Task1: Modifying Columns:

1)alter table **lab_grades** add **project_title** char(10);
(This command lets us add a new column to an existing column in a table.)

```
MariaDB [shabab_cse370_spring23]> alter table lab_grades add project_title char(10);
Query OK, 0 rows affected (0.053 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [shabab_cse370_spring23]> select * from lab_grades;
+------------+---------+-------+---------+--------------+---------------+------+-----------------+---------------+
| student_id | name    | major | section | days_present | project_marks | cgpa | submission_date | project_title |
+------------+---------+-------+---------+--------------+---------------+------+-----------------+---------------+
| soo1       | Abir    | CS    | 1       |           10 |          18.5 | 3.91 | 2018-09-16      | NULL          |
| s019       | Naima   | CSE   | 2       |           12 |            20 | 3.70 | 2018-08-14      | NULL          |
| s002       | Nafis   | CSE   | 1       |           12 |            20 | 3.86 | 2018-08-15      | NULL          |
| s003       | Tasneem | CS    | 1       |            8 |            18 | 3.57 | 2018-09-18      | NULL          |
| s004       | Nahid   | ECE   | 2       |            7 |          16.5 | 3.25 | 2018-08-20      | NULL          |
| s005       | Arafat  | CS    | 2       |           11 |            20 | 4.00 | 2018-09-13      | NULL          |
| s006       | Tasneem | CSE   | 1       |           12 |          17.5 | 3.70 | 2018-08-15      | NULL          |
| s007       | Muhtadi | ECE   | 1       |           10 |             9 | 3.67 | 2018-09-16      | NULL          |
| s008       | Farhana | CSE   | 2       |            6 |            15 | 2.67 | 2018-08-16      | NULL          |
+------------+---------+-------+---------+--------------+---------------+------+-----------------+---------------+
9 rows in set (0.000 sec)

MariaDB [shabab_cse370_spring23]> describe lab_grades;
+-----------------+--------------+------+-----+---------+-------+
| Field           | Type         | Null | Key | Default | Extra |
+-----------------+--------------+------+-----+---------+-------+
| student_id      | char(4)      | YES  |     | NULL    |       |
| name            | varchar(30)  | YES  |     | NULL    |       |
| major           | char(3)      | YES  |     | NULL    |       |
| section         | char(1)      | YES  |     | NULL    |       |
| days_present    | int(11)      | YES  |     | NULL    |       |
| project_marks   | double       | YES  |     | NULL    |       |
| cgpa            | decimal(3,2) | YES  |     | NULL    |       |
| submission_date | date         | YES  |     | NULL    |       |
| project_title   | char(10)     | YES  |     | NULL    |       |
+-----------------+--------------+------+-----+---------+-------+
9 rows in set (0.015 sec)
```

2) alter table **lab_grades** modify column **project_title** varchar(50);
(This command lets us modify the data type of an existing attribute. In this scenario, it was modified from char to varchar.)

```
MariaDB [shabab_cse370_spring23]> alter table lab_grades modify column project_title varchar(50);
Query OK, 9 rows affected (0.085 sec)
Records: 9  Duplicates: 0  Warnings: 0

MariaDB [shabab_cse370_spring23]> describe lab_grades;
+-----------------+--------------+------+-----+---------+-------+
| Field           | Type         | Null | Key | Default | Extra |
+-----------------+--------------+------+-----+---------+-------+
| student_id      | char(4)      | YES  |     | NULL    |       |
| name            | varchar(30)  | YES  |     | NULL    |       |
| major           | char(3)      | YES  |     | NULL    |       |
| section         | char(1)      | YES  |     | NULL    |       |
| days_present    | int(11)      | YES  |     | NULL    |       |
| project_marks   | double       | YES  |     | NULL    |       |
| cgpa            | decimal(3,2) | YES  |     | NULL    |       |
| submission_date | date         | YES  |     | NULL    |       |
| project_title   | varchar(50)  | YES  |     | NULL    |       |
+-----------------+--------------+------+-----+---------+-------+
9 rows in set (0.013 sec)

MariaDB [shabab_cse370_spring23]> select * from lab_grades;
+------------+---------+-------+---------+--------------+---------------+------+-----------------+---------------+
| student_id | name    | major | section | days_present | project_marks | cgpa | submission_date | project_title |
+------------+---------+-------+---------+--------------+---------------+------+-----------------+---------------+
| soo1       | Abir    | CS    | 1       |           10 |          18.5 | 3.91 | 2018-09-16      | NULL          |
| s019       | Naima   | CSE   | 2       |           12 |            20 | 3.70 | 2018-08-14      | NULL          |
| s002       | Nafis   | CSE   | 1       |           12 |            20 | 3.86 | 2018-08-15      | NULL          |
| s003       | Tasneem | CS    | 1       |            8 |            18 | 3.57 | 2018-09-18      | NULL          |
| s004       | Nahid   | ECE   | 2       |            7 |          16.5 | 3.25 | 2018-08-20      | NULL          |
| s005       | Arafat  | CS    | 2       |           11 |            20 | 4.00 | 2018-09-13      | NULL          |
| s006       | Tasneem | CSE   | 1       |           12 |          17.5 | 3.70 | 2018-08-15      | NULL          |
| s007       | Muhtadi | ECE   | 1       |           10 |             9 | 3.67 | 2018-09-16      | NULL          |
| s008       | Farhana | CSE   | 2       |            6 |            15 | 2.67 | 2018-08-16      | NULL          |
+------------+---------+-------+---------+--------------+---------------+------+-----------------+---------------+
9 rows in set (0.001 sec)
```

3) alter table **lab_grades** drop column **project_title**;
(This command lets us drop an attribute from the data table.)

```
MariaDB [shabab_cse370_spring23]> alter table lab_grades drop column project_title;
Query OK, 0 rows affected (0.014 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [shabab_cse370_spring23]> describe lab_grades;
+----------------+-------------+------+-----+---------+-------+
| Field          | Type        | Null | Key | Default | Extra |
+----------------+-------------+------+-----+---------+-------+
| student_id     | char(4)     | YES  |     | NULL    |       |
| name           | varchar(30) | YES  |     | NULL    |       |
| major          | char(3)     | YES  |     | NULL    |       |
| section        | char(1)     | YES  |     | NULL    |       |
| days_present   | int(11)     | YES  |     | NULL    |       |
| project_marks  | double      | YES  |     | NULL    |       |
| cgpa           | decimal(3,2)| YES  |     | NULL    |       |
| submission_date| date        | YES  |     | NULL    |       |
+----------------+-------------+------+-----+---------+-------+
8 rows in set (0.006 sec)

MariaDB [shabab_cse370_spring23]> select * from lab_grades;
+------------+---------+-------+---------+--------------+---------------+------+-----------------+
| student_id | name    | major | section | days_present | project_marks | cgpa | submission_date |
+------------+---------+-------+---------+--------------+---------------+------+-----------------+
| soo1       | Abir    | CS    | 1       |           10 |          18.5 | 3.91 | 2018-09-16      |
| s019       | Naima   | CSE   | 2       |           12 |            20 | 3.70 | 2018-08-14      |
| s002       | Nafis   | CSE   | 1       |           12 |            20 | 3.86 | 2018-08-15      |
| s003       | Tasneem | CS    | 1       |            8 |            18 | 3.57 | 2018-09-18      |
| s004       | Nahid   | ECE   | 2       |            7 |          16.5 | 3.25 | 2018-08-20      |
| s005       | Arafat  | CS    | 2       |           11 |            20 | 4.00 | 2018-09-13      |
| s006       | Tasneem | CSE   | 1       |           12 |          17.5 | 3.70 | 2018-08-15      |
| s007       | Muhtadi | ECE   | 1       |           10 |             9 | 3.67 | 2018-09-16      |
| s008       | Farhana | CSE   | 2       |            6 |            15 | 2.67 | 2018-08-16      |
+------------+---------+-------+---------+--------------+---------------+------+-----------------+
9 rows in set (0.000 sec)
```

4) alter table **lab_grades** change **submission_date sub_date** date;
(This command allows us to change the name of an attribute)

```
[MariaDB [shabab_cse370_spring23]> alter table lab_grades change submission_date sub_date date;
Query OK, 0 rows affected (0.025 sec)
Records: 0  Duplicates: 0  Warnings: 0

[MariaDB [shabab_cse370_spring23]> describe lab_grades;
+---------------+--------------+------+-----+---------+-------+
| Field         | Type         | Null | Key | Default | Extra |
+---------------+--------------+------+-----+---------+-------+
| student_id    | char(4)      | YES  |     | NULL    |       |
| name          | varchar(30)  | YES  |     | NULL    |       |
| major         | char(3)      | YES  |     | NULL    |       |
| section       | char(1)      | YES  |     | NULL    |       |
| days_present  | int(11)      | YES  |     | NULL    |       |
| project_marks | double       | YES  |     | NULL    |       |
| cgpa          | decimal(3,2) | YES  |     | NULL    |       |
| sub_date      | date         | YES  |     | NULL    |       |
+---------------+--------------+------+-----+---------+-------+
8 rows in set (0.012 sec)

[MariaDB [shabab_cse370_spring23]> select * from lab_grades;
+------------+---------+-------+---------+--------------+---------------+------+------------+
| student_id | name    | major | section | days_present | project_marks | cgpa | sub_date   |
+------------+---------+-------+---------+--------------+---------------+------+------------+
| soo1       | Abir    | CSE   | 1       |           10 |          18.5 | 3.91 | 2018-09-16 |
| s002       | Nafis   | CSE   | 1       |           12 |            20 | 3.86 | 2018-08-15 |
| s003       | Tasneem | CSE   | 1       |            8 |            18 | 3.57 | 2018-09-18 |
| s005       | Arafat  | CSE   | 2       |           11 |            20 | 4.00 | 2018-09-13 |
| s006       | Tasneem | CSE   | 1       |           12 |          17.5 | 3.70 | 2018-08-15 |
| s007       | Muhtadi | CSE   | 1       |           10 |             9 | 3.67 | 2018-09-16 |
+------------+---------+-------+---------+--------------+---------------+------+------------+
6 rows in set (0.002 sec)
```

Task2: Updating wrong data:

1)update **lab_grades** set **major** = **'CSE'** where **name** = '**Arafat**';
(This command allows us to change the data of a specific attribute by locating it using one unique identity. In this case we located it using name.)

```
MariaDB [shabab_cse370_spring23]> update lab_grades set major = 'CSE' where name = 'Arafat';
Query OK, 1 row affected (0.051 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [shabab_cse370_spring23]> select * from lab_grades;
+------------+---------+-------+---------+--------------+---------------+------+-----------------+
| student_id | name    | major | section | days_present | project_marks | cgpa | submission_date |
+------------+---------+-------+---------+--------------+---------------+------+-----------------+
| soo1       | Abir    | CS    | 1       |           10 |          18.5 | 3.91 | 2018-09-16      |
| s019       | Naima   | CSE   | 2       |           12 |            20 | 3.70 | 2018-08-14      |
| s002       | Nafis   | CSE   | 1       |           12 |            20 | 3.86 | 2018-08-15      |
| s003       | Tasneem | CS    | 1       |            8 |            18 | 3.57 | 2018-09-18      |
| s004       | Nahid   | ECE   | 2       |            7 |          16.5 | 3.25 | 2018-08-20      |
| s005       | Arafat  | CSE   | 2       |           11 |            20 | 4.00 | 2018-09-13      |
| s006       | Tasneem | CSE   | 1       |           12 |          17.5 | 3.70 | 2018-08-15      |
| s007       | Muhtadi | ECE   | 1       |           10 |             9 | 3.67 | 2018-09-16      |
| s008       | Farhana | CSE   | 2       |            6 |            15 | 2.67 | 2018-08-16      |
+------------+---------+-------+---------+--------------+---------------+------+-----------------+
9 rows in set (0.001 sec)
```

2) update **lab_grades** set name = '**Naheed**', **project_marks** = **16** where **student_id** = '**s004**';

```
MariaDB [shabab_cse370_spring23]> update lab_grades set name = 'Naheed', project_marks = 16 where student_id = 's004';
Query OK, 1 row affected (0.003 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [shabab_cse370_spring23]> select * from lab_grades;
+------------+---------+-------+---------+--------------+---------------+------+-----------------+
| student_id | name    | major | section | days_present | project_marks | cgpa | submission_date |
+------------+---------+-------+---------+--------------+---------------+------+-----------------+
| soo1       | Abir    | CS    | 1       |           10 |          18.5 | 3.91 | 2018-09-16      |
| s019       | Naima   | CSE   | 2       |           12 |            20 | 3.70 | 2018-08-14      |
| s002       | Nafis   | CSE   | 1       |           12 |            20 | 3.86 | 2018-08-15      |
| s003       | Tasneem | CS    | 1       |            8 |            18 | 3.57 | 2018-09-18      |
| s004       | Naheed  | ECE   | 2       |            7 |            16 | 3.25 | 2018-08-20      |
| s005       | Arafat  | CSE   | 2       |           11 |            20 | 4.00 | 2018-09-13      |
| s006       | Tasneem | CSE   | 1       |           12 |          17.5 | 3.70 | 2018-08-15      |
| s007       | Muhtadi | ECE   | 1       |           10 |             9 | 3.67 | 2018-09-16      |
| s008       | Farhana | CSE   | 2       |            6 |            15 | 2.67 | 2018-08-16      |
+------------+---------+-------+---------+--------------+---------------+------+-----------------+
9 rows in set (0.001 sec)
```

3)update **lab_grades** set **major** = '**CSE**';

(as where is not used to mention about any specific row, as a result this command changes the major of each row to the one mentioned.)

```
MariaDB [shabab_cse370_spring23]> update lab_grades set major = 'CSE';
Query OK, 4 rows affected (0.007 sec)
Rows matched: 9  Changed: 4  Warnings: 0

MariaDB [shabab_cse370_spring23]> select * from lab_grades;
+------------+---------+-------+---------+--------------+---------------+------+-----------------+
| student_id | name    | major | section | days_present | project_marks | cgpa | submission_date |
+------------+---------+-------+---------+--------------+---------------+------+-----------------+
| soo1       | Abir    | CSE   | 1       |           10 |          18.5 | 3.91 | 2018-09-16      |
| s019       | Naima   | CSE   | 2       |           12 |            20 | 3.70 | 2018-08-14      |
| s002       | Nafis   | CSE   | 1       |           12 |            20 | 3.86 | 2018-08-15      |
| s003       | Tasneem | CSE   | 1       |            8 |            18 | 3.57 | 2018-09-18      |
| s004       | Naheed  | CSE   | 2       |            7 |            16 | 3.25 | 2018-08-20      |
| s005       | Arafat  | CSE   | 2       |           11 |            20 | 4.00 | 2018-09-13      |
| s006       | Tasneem | CSE   | 1       |           12 |          17.5 | 3.70 | 2018-08-15      |
| s007       | Muhtadi | CSE   | 1       |           10 |             9 | 3.67 | 2018-09-16      |
| s008       | Farhana | CSE   | 2       |            6 |            15 | 2.67 | 2018-08-16      |
+------------+---------+-------+---------+--------------+---------------+------+-----------------+
9 rows in set (0.008 sec)
```

Task3: Deleting Data:

1)delete from **lab_grades** where name = '**Naima**';

```
MariaDB [shabab_cse370_spring23]> delete from lab_grades where name = 'Naima';
Query OK, 1 row affected (0.029 sec)

MariaDB [shabab_cse370_spring23]> select * from lab_grades;
+------------+---------+-------+---------+--------------+---------------+------+-----------------+
| student_id | name    | major | section | days_present | project_marks | cgpa | submission_date |
+------------+---------+-------+---------+--------------+---------------+------+-----------------+
| soo1       | Abir    | CSE   | 1       |           10 |          18.5 | 3.91 | 2018-09-16      |
| s002       | Nafis   | CSE   | 1       |           12 |            20 | 3.86 | 2018-08-15      |
| s003       | Tasneem | CSE   | 1       |            8 |            18 | 3.57 | 2018-09-18      |
| s004       | Naheed  | CSE   | 2       |            7 |            16 | 3.25 | 2018-08-20      |
| s005       | Arafat  | CSE   | 2       |           11 |            20 | 4.00 | 2018-09-13      |
| s006       | Tasneem | CSE   | 1       |           12 |          17.5 | 3.70 | 2018-08-15      |
| s007       | Muhtadi | CSE   | 1       |           10 |             9 | 3.67 | 2018-09-16      |
| s008       | Farhana | CSE   | 2       |            6 |            15 | 2.67 | 2018-08-16      |
+------------+---------+-------+---------+--------------+---------------+------+-----------------+
8 rows in set (0.002 sec)
```

2)delete from **lab_grades** where days_present < 8;

(In this particular query a condition was mentioned so that deletion takes place only when the condition becomes true.)

```
MariaDB [shabab_cse370_spring23]> delete from lab_grades where days_present < 8;
Query OK, 2 rows affected (0.025 sec)

MariaDB [shabab_cse370_spring23]> select * from lab_grades;
+------------+---------+-------+---------+--------------+---------------+------+-----------------+
| student_id | name    | major | section | days_present | project_marks | cgpa | submission_date |
+------------+---------+-------+---------+--------------+---------------+------+-----------------+
| soo1       | Abir    | CSE   | 1       |           10 |          18.5 | 3.91 | 2018-09-16      |
| s002       | Nafis   | CSE   | 1       |           12 |            20 | 3.86 | 2018-08-15      |
| s003       | Tasneem | CSE   | 1       |            8 |            18 | 3.57 | 2018-09-18      |
| s005       | Arafat  | CSE   | 2       |           11 |            20 | 4.00 | 2018-09-13      |
| s006       | Tasneem | CSE   | 1       |           12 |          17.5 | 3.70 | 2018-08-15      |
| s007       | Muhtadi | CSE   | 1       |           10 |             9 | 3.67 | 2018-09-16      |
+------------+---------+-------+---------+--------------+---------------+------+-----------------+
6 rows in set (0.001 sec)
```

Task4: Deleting table of Database:
To delete a table: drop table **lab_grades;**
To delete a database: drop database **shabab_cse370_spring23;**

TASK5: Retrieving Data from Table:

1)select **student_id**, **name**, **project_marks** from **lab_grades**;
(This command is used to see only the necessary collumns)

```
MariaDB [shabab_cse370_spring23]> select student_id, name, project_marks from lab_grades;
+------------+---------+---------------+
| student_id | name    | project_marks |
+------------+---------+---------------+
| soo1       | Abir    |          18.5 |
| s002       | Nafis   |            20 |
| s003       | Tasneem |            18 |
| s005       | Arafat  |            20 |
| s006       | Tasneem |          17.5 |
| s007       | Muhtadi |             9 |
+------------+---------+---------------+
6 rows in set (0.004 sec)
```

2) select name, project_marks+days_present*5/12 as total_marks from lab_grades;

(This command is used to do necessary arithmetics and get the result in a separate temporary column.)

```
MariaDB [shabab_cse370_spring23]> select name, project_marks+days_present*5/12 as total_marks from lab_grades;
+---------+--------------------+
| name    | total_marks        |
+---------+--------------------+
| Abir    |       22.666666666 |
| Nafis   |                 25 |
| Tasneem |       21.333333333 |
| Arafat  |       24.583333333 |
| Tasneem |               22.5 |
| Muhtadi | 13.166666666000001 |
+---------+--------------------+
6 rows in set (0.024 sec)
```

What if we dont use the word as? Let's check it out!

```
MariaDB [shabab_cse370_spring23]> select name, project_marks+days_present*5/12 from lab_grades;
+---------+-----------------------------------+
| name    | project_marks+days_present*5/12   |
+---------+-----------------------------------+
| Abir    |                      22.666666666 |
| Nafis   |                                25 |
| Tasneem |                      21.333333333 |
| Arafat  |                      24.583333333 |
| Tasneem |                              22.5 |
| Muhtadi |               13.166666666000001 |
+---------+-----------------------------------+
6 rows in set (0.004 sec)
```

3)select upper(**name**), lower(**name**) from **lab_grades**;
(This command as the name implies returns all the characters of the attribute as upper or lower depending upon the function being used.)

```
MariaDB [shabab_cse370_spring23]> select upper(name), lower(name) from lab_grades;
+-------------+-------------+
| upper(name) | lower(name) |
+-------------+-------------+
| ABIR        | abir        |
| NAFIS       | nafis       |
| TASNEEM     | tasneem     |
| ARAFAT      | arafat      |
| TASNEEM     | tasneem     |
| MUHTADI     | muhtadi     |
+-------------+-------------+
6 rows in set (0.036 sec)
```

4) select **major** from **lab_grades**;
select distinct **major** from **lab_grades**;

(The first command returns all the majors available on the table while adding the word distinct i.e. the second command returns only the unique data present under that particular column.)

```
MariaDB [shabab_cse370_spring23]> select major from lab_grades;
+-------+
| major |
+-------+
| CSE   |
| CSE   |
| CSE   |
| CSE   |
| CSE   |
| CSE   |
+-------+
6 rows in set (0.009 sec)

MariaDB [shabab_cse370_spring23]> select distinct major from lab_grades;
+-------+
| major |
+-------+
| CSE   |
+-------+
1 row in set (0.018 sec)
```

5)(What if we want to get a sorted table by the order of name?)
select * from **lab_grades** order by **name**;

```
MariaDB [shabab_cse370_spring23]> select * from lab_grades order by name;
+------------+---------+-------+---------+--------------+---------------+------+------------+
| student_id | name    | major | section | days_present | project_marks | cgpa | sub_date   |
+------------+---------+-------+---------+--------------+---------------+------+------------+
| soo1       | Abir    | CSE   | 1       |           10 |          18.5 | 3.91 | 2018-09-16 |
| s005       | Arafat  | CSE   | 2       |           11 |            20 | 4.00 | 2018-09-13 |
| s007       | Muhtadi | CSE   | 1       |           10 |             9 | 3.67 | 2018-09-16 |
| s002       | Nafis   | CSE   | 1       |           12 |            20 | 3.86 | 2018-08-15 |
| s003       | Tasneem | CSE   | 1       |            8 |            18 | 3.57 | 2018-09-18 |
| s006       | Tasneem | CSE   | 1       |           12 |          17.5 | 3.70 | 2018-08-15 |
+------------+---------+-------+---------+--------------+---------------+------+------------+
6 rows in set (0.034 sec)
```

This was sorted in ascending order. What if we want to sort it in descending order?

select * from **lab_grades** order by **name** desc, **sub_date** asc;
(What this particular command will do is first it will sort the table by descending order as “desc” is specifically mentioned for the first part and then if it finds the name of two students to be same then it will sort them by their submission date in ascending order as mentioned in the second part of the command)

```
MariaDB [shabab_cse370_spring23]> select * from lab_grades order by name desc, sub_date asc;
+------------+---------+-------+---------+--------------+---------------+------+------------+
| student_id | name    | major | section | days_present | project_marks | cgpa | sub_date   |
+------------+---------+-------+---------+--------------+---------------+------+------------+
| s006       | Tasneem | CSE   | 1       |           12 |          17.5 | 3.70 | 2018-08-15 |
| s003       | Tasneem | CSE   | 1       |            8 |            18 | 3.57 | 2018-09-18 |
| s002       | Nafis   | CSE   | 1       |           12 |            20 | 3.86 | 2018-08-15 |
| s007       | Muhtadi | CSE   | 1       |           10 |             9 | 3.67 | 2018-09-16 |
| s005       | Arafat  | CSE   | 2       |           11 |            20 | 4.00 | 2018-09-13 |
| soo1       | Abir    | CSE   | 1       |           10 |          18.5 | 3.91 | 2018-09-16 |
+------------+---------+-------+---------+--------------+---------------+------+------------+
6 rows in set (0.008 sec)
```

12) (Say, from the whole table we are only interested on the data of name and project marks of only CSE students.)
select **name**, **project_marks** from **lab_grades** where **major** = '**CSE**';

```
MariaDB [shabab_cse370_spring23]> select name, project_marks from lab_grades where major = 'CSE';
+---------+---------------+
| name    | project_marks |
+---------+---------------+
| Abir    |          18.5 |
| Nafis   |            20 |
| Tasneem |            18 |
| Arafat  |            20 |
| Tasneem |          17.5 |
| Muhtadi |             9 |
+---------+---------------+
6 rows in set (0.033 sec)
```

13) (But now we are only interested about those whose project marks is between 17 and 19)

select **name**, **project_marks** from **lab_grades** where **project_marks** between 17 and 19;

```
MariaDB [shabab_cse370_spring23]> select name, project_marks from lab_grades where project_marks between 17 and 19;
+---------+---------------+
| name    | project_marks |
+---------+---------------+
| Abir    |          18.5 |
| Tasneem |            18 |
| Tasneem |          17.5 |
+---------+---------------+
3 rows in set (0.019 sec)
```

14) (We want to retrieve informations about those who either studies cse or cs)
select * from **lab_grades** where **major** in ('**CSE**','**CS**');

```
MariaDB [shabab_cse370_spring23]> select * from lab_grades where major in ('CSE','CS');
+------------+---------+-------+---------+--------------+---------------+------+------------+
| student_id | name    | major | section | days_present | project_marks | cgpa | sub_date   |
+------------+---------+-------+---------+--------------+---------------+------+------------+
| soo1       | Abir    | CSE   | 1       |           10 |          18.5 | 3.91 | 2018-09-16 |
| s002       | Nafis   | CSE   | 1       |           12 |            20 | 3.86 | 2018-08-15 |
| s003       | Tasneem | CSE   | 1       |            8 |            18 | 3.57 | 2018-09-18 |
| s005       | Arafat  | CSE   | 2       |           11 |            20 | 4.00 | 2018-09-13 |
| s006       | Tasneem | CSE   | 1       |           12 |          17.5 | 3.70 | 2018-08-15 |
| s007       | Muhtadi | CSE   | 1       |           10 |             9 | 3.67 | 2018-09-16 |
+------------+---------+-------+---------+--------------+---------------+------+------------+
6 rows in set (0.018 sec)
```

15) (Adding more than one condition)
select * from **lab_grades** where **project_marks**>18 and **sub_date** between '**2018-08-01**' and '**2018-08-31**';

```
MariaDB [shabab_cse370_spring23]> select * from lab_grades where project_marks>18 and sub_date between '2018-08-01' and '2018-08-31';
+------------+-------+-------+---------+--------------+---------------+------+------------+
| student_id | name  | major | section | days_present | project_marks | cgpa | sub_date   |
+------------+-------+-------+---------+--------------+---------------+------+------------+
| s002       | Nafis | CSE   | 1       |           12 |            20 | 3.86 | 2018-08-15 |
+------------+-------+-------+---------+--------------+---------------+------+------------+
1 row in set (0.004 sec)
```

16) (Retrieving students details of those whose name starts with ‘a’)
select * from **lab_grades** where **name** like 'a%';

```
MariaDB [shabab_cse370_spring23]> select * from lab_grades where name like 'a%';
+------------+--------+-------+---------+--------------+---------------+------+------------+
| student_id | name   | major | section | days_present | project_marks | cgpa | sub_date   |
+------------+--------+-------+---------+--------------+---------------+------+------------+
| soo1       | Abir   | CSE   | 1       |           10 |          18.5 | 3.91 | 2018-09-16 |
| s005       | Arafat | CSE   | 2       |           11 |            20 | 4.00 | 2018-09-13 |
+------------+--------+-------+---------+--------------+---------------+------+------------+
2 rows in set (0.018 sec)
```

17) (Retrieve the details of students whose name contains at least 2 a’s)
select * from **lab_grades** where **name** like '%a%a%';

```
MariaDB [shabab_cse370_spring23]> select * from lab_grades where name like '%a%a%';
+------------+--------+-------+---------+--------------+---------------+------+------------+
| student_id | name   | major | section | days_present | project_marks | cgpa | sub_date   |
+------------+--------+-------+---------+--------------+---------------+------+------------+
| s005       | Arafat | CSE   | 2       |           11 |            20 | 4.00 | 2018-09-13 |
+------------+--------+-------+---------+--------------+---------------+------+------------+
1 row in set (0.009 sec)
```

18) (what if we want to find an individual whose name starts with a alphabet and ends in plus more three letters.)
select * from **lab_grades** where **name** like 'a___';

```
MariaDB [shabab_cse370_spring23]> select * from lab_grades where name like 'a___';
+------------+------+-------+---------+--------------+---------------+------+------------+
| student_id | name | major | section | days_present | project_marks | cgpa | sub_date   |
+------------+------+-------+---------+--------------+---------------+------+------------+
| soo1       | Abir | CSE   | 1       |           10 |          18.5 | 3.91 | 2018-09-16 |
+------------+------+-------+---------+--------------+---------------+------+------------+
1 row in set (0.002 sec)
```