
|      323 | Wilcox    | Daniel   | Senior     | 665993  |        3 | 30-Apr-13 |     0 | Team A | M      |
|      332 | Bridges   | Deborah  | Senior     | 279087  |       12 | 05-Mar-11 |   235 |        | F      |
|      414 | Gilmore   | Jane     | Junior     | 459558  |        5 | 12-May-11 |   153 | Team A | F      |
|      415 | taylor    | William  | Senior     | 137353  |        7 | 09-Nov-11 |   235 | Team A | M      |
|      461 | Reed      | Robert   | Senior     | 994664  |        3 | 18-Jul-09 |   235 | Team A | M      |
|      487 | Kent      | Susan    | Social     | 707217  |        0 | 19-Sep-14 |     0 |        | F      |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
13 rows in set (0.000 sec)
```

```
MariaDB [lab06]> select * from member where handicap<=20;
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
| memberid | firstname | lastname | membertype | phone   | handicap | joindate  | coach | team   | gender |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
|      153 | Nolen     | Brenda   | Senior     | 442749  |       11 | 24-jul-10 |  NULL | Team B | F      |
|      176 | Branch    | Helen    | Social     | 589419  |        0 | 18-Nov-15 |     0 |        | F      |
|      178 | Beck      | Sarah    | Social     | 226596  |        0 | 06-Jan-14 |     0 |        | F      |
|      235 | Cooper    | Willam   | Senior     | 7229454 |       14 | 12-Feb-12 |   153 | Team B | M      |
|      239 | Spance    | Thomas   | Senior     | 797720  |       10 | 4-jun-10  |     0 |        | M      |
|      258 | Olson     | Barbara  | Senior     | 370168  |       16 | 11-Jul-15 |     0 |        | F      |
|      286 | Pollard   | Robert   | Junior     | 617681  |       19 | 26-jul-15 |   235 | Team B | M      |
|      323 | Wilcox    | Daniel   | Senior     | 665993  |        3 | 30-Apr-13 |     0 | Team A | M      |
|      332 | Bridges   | Deborah  | Senior     | 279087  |       12 | 05-Mar-11 |   235 |        | F      |
|      414 | Gilmore   | Jane     | Junior     | 459558  |        5 | 12-May-11 |   153 | Team A | F      |
|      415 | taylor    | William  | Senior     | 137353  |        7 | 09-Nov-11 |   235 | Team A | M      |
|      461 | Reed      | Robert   | Senior     | 994664  |        3 | 18-Jul-09 |   235 | Team A | M      |
|      487 | Kent      | Susan    | Social     | 707217  |        0 | 19-Sep-14 |     0 |        | F      |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
13 rows in set (0.000 sec)
```

```
MariaDB [lab06]> select * from member where handicap>=10;
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
| memberid | firstname | lastname | membertype | phone   | handicap | joindate  | coach | team   | gender |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
|      118 | Mckenzie  | Meliisa  | Junior     | 963270  |       30 | 10-May-09 |   153 |        | F      |
|      138 | Stone     | Michael  | Senior     | 983223  |       30 | 13-May-13 |     0 |        | M      |
|      153 | Nolen     | Brenda   | Senior     | 442749  |       11 | 24-jul-10 |  NULL | Team B | F      |
|      228 | Burton    | Sandra   | Junior     | 244493  |       26 | 21-Jun-15 |   153 |        | F      |
|      235 | Cooper    | Willam   | Senior     | 7229454 |       14 | 12-Feb-12 |   153 | Team B | M      |
|      239 | Spance    | Thomas   | Senior     | 797720  |       10 | 4-jun-10  |     0 |        | M      |
|      258 | Olson     | Barbara  | Senior     | 370168  |       16 | 11-Jul-15 |     0 |        | F      |
|      286 | Pollard   | Robert   | Junior     | 617681  |       19 | 26-jul-15 |   235 | Team B | M      |
|      290 | Buxton    | Thomas   | Senior     | 268936  |       26 | 10-jul-12 |   235 |        | M      |
|      331 | Schmidt   | Thoma    | Senior     | 867492  |       25 | 20-Mar-13 |   153 |        | M      |
|      332 | Bridges   | Deborah  | Senior     | 279087  |       12 | 05-Mar-11 |   235 |        | F      |
|      339 | Young     | Betty    | Senior     | 507813  |       21 | 30-Mar-13 |     0 | Team B | F      |
|      469 | Willis    | Carolyn  | Junior     | 688378  |       29 | 27-Dec-14 |     0 |        | F      |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
13 rows in set (0.000 sec)
```

Boolean Operators:

```
MariaDB [lab06]> select * from member where memberid = 118 and coach = 153;
+----------+-----------+----------+------------+--------+----------+-----------+-------+------+--------+
| memberid | firstname | lastname | membertype | phone  | handicap | joindate  | coach | team | gender |
+----------+-----------+----------+------------+--------+----------+-----------+-------+------+--------+
|      118 | Mckenzie  | Meliisa  | Junior     | 963270 |       30 | 10-May-09 |   153 |      | F      |
+----------+-----------+----------+------------+--------+----------+-----------+-------+------+--------+
1 row in set (0.001 sec)
```

```
MariaDB [lab06]> select * from member where memberid = 118 or coach = 153;
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
| memberid | firstname | lastname | membertype | phone   | handicap | joindate  | coach | team   | gender |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
|      118 | Mckenzie  | Meliisa  | Junior     | 963270  |       30 | 10-May-09 |   153 |        | F      |
|      228 | Burton    | Sandra   | Junior     | 244493  |       26 | 21-Jun-15 |   153 |        | F      |
|      235 | Cooper    | Willam   | Senior     | 7229454 |       14 | 12-Feb-12 |   153 | Team B | M      |
|      331 | Schmidt   | Thoma    | Senior     | 867492  |       25 | 20-Mar-13 |   153 |        | M      |
|      414 | Gilmore   | Jane     | Junior     | 459558  |        5 | 12-May-11 |   153 | Team A | F      |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
5 rows in set (0.001 sec)
```

```
MariaDB [lab06]> select * from member where not memberid =118;
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
| memberid | firstname | lastname | membertype | phone   | handicap | joindate  | coach | team   | gender |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
|      138 | Stone     | Michael  | Senior     | 983223  |       30 | 13-May-13 |     0 |        | M      |
|      153 | Nolen     | Brenda   | Senior     | 442749  |       11 | 24-jul-10 |  NULL | Team B | F      |
|      176 | Branch    | Helen    | Social     | 589419  |        0 | 18-Nov-15 |     0 |        | F      |
|      178 | Beck      | Sarah    | Social     | 226596  |        0 | 06-Jan-14 |     0 |        | F      |
|      228 | Burton    | Sandra   | Junior     | 244493  |       26 | 21-Jun-15 |   153 |        | F      |
|      235 | Cooper    | Willam   | Senior     | 7229454 |       14 | 12-Feb-12 |   153 | Team B | M      |
|      239 | Spance    | Thomas   | Senior     | 797720  |       10 | 4-jun-10  |     0 |        | M      |
|      258 | Olson     | Barbara  | Senior     | 370168  |       16 | 11-Jul-15 |     0 |        | F      |
|      286 | Pollard   | Robert   | Junior     | 617681  |       19 | 26-jul-15 |   235 | Team B | M      |
|      290 | Buxton    | Thomas   | Senior     | 268936  |       26 | 10-jul-12 |   235 |        | M      |
|      323 | Wilcox    | Daniel   | Senior     | 665993  |        3 | 30-Apr-13 |     0 | Team A | M      |
|      331 | Schmidt   | Thoma    | Senior     | 867492  |       25 | 20-Mar-13 |   153 |        | M      |
|      332 | Bridges   | Deborah  | Senior     | 279087  |       12 | 05-Mar-11 |   235 |        | F      |
|      339 | Young     | Betty    | Senior     | 507813  |       21 | 30-Mar-13 |     0 | Team B | F      |
|      414 | Gilmore   | Jane     | Junior     | 459558  |        5 | 12-May-11 |   153 | Team A | F      |
|      415 | taylor    | William  | Senior     | 137353  |        7 | 09-Nov-11 |   235 | Team A | M      |
|      461 | Reed      | Robert   | Senior     | 994664  |        3 | 18-Jul-09 |   235 | Team A | M      |
|      469 | Willis    | Carolyn  | Junior     | 688378  |       29 | 27-Dec-14 |     0 |        | F      |
|      487 | Kent      | Susan    | Social     | 707217  |        0 | 19-Sep-14 |     0 |        | F      |
+----------+-----------+----------+------------+---------+----------+-----------+-------+--------+--------+
19 rows in set (0.000 sec)
```

Special Operators:

```
MariaDB [lab06]> select * from member where coach is null;
+----------+-----------+----------+------------+--------+----------+-----------+-------+--------+--------+
| memberid | firstname | lastname | membertype | phone  | handicap | joindate  | coach | team   | gender |
+----------+-----------+----------+------------+--------+----------+-----------+-------+--------+--------+
|      153 | Nolen     | Brenda   | Senior     | 442749 |       11 | 24-jul-10 |  NULL | Team B | F      |
+----------+-----------+----------+------------+--------+----------+-----------+-------+--------+--------+
1 row in set (0.031 sec)
```

```
MariaDB [lab06]> select distinct coach from member;
+-------+
| coach |
+-------+
|  NULL |
|     0 |
|   153 |
|   235 |
+-------+
4 rows in set (0.000 sec)
```

```
MariaDB [lab06]> select * from member where handicap in(30,11,26);
+----------+-----------+----------+------------+--------+----------+-----------+-------+--------+--------+
| memberid | firstname | lastname | membertype | phone  | handicap | joindate  | coach | team   | gender |
+----------+-----------+----------+------------+--------+----------+-----------+-------+--------+--------+
|      118 | Mckenzie  | Meliisa  | Junior     | 963270 |       30 | 10-May-09 |   153 |        | F      |
|      138 | Stone     | Michael  | Senior     | 983223 |       30 | 13-May-13 |     0 |        | M      |
|      153 | Nolen     | Brenda   | Senior     | 442749 |       11 | 24-jul-10 |  NULL | Team B | F      |
|      228 | Burton    | Sandra   | Junior     | 244493 |       26 | 21-Jun-15 |   153 |        | F      |
|      290 | Buxton    | Thomas   | Senior     | 268936 |       26 | 10-jul-12 |   235 |        | M      |
+----------+-----------+----------+------------+--------+----------+-----------+-------+--------+--------+
5 rows in set (0.000 sec)
```

```
MariaDB [lab06]> select * from member where firstname like 'M%';
+----------+-----------+----------+------------+--------+----------+-----------+-------+------+--------+
| memberid | firstname | lastname | membertype | phone  | handicap | joindate  | coach | team | gender |
+----------+-----------+----------+------------+--------+----------+-----------+-------+------+--------+
|      118 | Mckenzie  | Meliisa  | Junior     | 963270 |       30 | 10-May-09 |   153 |      | F      |
+----------+-----------+----------+------------+--------+----------+-----------+-------+------+--------+
1 row in set (0.000 sec)
```

```
MariaDB [lab06]> select * from member where memberid between 138 and 220;
+----------+-----------+----------+------------+--------+----------+-----------+-------+--------+--------+
| memberid | firstname | lastname | membertype | phone  | handicap | joindate  | coach | team   | gender |
+----------+-----------+----------+------------+--------+----------+-----------+-------+--------+--------+
|      138 | Stone     | Michael  | Senior     | 983223 |       30 | 13-May-13 |     0 |        | M      |
|      153 | Nolen     | Brenda   | Senior     | 442749 |       11 | 24-jul-10 |  NULL | Team B | F      |
|      176 | Branch    | Helen    | Social     | 589419 |        0 | 18-Nov-15 |     0 |        | F      |
|      178 | Beck      | Sarah    | Social     | 226596 |        0 | 06-Jan-14 |     0 |        | F      |
+----------+-----------+----------+------------+--------+----------+-----------+-------+--------+--------+
4 rows in set (0.001 sec)
```

TASK 6.9:

Alter is an important command of MySQL. It is used to alter variety of things associated with a database. It can alter the overall characteristics of database, metadata, view, function, procedure, event, and user. Alter table is used specifically for altering the table metadata. Write MySql statements involving alter table for following:

a. Add new column DOB to store member date of birth. Its type is date and can be null.

```
MariaDB [lab06]> alter table member add column DOB date;
Query OK, 0 rows affected (0.215 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

b. Now change the name of newly added column from DOB to M_DOB with date as data type and not null.

```
MariaDB [lab06]> alter table member change DOB M_DOB date not null;
Query OK, 0 rows affected, 20 warnings (0.515 sec)
Records: 0  Duplicates: 0  Warnings: 20

MariaDB [lab06]> describe member;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| memberid   | int(11)     | NO   | PRI | NULL    |       |
| firstname  | varchar(30) | YES  |     | NULL    |       |
| lastname   | varchar(30) | YES  |     | NULL    |       |
| membertype | varchar(30) | YES  | MUL | NULL    |       |
| phone      | varchar(30) | YES  |     | NULL    |       |
| handicap   | int(11)     | YES  |     | NULL    |       |
| joindate   | varchar(30) | YES  |     | NULL    |       |
| coach      | int(11)     | YES  | MUL | NULL    |       |
| team       | varchar(30) | YES  |     | NULL    |       |
| gender     | varchar(30) | YES  |     | NULL    |       |
| M_DOB      | date        | NO   |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
```

c. Now drop the M_DOB column from member table.

```
MariaDB [lab06]> alter table member drop column M_DOB;
Query OK, 0 rows affected (0.098 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [lab06]> describe member;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| memberid   | int(11)     | NO   | PRI | NULL    |       |
| firstname  | varchar(30) | YES  |     | NULL    |       |
| lastname   | varchar(30) | YES  |     | NULL    |       |
| membertype | varchar(30) | YES  | MUL | NULL    |       |
| phone      | varchar(30) | YES  |     | NULL    |       |
| handicap   | int(11)     | YES  |     | NULL    |       |
| joindate   | varchar(30) | YES  |     | NULL    |       |
| coach      | int(11)     | YES  | MUL | NULL    |       |
| team       | varchar(30) | YES  |     | NULL    |       |
| gender     | varchar(30) | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
10 rows in set (0.074 sec)
```

d. Next drop the primary key TourID from tournament table.

```
MariaDB [lab06]> alter table tournament drop primary key;
ERROR 1025 (HY000): Error on rename of '.\lab06\#sql-3344_12' to '.\lab06\tournament' (errno: 150 "Foreign key constraint is incorrectly formed")
MariaDB [lab06]> describe tournament;
```

e. Next drop the foreign key Coach from member table.

```
MariaDB [lab06]> alter table member drop foreign key coach;
ERROR 1091 (42000): Can't DROP FOREIGN KEY `coach`; check that it exists
```