What is Database?  
A database is a software that stores data in organized manner. So it become easy to manage the data.

Data Variables(RAM)

DataBase(we can store our data permanently)

Any Program-->> process(task)

Our program can store data in DB permanently.

For eg. Suppose we are going in shop to buy car, and he is saying we store our car in godam(Database), here only we show our models(temporary)

**What is MySQL?**

Popular database software use to handle data in relation manner.(In the form of Tables)

PRODUCT

ORDER

USER TABLE

**HOW MySQL WORKS?**

DB SERVER

COMMAND LINE CLIENT

**Queries -->**

1. **Show databases;**
2. **Create database [db\_name]**

**3 .Use [db\_name]**

**4 .Create table [table\_name] (col1,col2,col3);**

**5 .Eq user - create table user(id int(11) primary key, name varchar(100) not null, city varchar(60));**

**6 .Desc [tb\_name];**

**7 .Alter table [old table name] rename to [new table name];**

**8 . truncate table student; ---> only data will be deleted not table**

**9 . drop table [table\_name] ---> data aand table both will be deleted**

**10 . insert into student (id,name,city) values(12,'neha','kanpur');**

1. **insert into student values(12,'neha','kanpur');**
2. **Primary key - > unique rhega id**
3. **alter table student add country varchar(50);**
4. **Update [table\_name] set col=value, col=value where col=val (agar where ni lgayenge to pure columns update ho jayenge)**
5. **delete from [table\_name] where col=value(agar where ni lgayenge to pure columns update ho jayenge).**

**CLAUSES**

**Where:**

**---> select name as "username", city as "CITYNAME" from student;---> alias krn k liye--> thodi der k liye us col ka name change kr diya**

**select distinct(col) from [table\_name]; ----> distinct vlues**

**Between:**

**select \*from student where id between 12 and 15(12 and 15 will be included);**

**IN:**

**select \*from student where id=12 or id=14 or id=15; OR select \*from student where id in(12,14,15);**

**Limit:**

**Limit mtlb kitne select krne h aur offset mtlb kitne chodne h**

**select \*from student limit 2 offset 2;**

**Order by:**

**Select from student order by name desc;(by default ascending)**

**Like: It means pattern**

**% --->> zero, one, multiple character (a,ab,abcddef)**

**\_(underscore) ---> represents single character**

**mysql> select \*from student where city like 'k%';**

+----+-------+--------+---------+

| id | name | city | country |

+----+-------+--------+---------+

| 12 | bheem | kanpur | india |

| 13 | ram | kanpur | India |

+----+-------+--------+---------+

2 rows in set (0.01 sec)

**mysql> select \*from student where city like '\_\_\_\_u%';**

+----+-------+--------+---------+

| id | name | city | country |

+----+-------+--------+---------+

| 12 | bheem | kanpur | india |

| 13 | ram | kanpur | India |

+----+-------+--------+---------+

2 rows in set (0.00 sec)

**IN Ms Access DB -> % ->\* and \_ -> ?**

**Functions() :**

**mysql> select sum(id) from student;**

+---------+

| sum(id) |

+---------+

| 70 |

+---------+

1 row in set (0.01 sec)

**mysql> select sum(id) as "total salary" from student;**

+--------------+

| total salary |

+--------------+

| 70 |

+--------------+

1 row in set (0.01 sec)

**mysql> select Avg(id) as "average salary" from student;**

+----------------+

| average salary |

+----------------+

| 14.0000 |

+----------------+

1 row in set (0.00 sec)

**mysql> select count(\*) from student;**

+----------+

| count(\*) |

+----------+

| 5 |

+----------+

1 row in set (0.03 sec)

**mysql> select min(id) as "minimum" from student;**

+---------+

| minimum |

+---------+

| 12 |

+---------+

1 row in set (0.01 sec)

**mysql> select name from student where id=(select min(id) from student);**

+-------+

| name |

+-------+

| bheem |

+-------+

1 row in set (0.01 sec)

**Foreign key And joins :**

**mysql> create table laptop(id int primary key, model varchar(200), studentId int, foreign key(studentId) references student(id));**

Query OK, 0 rows affected (0.25 sec)

**mysql> desc laptop;**

**+-----------+--------------+------+-----+---------+-------+**

**| Field | Type | Null | Key | Default | Extra |**

**+-----------+--------------+------+-----+---------+-------+**

**| id | int | NO | PRI | NULL | |**

**| model | varchar(200) | YES | | NULL | |**

**| studentId | int | YES | MUL | NULL | |**

**+-----------+--------------+------+-----+---------+-------+**

**3 rows in set (0.01 sec)**

**mysql> insert into laptop values(1314,'HP',12);**

**Query OK, 1 row affected (0.02 sec)**

**mysql> select \*from laptop;**

**+------+-------+-----------+**

**| id | model | studentId |**

**+------+-------+-----------+**

**| 1314 | HP | 12 |**

**+------+-------+-----------+**

**1 row in set (0.00 sec)**

mysql> insert into laptop values(1315,'Dell',14);

Query OK, 1 row affected (0.01 sec)

**mysql> select \*from student;**

**+----+---------+--------+---------+**

**| id | name | city | country |**

**+----+---------+--------+---------+**

**| 12 | bheem | kanpur | india |**

**| 13 | ram | kanpur | India |**

**| 14 | laxman | canada | US |**

**| 15 | sita | mumbai | India |**

**| 16 | krishna | pune | China |**

**+----+---------+--------+---------+**

**5 rows in set (0.00 sec)**

**mysql> select student.name, student.city, laptop.model from student,laptop where student.id=laptop.studentId;**

+--------+--------+-------+

| name | city | model |

+--------+--------+-------+

| bheem | kanpur | HP |

| laxman | canada | Dell |

+--------+--------+-------+

2 rows in set (0.00 sec)

**mysql> select student.name, student.city, laptop.model from student,laptop where student.id=laptop.studentId and student.name='bheem';**

+-------+--------+-------+

| name | city | model |

+-------+--------+-------+

| bheem | kanpur | HP |

+-------+--------+-------+

1 row in set (0.01 sec)

**mysql> select student.name, student.city, laptop.model from student inner join laptop on student.id=laptop.studentId;**

+--------+--------+-------+

| name | city | model |

+--------+--------+-------+

| bheem | kanpur | HP |

| laxman | canada | Dell |

+--------+--------+-------+

2 rows in set (0.00 sec)

**select \*from student order by name; ->>> by default ascending**

**select \*from student order by name desc;**