**Module-1**

**1. What is SDLC?**

The full form of **SDLC** is **Software Development Life Cycle**. SDLC is a process designed to develop software or websites. This process is carried out step by step. The main parts of this process are as follows:

1. **Requirement Analysis**  
   In this phase, the client's needs are identified. It is determined what type of software or website is to be developed and whether it is technically feasible.
2. **Information Gathering**  
   In this step, detailed information is collected from the client about the kind of software they require.
3. **Design**  
   In this phase, the design of the software or website is prepared. It outlines how the software will look and function.
4. **Project Architecture**  
   In this step, the architecture of the software is planned. It includes the estimated time and cost for development and the type of team or resources required.
5. **Development**  
   In this phase, the actual software is developed through coding, based on the design and planning.
6. **Maintenance**  
   After the software is developed, any problems or bugs that occur are resolved in this phase. Ongoing support and updates are provided as needed.

**2. What is Software Testing?**  
Software testing is the process of evaluating a software application to ensure that it functions correctly and meets the client's requirements. It involves identifying bugs, issues, or vulnerabilities, and verifying the performance, reliability, and security of the software.

There are two main types of software testing:

1. **Manual Testing** – Testing performed manually by testers without using automation tools.
2. **Automated Testing** – Testing carried out using automated tools and scripts to increase efficiency and coverage.

Module-4

**1. What is RDBMS?**  
RDBMS stands for **Relational Database Management System**. It is a type of database management system that stores data in a **table format**, consisting of **rows and columns**. This structure helps organize data efficiently and allows for easy retrieval and manipulation.

**Key Features of RDBMS:**

1. **Table**:  
   Data is organized into tables, which provide a structured format for storing information.
2. **Primary Key**:  
   A primary key is a unique identifier for each record in a table. It ensures that no duplicate records exist.
3. **SQL (Structured Query Language)**:  
   SQL is the standard language used to manage and query data in an RDBMS.

**Example SQL Query** (to insert data into a table):

**INSERT INTO Students (ID, Name, Age) VALUES (1, 'John', 20);**

### ****2. Write a query to create the table in Structured Query Language.****

**I'm creating a table to store university student data like** EnrollmentNumber, Name, Address, Stream, Email, and Passout.

CREATE TABLE StudentDetails(

EnrollmentNumber INT AUTO\_INCREMENT NOT NULL,

Name VARCHAR(50) NOT NULL,

Address VARCHAR(50) NOT NULL,

Stream VARCHAR(20) NOT NULL,

Email VARCHAR(20) NOT NULL,

Passout VARCHAR(20)NOT NULL,

PRIMARY KEY(EnrollmentNumber)

);

1. **Write a Query To insert data into table with validations.**

INSERT INTO StudentDetails (Name, Address, Stream, Email, Passout)

VALUES

('Ritesh', 'Gandhinagar', 'Computer Science', 'ritesh@example.com', '2023'),

('Mayur', 'Ahmedabad', 'Electronics', 'mayur@example.com', '2022'),

('Parth', 'Ahmedabad', 'Mechanical', 'parth@example.com', '2024'),

('Priyansh', 'Ahmedabad', 'IT', 'priyansh@example.com', '2023');

('Udit', 'Ahmedabad', 'IT', 'udit@example.com', '2023');

1. **Write a query to update data into table with validations.**

**UPDATE StudentDetails**

**SET**

**Name = 'Amit Kumar Sharma',**

**Email = 'amit.sharma2023@example.com',**

**Passout = 2023**

**WHERE EnrollmentNumber = 1;**

1. **Write a query to Delete data from table with validations.**

DELETE FROM StudentDetails

**WHERE EnrollmentNumber = 3**;

1. **Write a query to drop table and database.**

**FOR DATABASE:-**

**DROP DATABASE University**

**FOR Table:-**

**DROP TABLE Studentdetails**