**Difference between SQL and MYSQL**

SQL is a standard language used to operate in database in the form of queries

MYSQL is an open-source database management system or a database software. It will organize and store data in database

**Data and Database**

Data is a collection of facts about the object of interest.

Eg: A data about a book include its name, price, author, Date of publishing etc.

A Database is a place a place where data is stored and can accessed from a computer.

**Table**

* Table consists of rows and columns
* Point of intersection of a row and column is called a cell
* A table have any number of rows, but specific number of columns

**Creating Table and Inserting Values**

Create Table table\_name (column1 data type, column2 datatype, column3 datatype);

Eg: Create Table Students (Name varchar (25), Trade varchar (25), Address varchar (45));

**Deleting Table**

Drop Table table\_name

Eg: Drop Table Students

**Truncate the Table**

**If we want to delete the data in the table, but not the table we use truncate**

TRUNCATE TABLE table\_name;

Eg: TRUNCATE TABLE Students;

**SQL CONSTRAINTS**

The main use of constraints is to limit the type of data that can go into a table.

DEFAULT-When no value is mentioned set of default value is added to column

UNIQUE-The values in table will be unique. There is no duplicate value when we use these constraints.

NOT NULL-Null value will not be stored in the column.

INDEX-Used to create and retrieve values from the database

PRIMARY KEY- uniquely identify a tuple in a relation

FOREIGN KEY- It is a set of one or more columns in the child table whose values are required to match with corresponding columns in the parent table.

CHECK- If we want to satisfy a specific condition in a column then we use CHECK constraint

**SQL BASIC QUERIES**

**SELECT-** used to select the data from the database

Select column 1, column 2…column N From Table;

Eg: Select name From Student;

1. If we want to display all the fields in the table then we use

Select \* from Student;

1. If we want to display certain field without any duplicates then we use the DISTINCT keyword

Select DISTINCT Name From Student;

1. If we want to display the record with some conditions, we use

SELECT column1, column2, ...column N FROM table\_name WHERE condition;

Eg: SELECT Name FROM Students WHERE Trade='ADIT';

1. If we need to add two or more conditions in the where clause then we can use AND, OR, NOT

Eg SELECT \* FROM Student WHERE fName='Gayathri' AND Lname='nair';

Eg SELECT \* FROM Student WHERE FName='Gayathri' OR Lname='nair';

Eg SELECT \* FROM Student WHERE FName='gayathri' NOT Lname='nair';

**INSERT INTO**

Syntax

INSERT INTO table\_name (column1, column2,...) VALUES (value1, value2, value3, ...);

Eg Insert into Student(studentID, FName, LName, Address) Values (010, ‘GAYATHRI’,’NAIR’,’Rajendra vilasam Maruthamala p o vithura’);

**UPDATE**

UPDATE table\_name SET column1 = value1, column2 = value2, WHERE condition;

UPDATE Student SET LName =’P NAIR’ WHERE studentID=010;

**DELETE**

Delete From table\_name WHERE condition

Eg: Delete From student WHERE studentID =010

**AGGREGATE FUNCTIONS**

**It is a** function where the values of multiple rows are grouped together as input on certain condition and a single value is returned

* COUNT() -returns the number of rows.

SELECT COUNT(column\_name) FROM table\_name WHERE condition;

Eg: SELECT COUNT (studentID) FROM Student;

* AVG () – returns average value

SELECT AVG (column\_name) FROM table\_name WHERE condition;

Eg: Eg: SELECT AVG (Mark) FROM Student;

* SUM returns the total sum

SELECT SUM (column\_name) FROM table\_name WHERE condition;

Eg: SELECT SUM (Mark) FROM Student;

* MIN ()-selects the smallest value

SELECT MIN (column\_name) FROM table\_name WHERE condition;

Eg: SELECT MIN(Marks) AS Least Marks FROM Student;

* MAX ()-Returns the highest value

SELECT MAX (column\_name) FROM table\_name WHERE condition;

Eg: SELECT MAX(Marks) AS Highest Marks FROM Student;

GROUP BY-Group similar data in one group

Eg: SELECT COUNT(StudentID), Fname FROM Student GROUP BY Fname;

ORDER BY- Sort in ascending or descending order.

SELECT column1, column2, FROM table\_name RDER BY column1, column2, ... ASC|DESC;

**Aliases in SQL**

 Process of giving a table or a column a temporary name

Column Aliasing

Eg: SELECT Student ID as ID FROM Students;

Table Aliasing

Eg: SELECT S.Fname, S.LName FROM Student as S

**NULL Values**

IS NULL – check null values

Eg: SELECT name from students WHERE mark IS NULL;

IS NOT NULL- Eg: SELECT name from students WHERE mark IS NOT NULL;