**Module-4 Database**

**1. What is RDBMS?**

RDBMS stands for Relational Database Management System. It is a type of database that stores data in tables (rows and columns) and allows relationships between different data tables using keys (Primary key, foreign key). Examples: MySQL, Oracle, SQL Server.

**2. What is SQL?**

SQL stands for Structured Query Language. It is used to store, manipulate, and retrieve data from relational databases. SQL includes commands like SELECT, INSERT, UPDATE, DELETE, CREATE, etc**.**

**3. Write SQL Commands**

**Some basic SQL commands are:**

sql

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SELECT \* FROM table\_name;

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

UPDATE table\_name SET column1 = 'value' WHERE condition;

DELETE FROM table\_name WHERE condition;

CREATE TABLE table\_name (...);

**4. What is Join?**

A JOIN is used in SQL to combine rows from two or more tables based on a related column between them**.**

**5. Types of Joins**

* INNER JOIN – Returns matching rows from both tables.
* LEFT JOIN – Returns all rows from the left table and matched rows from the right.
* RIGHT JOIN – Returns all rows from the right table and matched rows from the left.
* FULL JOIN – Returns all rows when there is a match in one of the tables.
* CROSS JOIN – Returns a Cartesian product (all combinations).

**6. How Many Constraints and Describe Them**

SQL Constraints are rules applied to table columns to maintain data integrity:

* NOT NULL – Prevents NULL values.
* UNIQUE – Ensures all values are unique.
* PRIMARY KEY – Combines NOT NULL and UNIQUE.
* FOREIGN KEY – Links records between tables.
* CHECK – Validates values with a condition.
* DEFAULT – Sets a default value.

**7. Difference Between RDBMS and DBMS**

| DBMS | RDBMS |
| --- | --- |
| Stores data in files or folders | Stores data in tables |
| No relationships | Maintains relationships |
| Low security | High security |
| Examples: XML, file system | Examples: MySQL, Oracle |

**8. What is an SQL Alias?**

An alias is a temporary name given to a table or column.

sql

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SELECT column\_name AS alias\_name FROM table\_name;

**9. Create Table in SQL**

sql

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CREATE TABLE Employees (

EmpID INT PRIMARY KEY,

Name VARCHAR(50),

Age INT,

Salary DECIMAL(10, 2)

);

**10. Insert Data into Table**

sql

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INSERT INTO Employees (EmpID, Name, Age, Salary)

VALUES (1, 'John', 30, 45000.00);

**11. Update Data in Table with Validation**

sql

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UPDATE Employees

SET Salary = 50000

WHERE EmpID = 1 AND Age > 25;

**12. Delete Data from Table with Validation**

sql

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DELETE FROM Employees

WHERE EmpID = 1 AND Salary < 60000;

**13. Insert New Column in Existing Table**

sql

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ALTER TABLE Employees

ADD Department VARCHAR(50);

**14. Drop Table and Database**

sql

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DROP TABLE Employees;

DROP DATABASE CompanyDB;

**15. Find Max and Min Value from Table**

sql

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SELECT MAX(Salary) AS MaxSalary FROM Employees;

SELECT MIN(Salary) AS MinSalary FROM Employees;

**16. Create Two Tables and Use Joins**

sql

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CREATE TABLE Seller (

SellerID INT PRIMARY KEY,

SellerName VARCHAR(50)

);

CREATE TABLE Product (

ProductID INT PRIMARY KEY,

ProductName VARCHAR(50),

SellerID INT,

FOREIGN KEY (SellerID) REFERENCES Seller(SellerID)

);

Use Joins to Fetch Data

sql

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-- INNER JOIN

SELECT Product.ProductName, Seller.SellerName

FROM Product

INNER JOIN Seller ON Product.SellerID = Seller.SellerID;

-- LEFT JOIN

SELECT Product.ProductName, Seller.SellerName

FROM Product

LEFT JOIN Seller ON Product.SellerID = Seller.SellerID;

-- RIGHT JOIN

SELECT Product.ProductName, Seller.SellerName

FROM Product

RIGHT JOIN Seller ON Product.SellerID = Seller.SellerID;

**17. What is API Testing?**

API Testing is a type of software testing that involves testing APIs directly to determine if they meet expectations for functionality, reliability, performance, and security.

**18. Types of API Testing**

* Functional Testing – Verify correct response.
* Load Testing – Check API performance under load.
* Security Testing – Validate secure access and data.
* Validation Testing – Ensure correct data and responses.
* Error Testing – Check API behaviour on invalid input.
* UI Integration Testing – Validate API interaction with UI.

**19. What is Responsive Testing?**

Responsive Testing ensures that a website or web application adjusts and displays correctly across different devices (mobile, tablet, desktop) and screen sizes.

**20. Tools for Responsive Testing**

* Browser Developer Tools (Inspect mode)
* Chrome DevTools Device Toolbar
* BrowserStack
* Responsinator
* LambdaTest
* CrossBrowserTesting

**21. What is the full form of .ipa and .apk?**

* **.ipa** – **iOS App Store Package**  
  It is the file format used to install applications on **Apple iOS devices** such as iPhones and iPads. .ipa files are only compatible with iOS and are used with Apple’s App Store.
* **.apk** – **Android Package Kit**  
  It is the file format used to install applications on **Android devices**. APK files contain all the necessary components to install and run an Android app.

**22. How to Enable Developer Option Mode ON (Android Devices)**

**Steps:**

1. **Open Settings** on your Android device.
2. Scroll down and **tap on "About phone"** (on some devices, it may be under “System”).
3. Find the option called **"Build number"**.
4. **Tap "Build number" 7 times** quickly.
5. If prompted, **enter your device lock screen PIN or password**.
6. You will see a message: **"You are now a developer!"**
7. Go back to the **main Settings** page.
8. Scroll down and now you will see **"Developer options"** (usually under **System** or **Additional settings**).
9. Tap on **Developer options**.
10. Turn the **Developer Options toggle to ON**.