**Module 3 (Testing on Live Application)**

**1 What is RDBMS**  
RDBMS stands for Relational Database Management System. It is a type of database management system that organizes data into tables, which consist of rows and columns. In an RDBMS, data is stored in a structured format, and relationships between different tables can be established using keys.

**2 What is SQL**

SQL, or structured query language, is a domain-specific language used for managing and manipulating relational databases. It provides a standardized way to interact with databases, allowing users to perform tasks such as querying data, inserting, updating, and deleting records, defining and modifying schema, and more. SQL is crucial for communication with and management of relational database management of relation database management system (RDBMS) like MYSQL, PostgreSQL, and Microsoft SQL Server.

**3 Write SQL Command**

**1 Create table:** This command is used to create a new table in the database.

**2 Insert into:** This command is used to insert new records into a table.

**3 select:** This command is used to retrieve data from the database.

**4 Update:** This command is used to update existing records in the database.

**5 Delete:** This command is used to delete records from the database.

**6 Alter table:** This command is used to modify an existing table.

**7 Drop table:** This command is used to delete an existing table from the database.

These are just a few examples of SQL commands. SQL is a powerful language with many more commands and features for managing and querying relational databases.

**4 What is join?**

In SQL, a join is used to combine rows from two or more tables based on a related column between them. There are different types of join, left join, right join, and full join.

1. **Write type of joins.**

**1 Inner join:** Returns rows when there is at least one match in both tables.

**2 Left join:** Returns all rows from the left table, and the matched rows from the right table. If there is no match, the result is NULL on the right side.

**3 Right join:** Returns all rows from the right table, and the matched rows from the left table. If there is no match, the result is NULL on the left side.

**4 Full join:** Returns rows when there is a match in one of the tables. This means it returns all rows from the left table and all rows from the right table. If there is no match, the result is NULL on either side.

**5 Cross join:** Returns the Cartesian product of the two tables, i.e., it returns all possible combinations of rows from both tables.

**6 How Many constraint and describes it self**

They ensure the accuracy and reliability of data within a database. There are several types of constraints commonly used in SQL:

**1 Primary key constraint**: Ensures that each record in a table is uniquely identified. A table can have only one primary key constraint.

**2 Foreign key constraint:** Establishes a relationship between two tables. A table can have multiple foreign key constraints.

**3 Unique constraints:** Ensures that all values in a column (or a set of columns) are unique. Unlike primary keys, unique constraints allow NULL values.

**4 Check constraint:** Enforces domain integrity by limiting the values that can be placed in a column. Check constraints specify a Boolean expression that must evaluate to true for the data to be valid.

**5 Not null constraints:** Ensures that a column cannot contain NULL values. A table can have multiple NOT NULL constraints.

**6 Default constraint:** Specifies a default value for a column when no value is provided during an INSERT operation. A table can have multiple default constraints.

**7 Difference between RDBMS vs DBMS**

|  |  |
| --- | --- |
| **RDBMS** | **DBMS** |
| 1 RDBMS application store data in a tabular from. | 1 DBMS application store data as file. |
| 2 Normalization is present in RDBMS. | 2 Normalization is not present in DBMS. |
| 3 store data in the form of tables | 3 store data in the form of a file. |
| 4 RDBMS deals with large quantity of data. | 4 DBMS deals with small quantity of data. |
| 5 RDBMS supports multiple users at a time. | 5 DBMS supports single user at a time. |

**8 What is API Testing**

API testing is the process of confirming that an API is working as expected. Developers can run API tests manually, or they can automate them with an API testing tool. There are several types of API tests, and each one plays a distinct role in ensuring the API remains reliable.

**9 Types of API Testing**

API testing involves evaluating the functionality, performance, security, and reliability of application programming interfaces (APIs). Here are nine types of API testing:

**1 Functional Testing:** This type of testing verifies that the API behaves as expected in response to various inputs. It involves testing individual API endpoints and ensuring that they return the correct response for different requests.

**2 Unit Testing:** Unit testing focuses on testing individual components or units of code within the API in isolation. Developers write unit tests to validate the functionality of methods, functions, or classes within the API.

**3 Integration Testing:** Integration testing involves testing how the API interacts with other components, services, or systems. It ensures that different parts of the application can communicate and work together seamlessly.

**4Load Testing:** Load testing evaluates the API's performance and scalability by subjecting it to a high volume of concurrent requests. It helps identify performance bottlenecks, response times, and resource utilization under heavy load conditions.

**5 Security Testing:** Security testing aims to identify and mitigate potential security vulnerabilities in the API. It involves testing for common security threats such as injection attacks, authentication issues, authorization flaws, and data exposure risks.

**6 Stress Testing:** Stress testing assesses the API's stability and robustness under extreme conditions, such as high traffic, resource constraints, or unexpected failures. It helps determine how the API behaves under pressure and whether it can recover gracefully from failures.

**7 Performance Testing:** Performance testing measures the API's responsiveness, throughput, and latency under normal operating conditions. It helps ensure that the API meets performance requirements and delivers acceptable levels of speed and responsiveness to users.

**8 Regression Testing:** Regression testing involves retesting the API after making changes or updates to ensure that existing functionality has not been affected. It helps maintain the stability and reliability of the API over time and prevents unintended consequences of code changes.

**10 What is Responsive Testing?**

Responsive website testing is a process that ensures your website works well on multiple devices by using CSS media queries based on the user's device where the website is accessed.

**11 Which types of tools are available for Responsive Testing**

**1 Browser Developer Tools:** Most modern web browsers come with built-in developer tools that allow you to simulate different screen sizes and view your website's responsiveness in real-time. Chrome DevTools, Firefox Developer Tools, and Safari Web Inspector are examples of such tools.

**2 Viewport Resizer Extensions:** These browser extensions let you quickly resize your browser window to various predefined dimensions, allowing you to test how your site responds to different screen sizes. Examples include Viewport Resizer for Chrome and Window Resizer for Firefox.

**3 Responsive Design Testing Websites:** There are online tools and websites that allow you to enter your website's URL and view how it looks across different devices and resolutions. Examples include Responsinator, Browser Stack, and CrossBrowserTesting.

**4 CSS Frameworks and Libraries:** CSS frameworks like Bootstrap, Foundation, and Materialize provide built-in responsiveness features and grid systems that help developers create responsive designs more efficiently. These frameworks often come with their own set of testing and debugging tools.

**5 Device Emulators and Simulators:** Software emulators and simulators mimic the behavior of various devices and operating systems, allowing you to test your website on different platforms without needing physical devices. Examples include the Android Emulator, iOS Simulator, and tools like Genymotion for mobile testing.

**6 Automated Testing Tools:** Automated testing frameworks such as Selenium WebDriver, Cypress, and Puppeteer can be used to automate the testing of responsive designs. They allow you to write scripts to simulate user interactions and test how your website responds across different devices and screen sizes.

**7 Online Validators and Testing Services:** There are online tools and services available that help you validate your website's HTML, CSS, and other code for responsiveness and compliance with web standards. W3C Markup Validation Service and CSS Validator are examples of such tools.

**12 What is the full form of. ipa, apk**

**1 IPA:** IPA stands for "iOS App Store Package." It is the file format used for distributing and installing apps on iOS devices such as iPhones, iPads, and iPod Touches. IPAs contain the binary for the app, along with any accompanying resources and metadata needed for installation.

**2 APK:** APK stands for "Android Package Kit." It is the file format used for distributing and installing apps on Android devices. APKs contain the compiled code, resources, assets, and manifest file necessary for the installation and execution of an Android application.

**13 How to create step for to open the developer option mode ON?**

**1 Unlock Your Device:** Make sure your Android device is unlocked and you are on the home screen.

**2 Access Settings:** Open the Settings app. You can usually find it by tapping the gear icon in the app drawer or by swiping down from the top of the screen and tapping the gear icon in the notification shade.

**3 Navigate to About Phone:** Scroll down the Settings menu and look for the "About phone" or "About device" option. This is usually located towards the bottom of the Settings menu.

**4 Locate Build Number:** In the "About phone" section, look for an option called "Build number" or something similar. This option is usually found at the bottom of the list.

**5 Tap Build Number Multiple Times:** Tap on the "Build number" option multiple times quickly. You may need to tap it 7 times, though it can vary depending on the device and Android version. As you tap, you should see a message indicating how many taps away you are from becoming a developer.

**6 Enter PIN/Password:** If you have a PIN, password, or pattern set up for your device, you may be prompted to enter it to confirm your action.

**14 To check**

If you want to verify whether Developer Options have been successfully enabled on your Android device, you can follow these steps:

**1 Access Settings:** Open the Settings app on your Android device.

**2 Navigate to System or About Phone:** Depending on your device and Android version, you may find Developer Options in different locations within the Settings menu. Look for either "System" or "About phone" and tap on it.

**3 Find Developer Options:** Scroll down the menu and look for "Developer options" or a similar entry. It may be located near the bottom of the menu.

**4 Verify Status:** If you see "Developer options" listed, it means that Developer Options have been successfully enabled on your device.

**5 Explore Developer Options:** You can tap on "Developer options" to explore the settings and features available within this menu. Here, you can configure various options related to developer settings, debugging, networking, and more.

Once you've verified that Developer Options are enabled, you can proceed to configure any settings or options within that menu according to your needs.