**Q1. What is RDBMS.**

=> RDBMS stands for Relational Database Management System. It is a software system that manages relational databases. A relational database is a type of database that organizes data into tables, which consist of rows and columns. The RDBMS provides the tools and functionality to create, update, and manage these databases.

=> In an RDBMS, data is structured into tables, where each table represents a specific entity or concept. The tables are related to each other through common data elements, known as keys, which establish relationships between the tables. This relational structure allows for efficient storage, retrieval, and manipulation of data.

=> The RDBMS provides a set of features and capabilities to ensure data integrity, consistency, and security. It supports a query language, typically SQL (Structured Query Language), which enables users to retrieve and manipulate data in the database. It also offers mechanisms for data concurrency and transaction management, ensuring that multiple users can access and modify the data simultaneously without conflicts.

=> Some popular examples of RDBMS include Oracle Database, MySQL, Microsoft SQL Server, and PostgreSQL. These systems have been widely used in various applications, ranging from small-scale applications to large enterprise systems, due to their flexibility, scalability, and robustness in managing structured data.

**Q2.** **What is SQL?**

=> SQL stands for Structured Query Language. It is a standard programming language used for managing and manipulating relational databases. SQL provides a set of commands and statements that allow users to interact with a database, perform various operations, and retrieve information.

=> SQL enables users to create and modify database structures, such as tables, indexes, and views. It also provides commands for inserting, updating, and deleting data within the tables. With SQL, users can define relationships between tables using keys, enforce data integrity constraints, and specify rules for data manipulation.

=> The primary purpose of SQL is to query databases and retrieve specific information. Users can write SQL queries, known as SELECT statements, to specify the data they want to retrieve from one or more tables. These queries can include filtering criteria, sorting orders, and aggregate functions to perform calculations on the data.

=> SQL is a declarative language, meaning that users specify what they want to achieve, and the database management system determines the most efficient way to execute the query. This makes SQL a powerful and flexible language for working with relational databases.

=> Although SQL is a standard language, different database management systems may have slight variations in syntax or additional proprietary features. However, the core SQL commands and functionality remain consistent across most implementations.

=> SQL has become a crucial tool for developers, database administrators, and data analysts to manage and query relational databases efficiently. It is widely used in various industries and applications where structured data needs to be stored, accessed, and analyzed.

**Q3. Write SQL Commands.**

DDL – Data Definition Language

DML – Data Manipulation Language

DCL – Data Control Language

DQL – Data Query Language

**Q4. What is join?**

=> In SQL, a join is a mechanism used to combine rows from two or more tables based on related columns. It allows you to retrieve data from multiple tables as a single result set. Joins are fundamental for querying and analysing data stored in relational databases.

**Q5. Write type of joins.**

INNER JOIN: returns rows when there is a match in both tables.

LEFT JOIN: returns all rows from the left table, even if there are no matches in the right table.

RIGHT JOIN: returns all rows from the right table, even if there are no matches in the left table.

FULL JOIN: returns rows when there is a match in one of the tables.

**Q6. How Many constraint and describes it self.**

=> In the context of databases and SQL, constraints are rules or conditions applied to columns or tables to maintain data integrity and enforce certain restrictions on the data stored in the database. Here are some commonly used constraints:

1. NOT NULL: This constraint ensures that a column cannot have a NULL value, meaning it must always have a non-null value.

Example: `column\_name datatype NOT NULL`

2. UNIQUE: The UNIQUE constraint ensures that each value in a column or a group of columns is unique across the table. It prevents duplicate values.

Example: `UNIQUE (column1, column2, ...)`

3. PRIMARY KEY: The PRIMARY KEY constraint uniquely identifies each record in a table. It combines the properties of the UNIQUE and NOT NULL constraints.

Example: `PRIMARY KEY (column1, column2, ...)`

4. FOREIGN KEY: The FOREIGN KEY constraint establishes a relationship between two tables, referencing the primary key of another table.

Example: `FOREIGN KEY (column) REFERENCES other\_table(primary\_key\_column)`

5. CHECK: The CHECK constraint defines a condition that must be satisfied by the values in a column.

Example: `column\_name datatype CHECK (condition)`

6. DEFAULT: The DEFAULT constraint sets a default value for a column when no value is specified during an insert operation.

Example: `column\_name datatype DEFAULT default\_value`

=> These constraints ensure data consistency, prevent invalid or inconsistent data, and enforce the intended structure and relationships within the database.

=> It's worth noting that different database management systems may have additional or slightly different types of constraints. The examples provided here are commonly supported by many SQL databases and cover the most fundamental constraints used in practice.

**Q7. Difference between RDBMS vs DBMS**

|  |  |
| --- | --- |
| **RDBMS (Relational Database Management System)** | **DBMS (Database Management System)** |
| RDBMS is a specific type of DBMS that manages databases based on the relational model. | DBMS is a general term that refers to a software system used for managing databases. |
| It organizes data into tables with rows and columns, where each table represents a specific entity or concept. | It provides a set of tools and functionalities to store, retrieve, and manipulate data. |
| RDBMS enforces relationships between tables using keys and supports SQL as the standard query language. | It may support various data models, such as hierarchical, network, object-oriented, or relational. |
| Examples of RDBMS include Oracle Database, MySQL, Microsoft SQL Server, and PostgreSQL. | Examples of DBMS include IMS, CODASYL, and object-oriented database systems. |

**Q8. What is API Testing.**

=> API testing refers to the process of testing Application Programming Interfaces (APIs) to ensure they function correctly, perform as expected, and meet the requirements. APIs allow different software applications or services to communicate and interact with each other, exchanging data and functionalities.

=> API testing can be performed using specialized testing tools and frameworks that allow testers to send requests, capture responses, and validate the API behavior. These tools often provide features for test case management, assertion libraries, and automation capabilities.

=> By thoroughly testing APIs, organizations can ensure the reliability, functionality, security, and performance of their software applications and enable smooth integration and interoperability with other systems.

**Q9.** **Types of API Testing**

=> There are mainly 3 types of API Testing

1. Open APIs: These types of APIs are publicly available to use like OAuth APIs from Google. It has also not given any restriction to use them. So, they are also known as Public APIs.

2. Partner APIs: Specific rights or licenses to access this type of API because they are not available to the public.

3. Internal APIs: Internal or private. These APIs are developed by companies to use in their internal systems. It helps you to enhance the productivity of your teams.

**Q10. What is Responsive Testing?**

=> Responsive testing refers to the process of testing a website or application to ensure it behaves and renders correctly across different devices, screen sizes, resolutions, and orientations. The goal of responsive testing is to verify that the website or application provides a consistent and optimal user experience on various devices, including desktop computers, laptops, tablets, and mobile phones.

=> Responsive testing is essential in today's digital landscape, where users access websites and applications using a variety of devices. By conducting thorough responsive testing, organizations can provide a seamless and optimized user experience across different screen sizes and devices, improving user satisfaction and engagement.

**Q11. Which types of tools are available for Responsive Testing.**

* LT Browser
* Lembda Testing
* Google Resizer
* I am responsive
* Pixel tuner

**Q12. What is the full form of .ipa, .apk**

1. IPA: The ".ipa" file extension stands for "iOS App Store Package" or "iPhone App Store Package." It is the file format used for distributing and installing applications on iOS devices, such as iPhones and iPads. IPA files contain the binary executable code, resources, and other files required to install and run the application on iOS devices.
2. APK: The ".apk" file extension stands for "Android Package Kit." It is the file format used for distributing and installing applications on Android devices. APK files contain the compiled code, resources, assets, and manifest file required for the installation and execution of Android applications.

**Q13. How to create step for to open the developer option mode ON?**

=> To open the Developer Options mode on an Android device, you can follow these steps:

1. Go to 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 icon.

2. Scroll down and find the "About phone" or "About device" option. It may be located at the bottom of the Settings menu.

3. In the "About phone" section, look for the "Build number" or "Build version" entry. This option may vary depending on your device and Android version.

4. Tap on the "Build number" or "Build version" entry repeatedly (usually about 7 times) in quick succession. You will see a message indicating that you are "X steps away from being a developer" with a countdown.

5. Keep tapping until you see a message that says "You are now a developer!" or similar confirmation.

6. After becoming a developer, go back to the main Settings menu. You will now see a new option called "Developer options" or "Developer settings" listed among the other settings options.

7. Tap on "Developer options" to open the developer settings.

=> Note: The exact location and name of the "Developer options" may vary depending on the Android version and device manufacturer. If you have trouble finding it, you can use the search feature within the Settings app to search for "Developer options" directly.

=> Enabling Developer Options provides access to various advanced settings and debugging features for developers and advanced users. Be cautious while making changes in these settings, as they can affect the functioning of your device if used incorrectly.