Modual:3

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1. • What is RDBMS

RDBMS stands for Relational Database Management System. It is a type of software that helps manage relational databases. A relational database is a collection of data organized into tables, where each table consists of rows and columns.

1. What is SQL

SQL stands for Structured Query Language. It is a programming language designed for managing and manipulating relational databases. SQL provides a standardized way to interact with databases, allowing users to create, modify, and retrieve data stored in a relational database management system (RDBMS).

1. Write SQL Commands

**Create table**

CREATE TABLE table\_name (

column1 datatype,

column2 datatype,

column3 datatype,

...

);

**Insert table**

INSERT INTO table\_name (column1, column2, column3, ...)

VALUES (value1, value2, value3, ...);

**Select**

SELECT column1, column2, ...

FROM table\_name

WHERE condition;

**Update**

UPDATE table\_name

SET column1 = value1, column2 = value2, ...

WHERE condition;

**Delete**

DELETE FROM table\_name

WHERE condition;

**Alter Table**

ALTER TABLE table\_name

ADD column\_name datatype;

ALTER TABLE table\_name

MODIFY column\_name datatype;

ALTER TABLE table\_name

DROP COLUMN column\_name;

1. What is join?

In the context of SQL and relational databases, a join is an operation that combines rows from two or more tables based on a related column between them. The join operation allows you to retrieve data from multiple tables by establishing a relationship between them.

1. Write type of joins.

**INNER JOIN**: Returns only the rows that have matching values in both tables being joined. It combines rows from both tables based on the specified condition.

**LEFT JOIN (or LEFT OUTER JOIN):** Returns all the rows from the left table and the matching rows from the right table. If there are no matching rows in the right table, NULL values are returned.

**RIGHT JOIN (or RIGHT OUTER JOIN):** Returns all the rows from the right table and the matching rows from the left table. If there are no matching rows in the left table, NULL values are returned.

**FULL JOIN (or FULL OUTER JOIN)**: Returns all the rows from both tables, regardless of whether they have matching rows or not. If there is no match, NULL values are returned for the columns of the non-matching table.

**CROSS JOIN**: Returns the Cartesian product of the two tables, which means all possible combinations of rows are returned. It doesn't require any condition to match the rows.

1. How Many constraint and describes it self

Primary Key Constraint: This constraint ensures that a column (or a combination of columns) uniquely identifies each row in a table. It enforces the uniqueness and non-nullability of the specified column(s). Only one primary key constraint can be defined per table.

Unique Constraint: The unique constraint ensures that the values in a column (or a combination of columns) are unique across the table. Unlike a primary key, a unique constraint allows null values, but the non-null values must be unique.

Foreign Key Constraint: A foreign key constraint establishes a relationship between two tables based on the values of a column in each table. It ensures referential integrity by enforcing that the values in the foreign key column(s) match the values in the referenced primary key column(s) of another table.

Check Constraint: A check constraint allows you to specify a condition that must be satisfied for the values in a column. It restricts the domain of possible values for the column. For example, you can define a check constraint to ensure that a numeric column only accepts values within a certain range.

Not Null Constraint: The not null constraint ensures that a column does not contain any null values. It requires that every row in the table has a non-null value for the specified column.

Default Constraint: A default constraint assigns a default value to a column when no explicit value is provided during an insert operation. It allows you to provide a predefined value that will be used if no value is specified for the column.

1. Difference between RDBMS vs DBMS

**DBMS:** A DBMS is a software system that manages databases in a general and broad sense. It can handle various types of data models, including hierarchical, network, and relational. DBMS focuses on data storage, retrieval, and manipulation without enforcing strict relationships between tables.

**RDBMS:** An RDBMS is a specific type of DBMS that manages relational databases. It follows the relational model, where data is organized into tables with rows and columns. RDBMS enforces relationships between tables through primary keys and foreign keys, ensuring data integrity and maintaining the consistency of data relationships.

1. What is API Testing

API testing refers to the process of testing application programming interfaces (APIs) to ensure their functionality, reliability, performance, and security. APIs allow different software systems to communicate and interact with each other, enabling data exchange and functionality sharing.

1. Types of API Testing

Unit Testing: Unit testing focuses on testing individual components or units of code in isolation. In API testing, it involves testing each API endpoint or function separately to verify their behavior and functionality. Mocking or stubbing techniques are often used to simulate dependencies and isolate the unit being tested.

Functional Testing: Functional testing verifies the functional aspects of an API by testing its expected behavior. It involves testing various API endpoints, parameters, and payloads to ensure they produce the correct results. Functional testing includes positive and negative testing, where valid and invalid inputs are tested to assess how the API handles them.

Integration Testing: Integration testing focuses on testing the interaction between multiple APIs or components of a system. It ensures that different APIs work together seamlessly and exchange data correctly. Integration testing involves testing API communication, data consistency across APIs, and the flow of data between various components.

Load Testing: Load testing involves testing the performance and scalability of an API under expected or anticipated loads. It aims to assess how the API performs under high concurrent user loads and heavy data traffic. Load testing helps identify performance bottlenecks, response times, resource utilization, and potential issues related to high loads.

Security Testing: Security testing focuses on identifying vulnerabilities and ensuring the API is protected against security risks. It involves testing for common security vulnerabilities such as injection attacks (e.g., SQL injection), cross-site scripting (XSS), authentication and authorization issues, and data encryption.

Stress Testing: Stress testing aims to test the API's stability and performance under extreme conditions beyond its normal limits. It involves testing the API under high loads, increased data volumes, or extended periods of usage. Stress testing helps identify any weaknesses, performance degradation, or stability issues.

Mocking and Virtualization: Mocking and virtualization techniques are used to simulate dependencies or third-party services that an API relies on. By simulating these dependencies, API testing can be performed independently, ensuring that the API functions correctly even when the external services are not available.

Error Handling Testing: Error handling testing focuses on testing how the API handles and responds to various error scenarios. It involves intentionally triggering error conditions, such as invalid requests, server errors, or timeouts, to ensure that the API provides appropriate error messages and responses.

1. What is Responsive Testing?

Responsive testing, also known as responsive web design testing, is the process of testing a website or web application to ensure that it displays and functions correctly across different devices and screen sizes. The goal of responsive testing is to verify that the website or application provides a consistent and optimal user experience regardless of the device being used, whether it's a desktop computer, laptop, tablet, or mobile phone.

1. Which types of tools are available for Responsive Testing

Browser DevTools: Most modern web browsers, such as Google Chrome, Firefox, and Safari, come with built-in developer tools. These tools allow you to simulate different screen sizes, change device orientations, and test responsive designs directly in the browser.

Responsive Design Mode: Browsers like Chrome and Firefox have a responsive design mode, which can be accessed through their developer tools. It allows you to quickly switch between different device sizes and resolutions to test how your website or application adapts to various screens.

CrossBrowserTesting: It is a cloud-based testing platform that offers a range of responsive testing features. You can test your website on real devices, including smartphones, tablets, and desktops, with different operating systems and browsers. It provides interactive testing capabilities and supports automated testing as well.

BrowserStack: Similar to CrossBrowserTesting, BrowserStack is another cloud-based testing platform. It provides access to a wide range of real devices and browsers for responsive testing. You can test your website or application on different screen sizes, resolutions, and device configurations.

Responsinator: Responsinator is a free online tool that allows you to preview your website's responsiveness across multiple devices. Simply enter your website URL, and it will display a preview of how your site appears on various screen sizes, including smartphones and tablets.

1. What is the full form of .ipa, .apk

.ipa: The full form of .ipa is "iPhone Application Archive" or "iOS App Store Package."

.apk: The full form of .apk is "Android Application Package."

1. How to create step for to open the developer option mode ON?

Open the "Settings" app on your Android device. You can usually find it in the app drawer or by swiping down from the top of the screen and tapping the gear-shaped icon.

Scroll down and find the "About phone" or "About device" option. It is typically located towards the bottom of the settings menu.

In the "About phone" section, look for the "Build number" or "Build version" entry. This option may be different depending on your device's manufacturer or Android version.

Tap on the "Build number" or "Build version" entry repeatedly, usually around seven times. You will see a message indicating that you are approaching developer status.

After tapping several times, you will see a message stating that you have enabled developer options. This message may vary depending on your device.

Now, go back to the main settings menu, and you should see a new option called "Developer options" or "Developer settings" near the bottom of the list.

Tap on the "Developer options" or "Developer settings" to access the developer options menu.