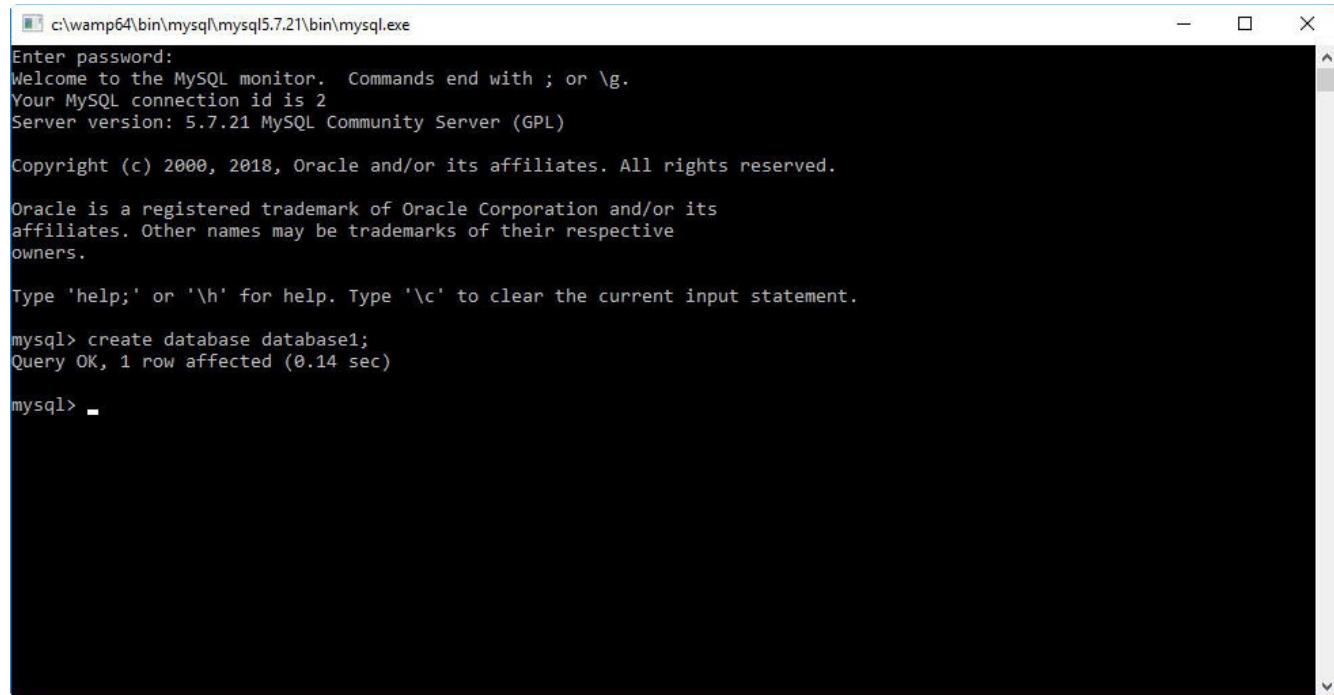


Command to create a database in mysql



```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 2
Server version: 5.7.21 MySQL Community Server (GPL)

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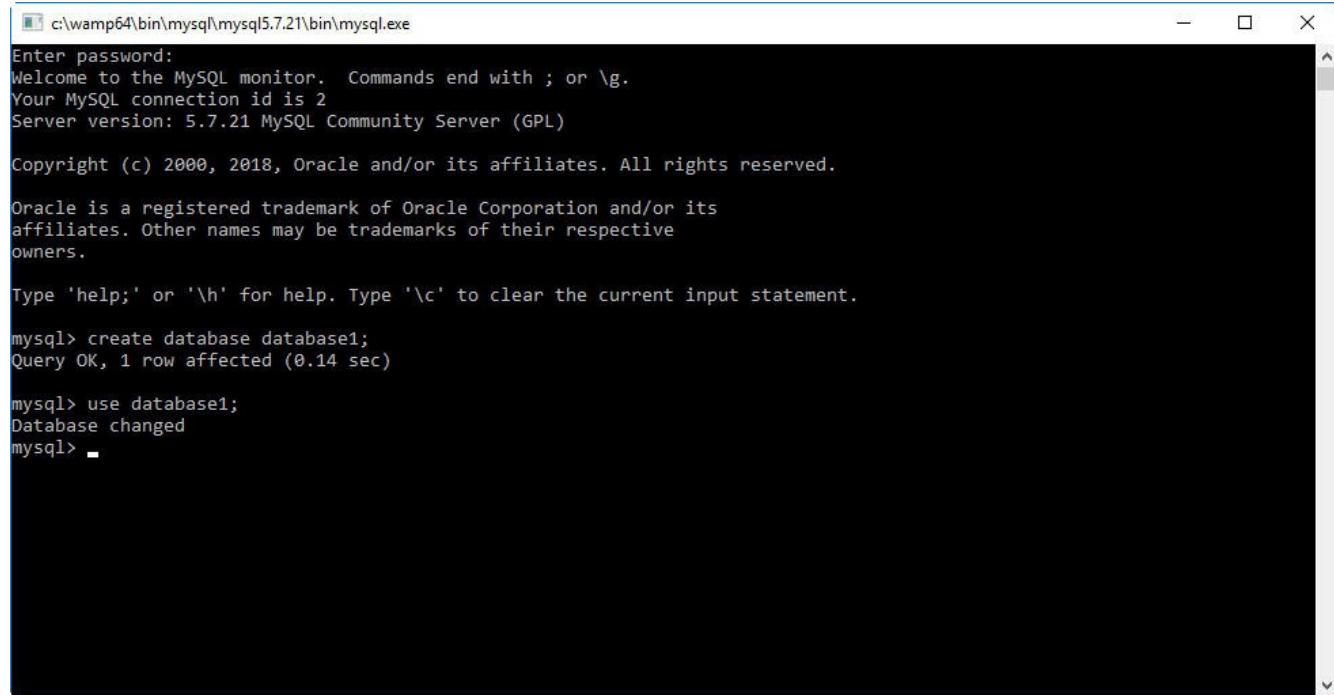
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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> create database database1;
Query OK, 1 row affected (0.14 sec)

mysql> -
```

command to select a database to start working in the database



```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 2
Server version: 5.7.21 MySQL Community Server (GPL)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> create database database1;
Query OK, 1 row affected (0.14 sec)

mysql> use database1;
Database changed
mysql> -
```

command to create a table students with columns as rollno, name and marks

rollno is int

name is group of characters

marks is int

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 2
Server version: 5.7.21 MySQL Community Server (GPL)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> create database database1;
Query OK, 1 row affected (0.14 sec)

mysql> use database1;
Database changed
mysql> create table students(rollno int,name varchar(20),marks int);
Query OK, 0 rows affected (0.12 sec)

mysql> -
```

commands to insert values in table students

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
mysql> use database1;
Database changed
mysql> create table students(rollno int,name varchar(20),marks int);
Query OK, 0 rows affected (0.12 sec)

mysql> insert into students values(1,'raman',90);
Query OK, 1 row affected (0.14 sec)

mysql> insert into students values(2,'gagan',80);
Query OK, 1 row affected (0.00 sec)

mysql> insert into students values(3,'aman',85);
Query OK, 1 row affected (0.00 sec)

mysql> insert into students values(4,'harpreet',78);
Query OK, 1 row affected (0.00 sec)

mysql> insert into students values(5,'amanpreet',76);
Query OK, 1 row affected (0.00 sec)

mysql> -
```

command to select all rows and columns from table students

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
Query OK, 1 row affected (0.00 sec)

mysql> select * from students;
+-----+-----+-----+
| rollno | name   | marks |
+-----+-----+-----+
|    1   | raman  |    90 |
|    2   | gagan  |    80 |
|    3   | aman   |    85 |
|    4   | harpreet |    78 |
|    5   | amanpreet |    76 |
+-----+-----+-----+
5 rows in set (0.05 sec)

mysql>
```

command to select only columns rollno and name from students

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
Query OK, 1 row affected (0.00 sec)

mysql> select * from students;
+-----+-----+-----+
| rollno | name   | marks |
+-----+-----+-----+
|    1   | raman  |    90 |
|    2   | gagan  |    80 |
|    3   | aman   |    85 |
|    4   | harpreet |    78 |
|    5   | amanpreet |    76 |
+-----+-----+-----+
5 rows in set (0.05 sec)

mysql> select rollno,name from students;
+-----+-----+
| rollno | name   |
+-----+-----+
|    1   | raman  |
|    2   | gagan  |
|    3   | aman   |
|    4   | harpreet |
|    5   | amanpreet |
+-----+-----+
5 rows in set (0.05 sec)

mysql>
```

command to display all columns of table students where rollno is equal to 1

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
5 rows in set (0.05 sec)

mysql> select * from students where rollno=1;
+-----+-----+-----+
| rollno | name  | marks |
+-----+-----+-----+
|     1  | raman |    90 |
+-----+-----+-----+
1 row in set (0.07 sec)

mysql> -
```

select all columns from table students where rollno is greater than 3

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
5 rows in set (0.05 sec)

mysql> select * from students where rollno=1;
+-----+-----+-----+
| rollno | name  | marks |
+-----+-----+-----+
|     1  | raman |    90 |
+-----+-----+-----+
1 row in set (0.07 sec)

mysql> select * from students where rollno>3;
+-----+-----+-----+
| rollno | name   | marks |
+-----+-----+-----+
|     4  | harpreet |    78 |
|     5  | amanpreet |    76 |
+-----+-----+-----+
2 rows in set (0.05 sec)

mysql> -
```

select all columns from table students where rollno is less than 3

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
5 rows in set (0.05 sec)

mysql> select * from students where rollno=1;
+-----+-----+
| rollno | name  | marks |
+-----+-----+
|     1  | raman |    90 |
+-----+-----+
1 row in set (0.07 sec)

mysql> select * from students where rollno>3;
+-----+-----+-----+
| rollno | name   | marks |
+-----+-----+-----+
|     4  | harpreet |    78 |
|     5  | amanpreet |    76 |
+-----+-----+-----+
2 rows in set (0.05 sec)

mysql> select * from students where rollno<3;
+-----+-----+
| rollno | name  | marks |
+-----+-----+
|     1  | raman |    90 |
|     2  | gagan |    80 |
+-----+-----+
2 rows in set (0.00 sec)

mysql>
```

select all columns from table students where rollno is equal to or greater than 3

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
2 rows in set (0.05 sec)

mysql> select * from students where rollno>3;
+-----+-----+
| rollno | name   | marks |
+-----+-----+
|     4  | harpreet |    78 |
|     5  | amanpreet |    76 |
+-----+-----+
2 rows in set (0.05 sec)

mysql> select * from students where rollno<3;
+-----+-----+
| rollno | name  | marks |
+-----+-----+
|     1  | raman |    90 |
|     2  | gagan |    80 |
+-----+-----+
2 rows in set (0.00 sec)

mysql> select * from students where rollno>=3;
+-----+-----+
| rollno | name   | marks |
+-----+-----+
|     3  | aman  |    85 |
|     4  | harpreet |    78 |
|     5  | amanpreet |    76 |
+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

command to display all columns from table students where rollno is less than or equal to 3

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
mysql> select * from students where rollno<3;
+-----+-----+
| rollno | name   | marks |
+-----+-----+
|     1  | raman  |    90 |
|     2  | gagan  |    80 |
+-----+-----+
2 rows in set (0.00 sec)

mysql> select * from students where rollno>=3;
+-----+-----+
| rollno | name   | marks |
+-----+-----+
|     3  | aman   |    85 |
|     4  | harpreet |    78 |
|     5  | amanpreet |    76 |
+-----+-----+
3 rows in set (0.00 sec)

mysql> select * from students where rollno<=3;
+-----+-----+
| rollno | name   | marks |
+-----+-----+
|     1  | raman  |    90 |
|     2  | gagan  |    80 |
|     3  | aman   |    85 |
+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

select all columns from table students where rollno is not equal to 3

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
| rollno | name   | marks |
+-----+-----+
|     3  | aman   |    85 |
|     4  | harpreet |    78 |
|     5  | amanpreet |    76 |
+-----+-----+
3 rows in set (0.00 sec)

mysql> select * from students where rollno<=3;
+-----+-----+
| rollno | name   | marks |
+-----+-----+
|     1  | raman  |    90 |
|     2  | gagan  |    80 |
|     3  | aman   |    85 |
+-----+-----+
3 rows in set (0.00 sec)

mysql> select * from students where rollno<>3;
+-----+-----+
| rollno | name   | marks |
+-----+-----+
|     1  | raman  |    90 |
|     2  | gagan  |    80 |
|     4  | harpreet |    78 |
|     5  | amanpreet |    76 |
+-----+-----+
4 rows in set (0.00 sec)

mysql>
```

alternate sql command to display all columns from table students where rollno is not equal to 3

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| 1 | raman | 90 |
| 2 | gagan | 80 |
| 3 | aman | 85 |
+-----+
3 rows in set (0.00 sec)

mysql> select * from students where rollno<>3;
+-----+
| rollno | name      | marks |
+-----+
| 1     | raman     | 90   |
| 2     | gagan     | 80   |
| 4     | harpreet   | 78   |
| 5     | amanpreet | 76   |
+-----+
4 rows in set (0.00 sec)

mysql> select * from students where rollno!=3;
+-----+
| rollno | name      | marks |
+-----+
| 1     | raman     | 90   |
| 2     | gagan     | 80   |
| 4     | harpreet   | 78   |
| 5     | amanpreet | 76   |
+-----+
4 rows in set (0.00 sec)

mysql>
```

alternate sql command to display all columns from table students where rollno is not equal to 3
example of not operator

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| 1 | raman | 90 |
| 2 | gagan | 80 |
| 4 | harpreet | 78 |
| 5 | amanpreet | 76 |
+-----+
4 rows in set (0.00 sec)

mysql> select * from students where rollno!=3;
+-----+
| rollno | name      | marks |
+-----+
| 1     | raman     | 90   |
| 2     | gagan     | 80   |
| 4     | harpreet   | 78   |
| 5     | amanpreet | 76   |
+-----+
4 rows in set (0.00 sec)

mysql> select * from students where not rollno=3;
+-----+
| rollno | name      | marks |
+-----+
| 1     | raman     | 90   |
| 2     | gagan     | 80   |
| 4     | harpreet   | 78   |
| 5     | amanpreet | 76   |
+-----+
4 rows in set (0.00 sec)

mysql>
```

sql command to display all columns of table students where marks are between 80 and 90 example of and operator

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| 1 | raman | 90 |
| 2 | gagan | 80 |
| 4 | harpreet | 78 |
| 5 | amanpreet | 76 |
+-----+
4 rows in set (0.00 sec)

mysql> select * from students where not rollno=3;
+-----+
| rollno | name | marks |
+-----+
| 1 | raman | 90 |
| 2 | gagan | 80 |
| 4 | harpreet | 78 |
| 5 | amanpreet | 76 |
+-----+
4 rows in set (0.00 sec)

mysql> select * from students where marks>=80 and marks<=90;
+-----+
| rollno | name | marks |
+-----+
| 1 | raman | 90 |
| 2 | gagan | 80 |
| 3 | aman | 85 |
+-----+
3 rows in set (0.02 sec)

mysql>
```

sql command to display all columns of table students where marks are either 80 or 90 example of or operator

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| rollno | name | marks |
+-----+
| 1 | raman | 90 |
| 2 | gagan | 80 |
| 4 | harpreet | 78 |
| 5 | amanpreet | 76 |
+-----+
4 rows in set (0.00 sec)

mysql> select * from students where marks>=80 and marks<=90;
+-----+
| rollno | name | marks |
+-----+
| 1 | raman | 90 |
| 2 | gagan | 80 |
| 3 | aman | 85 |
+-----+
3 rows in set (0.02 sec)

mysql> select * from students where marks=80 or marks=90;
+-----+
| rollno | name | marks |
+-----+
| 1 | raman | 90 |
| 2 | gagan | 80 |
+-----+
2 rows in set (0.00 sec)

mysql>
```

sql command to display all columns of table students where marks are between 80 and 90 80 and 90 are inclusive

example of between and operator

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
mysql> select * from students where marks>=80 and marks<=90;
+-----+-----+-----+
| rollno | name  | marks |
+-----+-----+-----+
|    1   | raman |    90 |
|    2   | gagan |    80 |
|    3   | aman  |    85 |
+-----+-----+-----+
3 rows in set (0.02 sec)

mysql> select * from students where marks=80 or marks=90;
+-----+-----+-----+
| rollno | name  | marks |
+-----+-----+-----+
|    1   | raman |    90 |
|    2   | gagan |    80 |
+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> select * from students where marks between 80 and 90;
+-----+-----+-----+
| rollno | name  | marks |
+-----+-----+-----+
|    1   | raman |    90 |
|    2   | gagan |    80 |
|    3   | aman  |    85 |
+-----+-----+-----+
3 rows in set (0.03 sec)

mysql>
```

sql command to display all columns from table students where marks are in the list 80,85,87,90
example of in operator

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
mysql> select * from students where marks=80 or marks=90;
+-----+-----+-----+
| rollno | name  | marks |
+-----+-----+-----+
|    1   | raman |    90 |
|    2   | gagan |    80 |
+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> select * from students where marks between 80 and 90;
+-----+-----+-----+
| rollno | name  | marks |
+-----+-----+-----+
|    1   | raman |    90 |
|    2   | gagan |    80 |
|    3   | aman  |    85 |
+-----+-----+-----+
3 rows in set (0.03 sec)

mysql> select * from students where marks in (80,85,87,90);
+-----+-----+-----+
| rollno | name  | marks |
+-----+-----+-----+
|    1   | raman |    90 |
|    2   | gagan |    80 |
|    3   | aman  |    85 |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

sql command to display all columns from table students where name starts with a
example of like operator

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
mysql> select * from students where marks between 80 and 90;
+-----+-----+-----+
| rollno | name  | marks |
+-----+-----+-----+
|    1   | raman |    90 |
|    2   | gagan |    80 |
|    3   | aman  |    85 |
+-----+-----+-----+
3 rows in set (0.03 sec)

mysql> select * from students where marks in (80,85,87,90);
+-----+-----+-----+
| rollno | name  | marks |
+-----+-----+-----+
|    1   | raman |    90 |
|    2   | gagan |    80 |
|    3   | aman  |    85 |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> select * from students where name like 'a%';
+-----+-----+-----+
| rollno | name  | marks |
+-----+-----+-----+
|    3   | aman  |    85 |
|    5   | amanpreet |    76 |
+-----+-----+-----+
2 rows in set (0.04 sec)

mysql>
```

sql command to display all columns from students where name starts with a and second letter can be any letter and after that group of letters

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
mysql> select * from students where marks in (80,85,87,90);
+-----+-----+-----+
| rollno | name  | marks |
+-----+-----+-----+
|    1   | raman |    90 |
|    2   | gagan |    80 |
|    3   | aman  |    85 |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> select * from students where name like 'a%';
+-----+-----+-----+
| rollno | name  | marks |
+-----+-----+-----+
|    3   | aman  |    85 |
|    5   | amanpreet |    76 |
+-----+-----+-----+
2 rows in set (0.04 sec)

mysql> select * from students where name like 'a_%';
+-----+-----+-----+
| rollno | name  | marks |
+-----+-----+-----+
|    3   | aman  |    85 |
|    5   | amanpreet |    76 |
+-----+-----+-----+
2 rows in set (0.00 sec)

mysql>
```

sql command to display all columns of table students where name ends with n
example of like operator

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe

mysql> select * from students where name like 'a%';
+-----+-----+-----+
| rollno | name   | marks |
+-----+-----+-----+
|     3  | aman   |    85 |
|     5  | amanpreet |    76 |
+-----+-----+-----+
2 rows in set (0.04 sec)

mysql> select * from students where name like 'a_%';
+-----+-----+-----+
| rollno | name   | marks |
+-----+-----+-----+
|     3  | aman   |    85 |
|     5  | amanpreet |    76 |
+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> select * from students where name like '%n';
+-----+-----+-----+
| rollno | name   | marks |
+-----+-----+-----+
|     1  | raman  |    90 |
|     2  | gagan  |    80 |
|     3  | aman   |    85 |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

sql command to display all columns from table students sorted by marks in ascending order
example of order by

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe

| rollno | name   | marks |
+-----+-----+-----+
|     3  | aman   |    85 |
|     5  | amanpreet |    76 |
+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> select * from students where name like '%n';
+-----+-----+-----+
| rollno | name   | marks |
+-----+-----+-----+
|     1  | raman  |    90 |
|     2  | gagan  |    80 |
|     3  | aman   |    85 |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> select * from students order by marks;
+-----+-----+-----+
| rollno | name   | marks |
+-----+-----+-----+
|     5  | amanpreet |    76 |
|     4  | harpreet |    78 |
|     2  | gagan   |    80 |
|     3  | aman   |    85 |
|     1  | raman  |    90 |
+-----+-----+-----+
5 rows in set (0.03 sec)

mysql>
```

sql command to display all columns of table students sorted by marks in ascending order
example of order by

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
| 2 | gagan | 80 |
| 3 | aman | 85 |
+-----+
3 rows in set (0.00 sec)

mysql> select * from students order by marks;
+-----+-----+-----+
| rollno | name   | marks |
+-----+-----+-----+
| 5 | amanpreet | 76 |
| 4 | harpreet | 78 |
| 2 | gagan   | 80 |
| 3 | aman    | 85 |
| 1 | raman   | 90 |
+-----+-----+-----+
5 rows in set (0.03 sec)

mysql> select * from students order by marks asc;
+-----+-----+-----+
| rollno | name   | marks |
+-----+-----+-----+
| 5 | amanpreet | 76 |
| 4 | harpreet | 78 |
| 2 | gagan   | 80 |
| 3 | aman    | 85 |
| 1 | raman   | 90 |
+-----+-----+-----+
5 rows in set (0.00 sec)

mysql>
```

sql command to display all columns from table students sorted by marks in descending order

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
| 3 | aman   | 85 |
| 1 | raman  | 90 |
+-----+
5 rows in set (0.03 sec)

mysql> select * from students order by marks asc;
+-----+-----+-----+
| rollno | name   | marks |
+-----+-----+-----+
| 5 | amanpreet | 76 |
| 4 | harpreet | 78 |
| 2 | gagan   | 80 |
| 3 | aman    | 85 |
| 1 | raman   | 90 |
+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> select * from students order by marks desc;
+-----+-----+-----+
| rollno | name   | marks |
+-----+-----+-----+
| 1 | raman  | 90 |
| 3 | aman   | 85 |
| 2 | gagan  | 80 |
| 4 | harpreet | 78 |
| 5 | amanpreet | 76 |
+-----+-----+-----+
5 rows in set (0.00 sec)

mysql>
```

sql command to display structure of table

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+-----+
| 4 | harpreet | 78 |
| 2 | gagan    | 80 |
| 3 | aman     | 85 |
| 1 | raman    | 90 |
+-----+-----+
5 rows in set (0.00 sec)

mysql> select * from students order by marks desc;
+-----+-----+
| rollno | name      | marks |
+-----+-----+
| 1 | raman    | 90 |
| 3 | aman     | 85 |
| 2 | gagan    | 80 |
| 4 | harpreet | 78 |
| 5 | amanpreet | 76 |
+-----+-----+
5 rows in set (0.00 sec)

mysql> describe students;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| rollno | int(11)  | YES  |     | NULL    |       |
| name   | varchar(20) | YES  |     | NULL    |       |
| marks  | int(11)  | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+
3 rows in set (0.11 sec)

mysql>
```

alternate sql command to display structure of table students

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+-----+
| 1 | raman    | 90 |
| 3 | aman     | 85 |
| 2 | gagan    | 80 |
| 4 | harpreet | 78 |
| 5 | amanpreet | 76 |
+-----+-----+
5 rows in set (0.00 sec)

mysql> describe students;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| rollno | int(11)  | YES  |     | NULL    |       |
| name   | varchar(20) | YES  |     | NULL    |       |
| marks  | int(11)  | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+
3 rows in set (0.11 sec)

mysql> desc students;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| rollno | int(11)  | YES  |     | NULL    |       |
| name   | varchar(20) | YES  |     | NULL    |       |
| marks  | int(11)  | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

sql command to create table employees with columns as
ecode int
ename varchar(20)
esalary decimal 10,2
doj date

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+---+---+---+
| 2 | gagan | 80 |
| 4 | harpreet | 78 |
| 5 | amanpreet | 76 |
+---+---+---+
5 rows in set (0.00 sec)

mysql> describe students;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| rollno | int(11) | YES | | NULL |
| name | varchar(20) | YES | | NULL |
| marks | int(11) | YES | | NULL |
+-----+-----+-----+-----+
3 rows in set (0.11 sec)

mysql> desc students;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| rollno | int(11) | YES | | NULL |
| name | varchar(20) | YES | | NULL |
| marks | int(11) | YES | | NULL |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> create table employees(ecode int,ename varchar(20),esalary decimal(10,2),doj date);
Query OK, 0 rows affected (0.12 sec)

mysql>
```

sql command to insert a row in table employees

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> describe students;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| rollno | int(11) | YES | | NULL |
| name | varchar(20) | YES | | NULL |
| marks | int(11) | YES | | NULL |
+-----+-----+-----+-----+
3 rows in set (0.11 sec)

mysql> desc students;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| rollno | int(11) | YES | | NULL |
| name | varchar(20) | YES | | NULL |
| marks | int(11) | YES | | NULL |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> create table employees(ecode int,ename varchar(20),esalary decimal(10,2),doj date);
Query OK, 0 rows affected (0.12 sec)

mysql> insert into employees values(1,'raman',20000,'2000-2-2');
Query OK, 1 row affected (0.00 sec)

mysql>
```

another sql command to insert row in table employees

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
mysql> describe students;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| rollno | int(11) | YES  |     | NULL    |       |
| name   | varchar(20)| YES  |     | NULL    |       |
| marks  | int(11)  | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+
3 rows in set (0.11 sec)

mysql> desc students;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| rollno | int(11) | YES  |     | NULL    |       |
| name   | varchar(20)| YES  |     | NULL    |       |
| marks  | int(11)  | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> create table employees(ecode int,ename varchar(20),esalary decimal(10,2),doj date);
Query OK, 0 rows affected (0.12 sec)

mysql> insert into employees values(1,'raman',20000,'2000-2-2');
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees values(2,'gagan',25000,'2001-2-2');
Query OK, 1 row affected (0.00 sec)

mysql>
```

sql command to display all rows and columns of table employees

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
mysql> desc students;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| rollno | int(11) | YES  |     | NULL    |       |
| name   | varchar(20)| YES  |     | NULL    |       |
| marks  | int(11)  | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> create table employees(ecode int,ename varchar(20),esalary decimal(10,2),doj date);
Query OK, 0 rows affected (0.12 sec)

mysql> insert into employees values(1,'raman',20000,'2000-2-2');
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees values(2,'gagan',25000,'2001-2-2');
Query OK, 1 row affected (0.00 sec)

mysql> select * from employees;
+-----+-----+-----+
| ecode | ename | esalary | doj      |
+-----+-----+-----+
|    1 | raman | 20000.00 | 2000-02-02 |
|    2 | gagan | 25000.00 | 2001-02-02 |
+-----+-----+-----+
2 rows in set (0.00 sec)

mysql>
```

sql command to insert null value for doj column

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+
| rollno | int(11)  | YES  |      | NULL    |       |
| name   | varchar(20) | YES  |      | NULL    |       |
| marks  | int(11)   | YES  |      | NULL    |       |
+-----+
3 rows in set (0.00 sec)

mysql> create table employees(ecode int,ename varchar(20),esalary decimal(10,2),doj date);
Query OK, 0 rows affected (0.12 sec)

mysql> insert into employees values(1,'raman',20000,'2000-2-2');
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees values(2,'gagan',25000,'2001-2-2');
Query OK, 1 row affected (0.00 sec)

mysql> select * from employees;
+-----+
| ecode | ename | esalary | doj      |
+-----+
|     1 | raman | 20000.00 | 2000-02-02 |
|     2 | gagan | 25000.00 | 2001-02-02 |
+-----+
2 rows in set (0.00 sec)

mysql> insert into employees(ecode,ename,esalary) values(3,'aman',35000);
Query OK, 1 row affected (0.00 sec)

mysql>
```

sql command to display all columns from table employees where doj is null

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
mysql> create table employees(ecode int,ename varchar(20),esalary decimal(10,2),doj date);
Query OK, 0 rows affected (0.12 sec)

mysql> insert into employees values(1,'raman',20000,'2000-2-2');
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees values(2,'gagan',25000,'2001-2-2');
Query OK, 1 row affected (0.00 sec)

mysql> select * from employees;
+-----+
| ecode | ename | esalary | doj      |
+-----+
|     1 | raman | 20000.00 | 2000-02-02 |
|     2 | gagan | 25000.00 | 2001-02-02 |
+-----+
2 rows in set (0.00 sec)

mysql> insert into employees(ecode,ename,esalary) values(3,'aman',35000);
Query OK, 1 row affected (0.00 sec)

mysql> select * from employees where doj is null;
+-----+
| ecode | ename | esalary | doj      |
+-----+
|     3 | aman  | 35000.00 | NULL    |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql command to display all columns from table employees where doj is not null

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
mysql> select * from employees;
+-----+-----+-----+-----+
| ecode | ename | esalary | doj   |
+-----+-----+-----+-----+
|    1  | raman | 20000.00 | 2000-02-02 |
|    2  | gagan | 25000.00 | 2001-02-02 |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> insert into employees(ecode,ename,esalary) values(3,'aman',35000);
Query OK, 1 row affected (0.00 sec)

mysql> select * from employees where doj is null;
+-----+-----+-----+-----+
| ecode | ename | esalary | doj   |
+-----+-----+-----+-----+
|    3  | aman  | 35000.00 | NULL  |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> select * from employees where doj is not null;
+-----+-----+-----+-----+
| ecode | ename | esalary | doj   |
+-----+-----+-----+-----+
|    1  | raman | 20000.00 | 2000-02-02 |
|    2  | gagan | 25000.00 | 2001-02-02 |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql>
```

sql command to display all columns from table employees where doj is after 2001-1-1

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
mysql> insert into employees(ecode,ename,esalary) values(3,'aman',35000);
Query OK, 1 row affected (0.00 sec)

mysql> select * from employees where doj is null;
+-----+-----+-----+-----+
| ecode | ename | esalary | doj   |
+-----+-----+-----+-----+
|    3  | aman  | 35000.00 | NULL  |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> select * from employees where doj is not null;
+-----+-----+-----+-----+
| ecode | ename | esalary | doj   |
+-----+-----+-----+-----+
|    1  | raman | 20000.00 | 2000-02-02 |
|    2  | gagan | 25000.00 | 2001-02-02 |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> select * from employees where doj>'2001-1-1';
+-----+-----+-----+-----+
| ecode | ename | esalary | doj   |
+-----+-----+-----+-----+
|    2  | gagan | 25000.00 | 2001-02-02 |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

Mysql Functions

sql command to display ascii value of a characters
ascii function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
|   3 | aman  | 35000.00 | NULL |
+-----+-----+-----+
1 row in set (0.00 sec)

mysql> select * from employees where DOJ is not null;
+-----+-----+-----+-----+
| ecode | ename | esalary | DOJ    |
+-----+-----+-----+-----+
|   1   | raman | 20000.00 | 2000-02-02 |
|   2   | gagan | 25000.00 | 2001-02-02 |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> select * from employees where DOJ > '2001-1-1';
+-----+-----+-----+-----+
| ecode | ename | esalary | DOJ    |
+-----+-----+-----+-----+
|   2   | gagan | 25000.00 | 2001-02-02 |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> select ascii('A');
+-----+
| ascii('A') |
+-----+
|      65    |
+-----+
1 row in set (0.28 sec)

mysql>
```

sql command to display character corresponding to an ascii value
char function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
|   1 | raman | 20000.00 | 2000-02-02 |
|   2 | gagan | 25000.00 | 2001-02-02 |
+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> select * from employees where DOJ > '2001-1-1';
+-----+-----+-----+-----+
| ecode | ename | esalary | DOJ    |
+-----+-----+-----+-----+
|   2   | gagan | 25000.00 | 2001-02-02 |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> select ascii('A');
+-----+
| ascii('A') |
+-----+
|      65    |
+-----+
1 row in set (0.28 sec)

mysql> select char(67);
+-----+
| char(67) |
+-----+
| C        |
+-----+
1 row in set (0.05 sec)

mysql>
```

sql command to concatenate two strings
concat function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| 2 | gagan | 25000.00 | 2001-02-02 |
+-----+
1 row in set (0.00 sec)

mysql> select ascii('A');
+-----+
| ascii('A') |
+-----+
| 65 |
+-----+
1 row in set (0.28 sec)

mysql> select char(67);
+-----+
| char(67) |
+-----+
| C |
+-----+
1 row in set (0.05 sec)

mysql> select concat("raman","deep");
+-----+
| concat("raman","deep") |
+-----+
| ramandeep |
+-----+
1 row in set (0.10 sec)

mysql>
```

sql command to convert a string to lower case
lower or lcase function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| C |
+-----+
1 row in set (0.05 sec)

mysql> select concat("raman","deep");
+-----+
| concat("raman","deep") |
+-----+
| ramandeep |
+-----+
1 row in set (0.10 sec)

mysql> select lower("RAMAN");
+-----+
| lower("RAMAN") |
+-----+
| raman |
+-----+
1 row in set (0.02 sec)

mysql> select lcase("RAMAN");
+-----+
| lcase("RAMAN") |
+-----+
| raman |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql command to convert a string to uppercase
upper or ucase function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| raman      |
+-----+
1 row in set (0.02 sec)

mysql> select lcase("RAMAN");
+-----+
| lcase("RAMAN") |
+-----+
| raman      |
+-----+
1 row in set (0.00 sec)

mysql> select upper("raman");
+-----+
| upper("raman") |
+-----+
| RAMAN      |
+-----+
1 row in set (0.00 sec)

mysql> select ucase("raman");
+-----+
| ucase("raman") |
+-----+
| RAMAN      |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql command to extract a portion of string using substr function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| raman      |
+-----+
1 row in set (0.00 sec)

mysql> select upper("raman");
+-----+
| upper("raman") |
+-----+
| RAMAN      |
+-----+
1 row in set (0.00 sec)

mysql> select ucase("raman");
+-----+
| ucase("raman") |
+-----+
| RAMAN      |
+-----+
1 row in set (0.00 sec)

mysql> select substr("ramandeep",3,4);
+-----+
| substr("ramandeep",3,4) |
+-----+
| mand      |
+-----+
1 row in set (0.00 sec)

mysql>
```

another example of substr function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
1 row in set (0.00 sec)

mysql> select substr("ramandeep",-5,4);
+-----+
| substr("ramandeep",-5,4) |
+-----+
| ndee |
+-----+
1 row in set (0.00 sec)

mysql> ■
```

sql command to trim all spaces from left side of the string
ltrim function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
1 row in set (0.00 sec)

mysql> select substr("ramandeep",-5,4);
+-----+
| substr("ramandeep",-5,4) |
+-----+
| ndee |
+-----+
1 row in set (0.00 sec)

mysql> select ltrim("      raman");
+-----+
| ltrim("      raman") |
+-----+
| raman |
+-----+
1 row in set (0.00 sec)

mysql> ■
```

sql command to remove spaces from right side of the string
rtrim function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
1 row in set (0.00 sec)

mysql> select substr("ramandeep",-5,4);
+-----+
| substr("ramandeep",-5,4) |
+-----+
| ndee |
+-----+
1 row in set (0.00 sec)

mysql> select ltrim("      raman");
+-----+
| ltrim("      raman") |
+-----+
| raman |
+-----+
1 row in set (0.00 sec)

mysql> select rtrim("raman      ");
+-----+
| rtrim("raman      ") |
+-----+
| raman |
+-----+
1 row in set (0.00 sec)

mysql> -
```

sql command to remove spaces from both left and right side of the string
trim function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| ndee |
+-----+
1 row in set (0.00 sec)

mysql> select ltrim("      raman");
+-----+
| ltrim("      raman") |
+-----+
| raman |
+-----+
1 row in set (0.00 sec)

mysql> select rtrim("raman      ");
+-----+
| rtrim("raman      ") |
+-----+
| raman |
+-----+
1 row in set (0.00 sec)

mysql> select trim("      raman      ");
+-----+
| trim("      raman      ") |
+-----+
| raman |
+-----+
1 row in set (0.00 sec)

mysql> -
```

sql command to find a string within a string using instr function
instr function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| raman |
+-----+
1 row in set (0.00 sec)

mysql> select rtrim("raman      ");
+-----+
| rtrim("raman      ") |
+-----+
| raman      |
+-----+
1 row in set (0.00 sec)

mysql> select trim("      raman      ");
+-----+
| trim("      raman      ") |
+-----+
| raman      |
+-----+
1 row in set (0.00 sec)

mysql> select instr("raman","m");
+-----+
| instr("raman","m") |
+-----+
|            3 |
+-----+
1 row in set (0.05 sec)

mysql>
```

another example of instr function when a string is not found within a string
instr function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| raman |
+-----+
1 row in set (0.00 sec)

mysql> select trim("      raman      ");
+-----+
| trim("      raman      ") |
+-----+
| raman      |
+-----+
1 row in set (0.00 sec)

mysql> select instr("raman","m");
+-----+
| instr("raman","m") |
+-----+
|            3 |
+-----+
1 row in set (0.05 sec)

mysql> select instr("raman","d");
+-----+
| instr("raman","d") |
+-----+
|            0 |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql command to give length of a string
length function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| raman |
+-----+
1 row in set (0.00 sec)

mysql> select instr("raman","m");
+-----+
| instr("raman","m") |
+-----+
|            3 |
+-----+
1 row in set (0.05 sec)

mysql> select instr("raman","d");
+-----+
| instr("raman","d") |
+-----+
|            0 |
+-----+
1 row in set (0.00 sec)

mysql> select length("raman");
+-----+
| length("raman") |
+-----+
|            5 |
+-----+
1 row in set (0.06 sec)

mysql>
```

sql command to extract number of alphabets from left side of the string
left function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
|            3 |
+-----+
1 row in set (0.05 sec)

mysql> select instr("raman","d");
+-----+
| instr("raman","d") |
+-----+
|            0 |
+-----+
1 row in set (0.00 sec)

mysql> select length("raman");
+-----+
| length("raman") |
+-----+
|            5 |
+-----+
1 row in set (0.06 sec)

mysql> select left("raman",3);
+-----+
| left("raman",3) |
+-----+
| ram             |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql command to extract number of alphabets from right side of the string
right function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
|      0 |
+-----+
1 row in set (0.00 sec)

mysql> select length("raman");
+-----+
| length("raman") |
+-----+
|      5 |
+-----+
1 row in set (0.06 sec)

mysql> select left("raman",3);
+-----+
| left("raman",3) |
+-----+
| ram            |
+-----+
1 row in set (0.00 sec)

mysql> select right("raman",3);
+-----+
| right("raman",3) |
+-----+
| man            |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql command to extract part of a string within a string using mid function
mid function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
|      5 |
+-----+
1 row in set (0.06 sec)

mysql> select left("raman",3);
+-----+
| left("raman",3) |
+-----+
| ram            |
+-----+
1 row in set (0.00 sec)

mysql> select right("raman",3);
+-----+
| right("raman",3) |
+-----+
| man            |
+-----+
1 row in set (0.00 sec)

mysql> select mid("ramandeep",3,4);
+-----+
| mid("ramandeep",3,4) |
+-----+
| mand            |
+-----+
1 row in set (0.00 sec)

mysql>
```

Numeric Functions

mod function
sql command to get remainder after dividing two numbers

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| ram |
+-----+
1 row in set (0.00 sec)

mysql> select right("raman",3);
+-----+
| right("raman",3) |
+-----+
| man |
+-----+
1 row in set (0.00 sec)

mysql> select mid("ramandeep",3,4);
+-----+
| mid("ramandeep",3,4) |
+-----+
| mand |
+-----+
1 row in set (0.00 sec)

mysql> select mod(9,2);
+-----+
| mod(9,2) |
+-----+
|      1 |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql command to fins a raise to b using power or pow function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| power(2,3) |
+-----+
|      8 |
+-----+
1 row in set (0.05 sec)

mysql> select pow(2,3);
+-----+
| pow(2,3) |
+-----+
|      8 |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql comamnd to round a number
round function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe

mysql> select power(2,3);
+-----+
| power(2,3) |
+-----+
|          8 |
+-----+
1 row in set (0.05 sec)

mysql> select pow(2,3);
+-----+
| pow(2,3) |
+-----+
|          8 |
+-----+
1 row in set (0.00 sec)

mysql> select round(234.568,2);
+-----+
| round(234.568,2) |
+-----+
|        234.57 |
+-----+
1 row in set (0.00 sec)

mysql> -
```

sql command to round a number another example

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe

+-----+
|          8 |
+-----+
1 row in set (0.05 sec)

mysql> select pow(2,3);
+-----+
| pow(2,3) |
+-----+
|          8 |
+-----+
1 row in set (0.00 sec)

mysql> select round(234.568,2);
+-----+
| round(234.568,2) |
+-----+
|        234.57 |
+-----+
1 row in set (0.00 sec)

mysql> select round(234.568,1);
+-----+
| round(234.568,1) |
+-----+
|        234.6 |
+-----+
1 row in set (0.00 sec)

mysql> -
```

another example of round function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
|      8 |
+-----+
1 row in set (0.00 sec)

mysql> select round(234.568,2);
+-----+
| round(234.568,2) |
+-----+
|      234.57 |
+-----+
1 row in set (0.00 sec)

mysql> select round(234.568,1);
+-----+
| round(234.568,1) |
+-----+
|      234.6 |
+-----+
1 row in set (0.00 sec)

mysql> select round(234.568,-1);
+-----+
| round(234.568,-1) |
+-----+
|      230 |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql command to demonstrate sign function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
1 row in set (0.00 sec)

mysql> select sign(-90);
+-----+
| sign(-90) |
+-----+
|      -1 |
+-----+
1 row in set (0.00 sec)

mysql> select sign(90);
+-----+
| sign(90) |
+-----+
|      1 |
+-----+
1 row in set (0.00 sec)

mysql> select sign(0);
+-----+
| sign(0) |
+-----+
|      0 |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql command to find square root of a number
sqrt function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
|      1 |
+-----+
1 row in set (0.00 sec)

mysql> select sign(0);
+-----+
| sign(0) |
+-----+
|      0 |
+-----+
1 row in set (0.00 sec)

mysql> select sqrt(36);
+-----+
| sqrt(36) |
+-----+
|       6 |
+-----+
1 row in set (0.00 sec)

mysql> select sqrt(64);
+-----+
| sqrt(64) |
+-----+
|       8 |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql command to truncate a number using truncate function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
1 row in set (0.00 sec)

mysql> select sqrt(36);
+-----+
| sqrt(36) |
+-----+
|       6 |
+-----+
1 row in set (0.00 sec)

mysql> select sqrt(64);
+-----+
| sqrt(64) |
+-----+
|       8 |
+-----+
1 row in set (0.00 sec)

mysql> select truncate(567.564,2);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version
for the right syntax to use near '2)' at line 1
mysql> select truncate(567.564,2);
+-----+
| truncate(567.564,2) |
+-----+
|      567.56 |
+-----+
1 row in set (0.00 sec)

mysql>
```

Date/Time Functions

curdate or current_date function to get current date on the system

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
1 row in set (0.00 sec)

mysql> select truncate(567,564,2);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version
for the right syntax to use near '2)' at line 1
mysql> select truncate(567.564,2);
+-----+
| truncate(567.564,2) |
+-----+
|      567.56 |
+-----+
1 row in set (0.00 sec)

mysql> select curdate();
+-----+
| curdate() |
+-----+
| 2018-07-16 |
+-----+
1 row in set (0.04 sec)

mysql> select current_date();
+-----+
| current_date() |
+-----+
| 2018-07-16 |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql command to extract date from date and time

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
|      567.56 |
+-----+
1 row in set (0.00 sec)

mysql> select curdate();
+-----+
| curdate() |
+-----+
| 2018-07-16 |
+-----+
1 row in set (0.04 sec)

mysql> select current_date();
+-----+
| current_date() |
+-----+
| 2018-07-16 |
+-----+
1 row in set (0.00 sec)

mysql> select date("2002-2-2 4:5:56");
+-----+
| date("2002-2-2 4:5:56") |
+-----+
| 2002-02-02 |
+-----+
1 row in set (0.05 sec)

mysql>
```

sql command to extract month from date
month function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| 2018-07-16 |
+-----+
1 row in set (0.04 sec)

mysql> select current_date();
+-----+
| current_date() |
+-----+
| 2018-07-16 |
+-----+
1 row in set (0.00 sec)

mysql> select date("2002-2-2 4:5:56");
+-----+
| date("2002-2-2 4:5:56") |
+-----+
| 2002-02-02 |
+-----+
1 row in set (0.05 sec)

mysql> select month("2002-3-4");
+-----+
| month("2002-3-4") |
+-----+
|            3 |
+-----+
1 row in set (0.02 sec)

mysql>
```

sql command to extract year from date
year function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
mysql>
mysql>
mysql>
mysql> select year("2002-3-4");
+-----+
| year("2002-3-4") |
+-----+
|        2002 |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql command to extract dayname form a date
dayname function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
mysql>
mysql>
mysql>
mysql> select year("2002-3-4");
+-----+
| year("2002-3-4") |
+-----+
|          2002 |
+-----+
1 row in set (0.00 sec)

mysql> select dayname(curdate());
+-----+
| dayname(curdate()) |
+-----+
| Monday             |
+-----+
1 row in set (0.07 sec)

mysql> -
```

sql command to extract dayofmonth from a date
dayofmonth function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
mysql>
mysql>
mysql>
mysql> select year("2002-3-4");
+-----+
| year("2002-3-4") |
+-----+
|          2002 |
+-----+
1 row in set (0.00 sec)

mysql> select dayname(curdate());
+-----+
| dayname(curdate()) |
+-----+
| Monday             |
+-----+
1 row in set (0.07 sec)

mysql> select dayofmonth(curdate());
+-----+
| dayofmonth(curdate()) |
+-----+
|          16 |
+-----+
1 row in set (0.00 sec)

mysql> -
```

sql command to extract dayofweek from a date
dayofweek function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
|      2002 |
+-----+
1 row in set (0.00 sec)

mysql> select dayname(curdate());
+-----+
| dayname(curdate()) |
+-----+
| Monday             |
+-----+
1 row in set (0.07 sec)

mysql> select dayofmonth(curdate());
+-----+
| dayofmonth(curdate()) |
+-----+
|          16 |
+-----+
1 row in set (0.00 sec)

mysql> select dayofweek(curdate());
+-----+
| dayofweek(curdate()) |
+-----+
|          2 |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql command to extract dayofyear from a date
dayofyear function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| Monday             |
+-----+
1 row in set (0.07 sec)

mysql> select dayofmonth(curdate());
+-----+
| dayofmonth(curdate()) |
+-----+
|          16 |
+-----+
1 row in set (0.00 sec)

mysql> select dayofweek(curdate());
+-----+
| dayofweek(curdate()) |
+-----+
|          2 |
+-----+
1 row in set (0.00 sec)

mysql> select dayofyear(curdate());
+-----+
| dayofyear(curdate()) |
+-----+
|          197 |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql command to display current date and time on the system
now function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
|      16 |
+-----+
1 row in set (0.00 sec)

mysql> select dayofweek(curdate());
+-----+
| dayofweek(curdate()) |
+-----+
|      2 |
+-----+
1 row in set (0.00 sec)

mysql> select dayofyear(curdate());
+-----+
| dayofyear(curdate()) |
+-----+
|      197 |
+-----+
1 row in set (0.00 sec)

mysql> select now();
+-----+
| now() |
+-----+
| 2018-07-16 19:49:37 |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql command to display current date and time using sysdate function
sysdate function

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
|      2 |
+-----+
1 row in set (0.00 sec)

mysql> select dayofyear(curdate());
+-----+
| dayofyear(curdate()) |
+-----+
|      197 |
+-----+
1 row in set (0.00 sec)

mysql> select now();
+-----+
| now() |
+-----+
| 2018-07-16 19:49:37 |
+-----+
1 row in set (0.00 sec)

mysql> select sysdate();
+-----+
| sysdate() |
+-----+
| 2018-07-16 19:50:31 |
+-----+
1 row in set (0.00 sec)

mysql>
```

Constraints

Primary Key Constraint

Duplicate values cannot be entered in a primary key column

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| 2018-07-16 19:50:31 |
+-----+
1 row in set (0.00 sec)

mysql> create table students1(rollno int primary key,name varchar(20),marks int);
Query OK, 0 rows affected (0.07 sec)

mysql>
```

duplicate values cannot be entered in primary key column

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| 2018-07-16 19:50:31 |
+-----+
1 row in set (0.00 sec)

mysql> create table students1(rollno int primary key,name varchar(20),marks int);
Query OK, 0 rows affected (0.07 sec)

mysql> insert into students1 values(1,'raman',90);
Query OK, 1 row affected (0.00 sec)

mysql> insert into students1 values(1,'gagan',95);
ERROR 1062 (23000): Duplicate entry '1' for key 'PRIMARY'
mysql>
```

null values cannot be entered in primary key column

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| 2018-07-16 19:50:31 |
+-----+
1 row in set (0.00 sec)

mysql> create table students1(rollno int primary key,name varchar(20),marks int);
Query OK, 0 rows affected (0.07 sec)

mysql> insert into students1 values(1,'raman',90);
Query OK, 1 row affected (0.00 sec)

mysql> insert into students1 values(1,'gagan',95);
ERROR 1062 (23000): Duplicate entry '1' for key 'PRIMARY'
mysql> -
```

Unique Constraint

sql command to demonstrate unique constraint

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| 2018-07-16 19:50:31 |
+-----+
1 row in set (0.00 sec)

mysql> create table students1(rollno int primary key,name varchar(20),marks int);
Query OK, 0 rows affected (0.07 sec)

mysql> insert into students1 values(1,'raman',90);
Query OK, 1 row affected (0.00 sec)

mysql> insert into students1 values(1,'gagan',95);
ERROR 1062 (23000): Duplicate entry '1' for key 'PRIMARY'
mysql> insert into students1 values(null,'gagan',95);
ERROR 1048 (23000): Column 'rollno' cannot be null
mysql> create table students2(rollno int unique,name varchar(20),marks int);
Query OK, 0 rows affected (0.09 sec)

mysql> -
```

duplicate values cannot be entered in unique column

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| 2018-07-16 19:50:31 |
+-----+
1 row in set (0.00 sec)

mysql> create table students1(rollno int primary key,name varchar(20),marks int);
Query OK, 0 rows affected (0.07 sec)

mysql> insert into students1 values(1,'raman',90);
Query OK, 1 row affected (0.00 sec)

mysql> insert into students1 values(1,'gagan',95);
ERROR 1062 (23000): Duplicate entry '1' for key 'PRIMARY'
mysql> insert into students1 values(null,'gagan',95);
ERROR 1048 (23000): Column 'rollno' cannot be null
mysql> create table students2(rollno int unique,name varchar(20),marks int);
Query OK, 0 rows affected (0.09 sec)

mysql> insert into students2 values(1,'gagan',95);
Query OK, 1 row affected (0.00 sec)

mysql> insert into students2 values(1,'aman',95);
ERROR 1062 (23000): Duplicate entry '1' for key 'rollno'
mysql>
```

null values can be entered in unique column

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
| 2018-07-16 19:50:31 |
+-----+
1 row in set (0.00 sec)

mysql> create table students1(rollno int primary key,name varchar(20),marks int);
Query OK, 0 rows affected (0.07 sec)

mysql> insert into students1 values(1,'raman',90);
Query OK, 1 row affected (0.00 sec)

mysql> insert into students1 values(1,'gagan',95);
ERROR 1062 (23000): Duplicate entry '1' for key 'PRIMARY'
mysql> insert into students1 values(null,'gagan',95);
ERROR 1048 (23000): Column 'rollno' cannot be null
mysql> create table students2(rollno int unique,name varchar(20),marks int);
Query OK, 0 rows affected (0.09 sec)

mysql> insert into students2 values(1,'gagan',95);
Query OK, 1 row affected (0.00 sec)

mysql> insert into students2 values(1,'aman',95);
ERROR 1062 (23000): Duplicate entry '1' for key 'rollno'
mysql> insert into students2 values(null,'aman',95);
Query OK, 1 row affected (0.00 sec)

mysql>
```

sql command to demonstrate default constraint

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version ^ for the right syntax to use near 'defualt 90)' at line 1
mysql> create table students3(rollno int,name varchar(20),marks int default 90);
Query OK, 0 rows affected (0.10 sec)

mysql> -
```

sql command to demonstrate check constraint

only those records can be entered where marks are greater than 40

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version ^ for the right syntax to use near 'defualt 90)' at line 1
mysql> create table students3(rollno int,name varchar(20),marks int default 90);
Query OK, 0 rows affected (0.10 sec)

mysql> create table students4(rollno int,name varchar(20),marks int check(marks>40));
Query OK, 0 rows affected (0.10 sec)

mysql> -
```

sql command to demonstrate references keyword or foreign key constraint

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version ^ for the right syntax to use near 'defualt 90)' at line 1
mysql> create table students3(rollno int,name varchar(20),marks int default 90);
Query OK, 0 rows affected (0.10 sec)

mysql> create table students4(rollno int,name varchar(20),marks int check(marks>40));
Query OK, 0 rows affected (0.10 sec)

mysql> create table department(Deptid int primary key,deptname varchar(20));
Query OK, 0 rows affected (0.12 sec)

mysql> create table employees(icode int primary key,ename varchar(20),esalary int,deptid int references department(deptid))
      -> ;
ERROR 1050 (42S01): Table 'employees' already exists
mysql> create table employees1(icode int primary key,ename varchar(20),esalary int,deptid int references department(deptid));
Query OK, 0 rows affected (0.05 sec)

mysql> -
```

sql command to demonstrate equi-join

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
id));
Query OK, 0 rows affected (0.05 sec)

mysql> insert into department values(1,'computers');
Query OK, 1 row affected (0.00 sec)

mysql> insert into department values(2,'electronics');
Query OK, 1 row affected (0.00 sec)

mysql> insert into department values(3,'mechanical');
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees1 values(1,'raman',9000,1);
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees1 values(2,'gagan',19000,3);
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees1 values(3,'aman',29000,2);
Query OK, 1 row affected (0.00 sec)

c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
mysql> insert into department values(3,'mechanical');
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees1 values(1,'raman',9000,1);
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees1 values(2,'gagan',19000,3);
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees1 values(3,'aman',29000,2);
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees1 values(4,'harman',25000,2);
Query OK, 1 row affected (0.00 sec)

mysql> select icode,ename,esalary,deptname from employees1,department where department.deptid=employees1.deptid;
+-----+-----+-----+-----+
| icode | ename | esalary | deptname |
+-----+-----+-----+-----+
|    1 | raman |     9000 | computers |
|    2 | gagan |    19000 | mechanical |
|    3 | aman  |    29000 | electronics |
|    4 | harman |    25000 | electronics |
+-----+-----+-----+-----+
4 rows in set (0.02 sec)

mysql> -
```

sql command to demonstrate update statement to update a single column

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees1 values(1,'raman',9000,1);
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees1 values(2,'gagan',19000,3);
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees1 values(3,'aman',29000,2);
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees1 values(4,'harman',25000,2);
Query OK, 1 row affected (0.00 sec)

mysql> select ecode,ename,esalary,deptname from employees1,department where department.deptid=employees1.deptid;
+-----+-----+-----+-----+
| ecode | ename | esalary | deptname |
+-----+-----+-----+-----+
|    1 | raman |     9000 | computers |
|    2 | gagan |    19000 | mechanical |
|    3 | aman  |    29000 | electronics |
|    4 | harman |    25000 | electronics |
+-----+-----+-----+-----+
4 rows in set (0.02 sec)

mysql> update students set marks=99 where rollno=1;
Query OK, 1 row affected (0.03 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> _
```

sql command to demonstrate update statement to update more than one column

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees1 values(2,'gagan',19000,3);
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees1 values(3,'aman',29000,2);
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees1 values(4,'harman',25000,2);
Query OK, 1 row affected (0.00 sec)

mysql> select ecode,ename,esalary,deptname from employees1,department where department.deptid=employees1.deptid;
+-----+-----+-----+-----+
| ecode | ename | esalary | deptname |
+-----+-----+-----+-----+
|    1 | raman |     9000 | computers |
|    2 | gagan |    19000 | mechanical |
|    3 | aman  |    29000 | electronics |
|    4 | harman |    25000 | electronics |
+-----+-----+-----+-----+
4 rows in set (0.02 sec)

mysql> update students set marks=99 where rollno=1;
Query OK, 1 row affected (0.03 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update students set marks=95,name='harman' where rollno=1;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> _
```

sql command to delete a row from table

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe

mysql> insert into employees1 values(3,'aman',29000,2);
Query OK, 1 row affected (0.00 sec)

mysql> insert into employees1 values(4,'harman',25000,2);
Query OK, 1 row affected (0.00 sec)

mysql> select ecode,ename,esalary,deptname from employees1,department where department.deptid=employees1.deptid;
+-----+-----+-----+-----+
| ecode | ename | esalary | deptname |
+-----+-----+-----+-----+
|    1 | raman |     9000 | computers |
|    2 | gagan |    19000 | mechanical |
|    3 | aman  |    29000 | electronics |
|    4 | harman |    25000 | electronics |
+-----+-----+-----+-----+
4 rows in set (0.02 sec)

mysql> update students set marks=99 where rollno=1;
Query OK, 1 row affected (0.03 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update students set marks=95,name='harman' where rollno=1;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> delete from students where rollno=5;
Query OK, 1 row affected (0.05 sec)

mysql>
```

sql command to add a column using alter table command

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe

mysql> insert into employees1 values(4,'harman',25000,2);
Query OK, 1 row affected (0.00 sec)

mysql> select ecode,ename,esalary,deptname from employees1,department where department.deptid=employees1.deptid;
+-----+-----+-----+-----+
| ecode | ename | esalary | deptname |
+-----+-----+-----+-----+
|    1 | raman |     9000 | computers |
|    2 | gagan |    19000 | mechanical |
|    3 | aman  |    29000 | electronics |
|    4 | harman |    25000 | electronics |
+-----+-----+-----+-----+
4 rows in set (0.02 sec)

mysql> update students set marks=99 where rollno=1;
Query OK, 1 row affected (0.03 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> update students set marks=95,name='harman' where rollno=1;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> delete from students where rollno=5;
Query OK, 1 row affected (0.05 sec)

mysql> alter table students add column class int;
Query OK, 4 rows affected (0.12 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql>
```

sql command to drop or delete a column class from table students using alter table command

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
for the right syntax to use near 'int' at line 1
mysql> alter table students drop column class;
Query OK, 4 rows affected (0.16 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> -
```

sql command to modify a column name set number of alphabets as 30 in column name using alter table command

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
for the right syntax to use near 'int' at line 1
mysql> alter table students drop column class;
Query OK, 4 rows affected (0.16 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> alter table students modify column name varchar(30);
Query OK, 4 rows affected (0.15 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> -
```

sql command to delete all rows from table students

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
for the right syntax to use near 'int' at line 1
mysql> alter table students drop column class;
Query OK, 4 rows affected (0.16 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> alter table students modify column name varchar(30);
Query OK, 4 rows affected (0.15 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> delete from students;
```

sql command to delete whole table data and structure of table using drop table command

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
for the right syntax to use near 'int' at line 1
mysql> alter table students drop column class;
Query OK, 4 rows affected (0.16 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> alter table students modify column name varchar(30);
Query OK, 4 rows affected (0.15 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> drop table students;
```

Aggregate Functions

max function to display maximum marks from table students

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
for the right syntax to use near 'int' at line 1
mysql> alter table students drop column class;
Query OK, 4 rows affected (0.16 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> alter table students modify column name varchar(30);
Query OK, 4 rows affected (0.15 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> select max(marks) from students;
+-----+
| max(marks) |
+-----+
|      95 |
+-----+
1 row in set (0.08 sec)

mysql> -
```

sql command to display minimum marks from table students

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
for the right syntax to use near 'int' at line 1
mysql> alter table students drop column class;
Query OK, 4 rows affected (0.16 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> alter table students modify column name varchar(30);
Query OK, 4 rows affected (0.15 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> select max(marks) from students;
+-----+
| max(marks) |
+-----+
|      95 |
+-----+
1 row in set (0.08 sec)

mysql> select min(marks) from students;
+-----+
| min(marks) |
+-----+
|      78 |
+-----+
1 row in set (0.00 sec)

mysql> -
```

sql command to count number of rows in table students

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe

mysql> alter table students modify column name varchar(30);
Query OK, 4 rows affected (0.15 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> select max(marks) from students;
+-----+
| max(marks) |
+-----+
|      95 |
+-----+
1 row in set (0.08 sec)

mysql> select min(marks) from students;
+-----+
| min(marks) |
+-----+
|      78 |
+-----+
1 row in set (0.00 sec)

mysql> select count(*) from students;
+-----+
| count(*) |
+-----+
|      4 |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql command to demonstrate avg function to calculate average of marks

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe

+-----+
|      95 |
+-----+
1 row in set (0.08 sec)

mysql> select min(marks) from students;
+-----+
| min(marks) |
+-----+
|      78 |
+-----+
1 row in set (0.00 sec)

mysql> select count(*) from students;
+-----+
| count(*) |
+-----+
|      4 |
+-----+
1 row in set (0.00 sec)

mysql> select avg(marks) from students;
+-----+
| avg(marks) |
+-----+
|   84.5000 |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql command to demonstrate sum function to calculate total sum of marks

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
+-----+
|      78 |
+-----+
1 row in set (0.00 sec)

mysql> select count(*) from students;
+-----+
| count(*) |
+-----+
|      4 |
+-----+
1 row in set (0.00 sec)

mysql> select avg(marks) from students;
+-----+
| avg(marks) |
+-----+
|   84.5000 |
+-----+
1 row in set (0.00 sec)

mysql> select sum(marks) from students;
+-----+
| sum(marks) |
+-----+
|      338 |
+-----+
1 row in set (0.00 sec)

mysql>
```

sql command to demonstrate group by clause

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
mysql> update students set class=11 where rollno in (1,3,5);
Query OK, 2 rows affected (0.01 sec)
Rows matched: 2  Changed: 2  Warnings: 0

mysql> update students set class=12 where rollno in (2,4);
Query OK, 2 rows affected (0.00 sec)
Rows matched: 2  Changed: 2  Warnings: 0

mysql> select * from students;
+-----+-----+-----+
| rollno | name   | marks | class |
+-----+-----+-----+
|    1  | harman |   95 |    11 |
|    2  | gagan  |   80 |    12 |
|    3  | aman   |   85 |    11 |
|    4  | harpreet |   78 |    12 |
+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> select count(*),class from students group by class;
+-----+-----+
| count(*) | class |
+-----+-----+
|      2  |    11 |
|      2  |    12 |
+-----+-----+
2 rows in set (0.05 sec)

mysql>
```

sql command to demonstrate having clause

```
c:\wamp64\bin\mysql\mysql5.7.21\bin\mysql.exe
mysql> select * from students;
+-----+-----+-----+-----+
| rollno | name   | marks | class |
+-----+-----+-----+-----+
|     1  | harman |    95 |    11 |
|     2  | gagan  |    80  |    12 |
|     3  | aman   |    85  |    11 |
|     4  | harpreet|    78  |    12 |
+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> select count(*),class from students group by class;
+-----+-----+
| count(*) | class |
+-----+-----+
|      2   |    11 |
|      2   |    12 |
+-----+-----+
2 rows in set (0.05 sec)

mysql> select count(*),class from students group by class having count(*)>1;
+-----+-----+
| count(*) | class |
+-----+-----+
|      2   |    11 |
|      2   |    12 |
+-----+-----+
2 rows in set (0.00 sec)

mysql>
```