Data type in SQL

There are three types of data present in a database:--

Data type represents the nature of the data.

1. String data type (VARCHAR, CHAR, TEXT)
2. Numeric data type(INT, INTEGER, FLOT)
3. Date and time data type(DATETIME, TIMESTAMP, YEAR)

Constraints in SQL

Constraints are the rules for data in a table. Constraints are used to limit the type of data that goes into the table. This ensure the accuracy and reliability of the data in the table

- NOT NULL : ensure that a column in a table cannot have a NULL value
- PRIMARY KEY: Uniquely identify a particular row of a table
- FOREGIN KEY: Uniquely identify a particular row && record of another table(link two table)
- DEFAULT - Sets a default value for a column when no value is specified
- INDEX - Used to create and retrieve data from the database very quickly

SQL (Standard Query Language)

Standard query language is database syntax or statement for create, maintain and retrieve data from a database. SQL is case sensitive.

1. Create table
   CREATE TABLE STUDENT
   (
   STUDENT_ID INT (20) NOT NULL UNIQUE,
   STUDENT_NAME VARCHAR (100) NOT NULL,
   STUDENT_ADDRESS VARCHAR (200),
   PRIMARY KEY (STUDENT_ID)

)

   →Unique constraint helps us to uniquely identify each row of a particular column. Which means no two row(student_id) cannot have the dame value. All student_id(row) must have different or unique value.

2. Foreign key

```
CREATE TABLE COLLEGE
(
COLLEGE_ID INT (20)                    NOT NULL ,
COLLEGE_NAME VARCHAR (100)     NOT NULL,
COLLEGE_ADDRESS VARCHAR (200),
PRIMARY KEY (COLLEGE_ID),
FOREIGN KEY (STUDENT_ID) REFERENCES STUDENT (STUDENT ID)
)
```

```
ALTER TABLE COLLEGE

ADD FOREIGN KEY (STUDENT_ID) REFERENCES STUDENT (STUDRNT_ID);
```

→Foreign key use to link two tables. Foreign key of a table is the primary key of a another table

→Standard rule of MYSQL says that primary key of a table must use as a foreign key of another table. But we can give references to any column (not primary) as a foreign key.

→A table can have only one primary key but can have many foreign key

→A table can reference a maximum of 253 other tables and columns as foreign keys

Attributes

Attribute are the property of a table such as STUDENT_NAME, STUDENT_ID etc

Tuple

Each row of a table is known as tuples

1	RAM	DELHI	9455123451	18

Degree

No of tuples in a table known as degree.

STUDENT table has degree of 3

ROLL_NO	NAME	ADDRESS	PHONE	AGE
1	RAM	DELHI	9455123451	18
2	RAMESH	GURGAON	9652431543	18
3	SUJIT	ROHTAK	9156253131	20
4	SURESH	DELHI	9156768971	18

Have degree 5. No attribute is 5

→Truncate statement is used to delete all the data from all the rows but it not delete the structure of the table or row. It just empties the rows.

TRUNCATE table table_name;

- INNER JOIN − returns rows when there is a match in both tables.
- LEFT JOIN − returns all rows from the left table, even if there are no matches in the right table.
- RIGHT JOIN − returns all rows from the right table, even if there are no matches in the left table.
- FULL JOIN − returns rows when there is a match in one of the tables.
- SELF JOIN − is used to join a table to itself as if the table were two tables, temporarily renaming at least one table in the SQL statement.

```
INSERT INTO `student` (`STUDENT_ID`, `STUDENT_NAME`, `STUDENT_ADDRESS`) VALUES ('DR_BSC_ST_01 ', 'JAYANTA LAHKAR ', 'GOLAGHAT');
```