**SQL:**

Structure Query LAnguage

Programming Language used to interact with relational database.

Using SQL,

Create new database,Tables

Insert Records

Update Records

Delete Records

Retrieves Read Record

**Databse:**

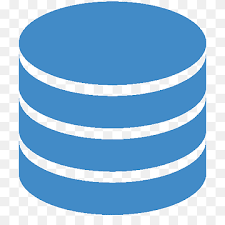
**Data:**

Sort of information that stored in computer memory

**Databse**:Systematic collection of data in electroninc systm that allows data to be stored,easily accessed ,manipulated and updated..

Types of Database:

Relational Database,Heirarchical database,Network database,Object Oriented databse,Non sql database.



**Relational Database**

It organizes data into tables which can be linked based on data common to each

DBMS

It is a software used to manage database

Eg,MY SQL,Oracle,etc

Dbms provides:Create databse,

**SQL BACKUP DATABASE for SQL Server**

The SQL BACKUP DATABASE Statement

The BACKUP DATABASE statement is used in SQL Server to create a full back up of an existing SQL database.

Syntax

BACKUP DATABASE *databasename*  
TO DISK = '*filepath*';

BACKUP DATABASE testDB  
TO DISK = 'D:\backups\testDB.bak';

SQL Constraints

**SQL Create Constraints**

Constraints can be specified when the table is created with the CREATE TABLE statement, or after the table is created with the ALTER TABLE statement.

SQL constraints are used to specify rules for the data in a table.

Constraints are used to limit the type of data that can go into a table. This ensures the accuracy and reliability of the data in the table. If there is any violation between the constraint and the data action, the action is aborted.

* [NOT NULL](https://www.w3schools.com/sql/sql_notnull.asp) - Ensures that a column cannot have a NULL value
* [UNIQUE](https://www.w3schools.com/sql/sql_unique.asp) - Ensures that all values in a column are different
* [PRIMARY KEY](https://www.w3schools.com/sql/sql_primarykey.asp) - A combination of a NOT NULL and UNIQUE. Uniquely identifies each row in a table
* [FOREIGN KEY](https://www.w3schools.com/sql/sql_foreignkey.asp) - Prevents actions that would destroy links between tables
* [CHECK](https://www.w3schools.com/sql/sql_check.asp) - Ensures that the values in a column satisfies a specific condition
* [DEFAULT](https://www.w3schools.com/sql/sql_default.asp) - Sets a default value for a column if no value is specified
* [CREATE INDEX](https://www.w3schools.com/sql/sql_create_index.asp) - Used to create and retrieve data from the database very quickly
* AUTO INCREMENT Field

CREATE TABLE Persons (  
    Personid int NOT NULL AUTO\_INCREMENT,  
    LastName varchar(255) NOT NULL,  
    FirstName varchar(255),  
    Age int,  
    PRIMARY KEY (Personid)  
);

CREATE TABLE Persons (  
    Personid int IDENTITY(1,1) PRIMARY KEY,  
    LastName varchar(255) NOT NULL,  
    FirstName varchar(255),  
    Age int  
);

**SQL CREATE VIEW Statement**

In SQL, a view is a virtual table based on the result-set of an SQL statement.

A view contains rows and columns, just like a real table. The fields in a view are fields from one or more real tables in the database.

You can add SQL statements and functions to a view and present the data as if the data were coming from one single table.

A view is created with the CREATE VIEW statement.

CREATE VIEW Syntax

CREATE VIEW *view\_name* AS  
SELECT *column1*, *column2*, ...  
FROM *table\_name*  
WHERE *condition*;

**CREATE VIEW [Brazil Customers] AS  
SELECT CustomerName, ContactName  
FROM Customers  
WHERE Country = 'Brazil';**

**Keys**

 Primary Key: Uniquely identifies each row.

 Foreign Key: Establishes relationships between tables.

 Candidate Key: Potential primary keys.

 Composite Key: Combination of columns for uniqueness.

 Unique Key: Ensures column uniqueness without being a primary key.

|  |  |  |  |
| --- | --- | --- | --- |
| Id | Name | Class | Course |
| 1 | Rasiya | 1 | 1 |
| 2 | Haya | 2 | 2 |
| 3 | Ishal | 3 | 3 |
|  |  |  |  |

|  |  |  |
| --- | --- | --- |
| Id | Course Name | Fees |
| 1 | MCA | 150000 |
| 2 | BCA | 100000 |
| 3 | Btech | 19999 |

Course foreign key refereces Course(Id)