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Software Testing Assignment –3&4

1] What is RDBMS?

- RDBMS stands for Relational Database Management System.
- RDBMS is a program used to maintain a relational database.
- RDBMS is the basis for all modern database systems such as MySQL, Microsoft SQL Server, Oracle, and Microsoft Access.
- RDBMS uses SQL queries to access the data in the database.

2] What is SQL?

- SQL stands for Structured Query Language
- SQL lets you access and manipulate databases

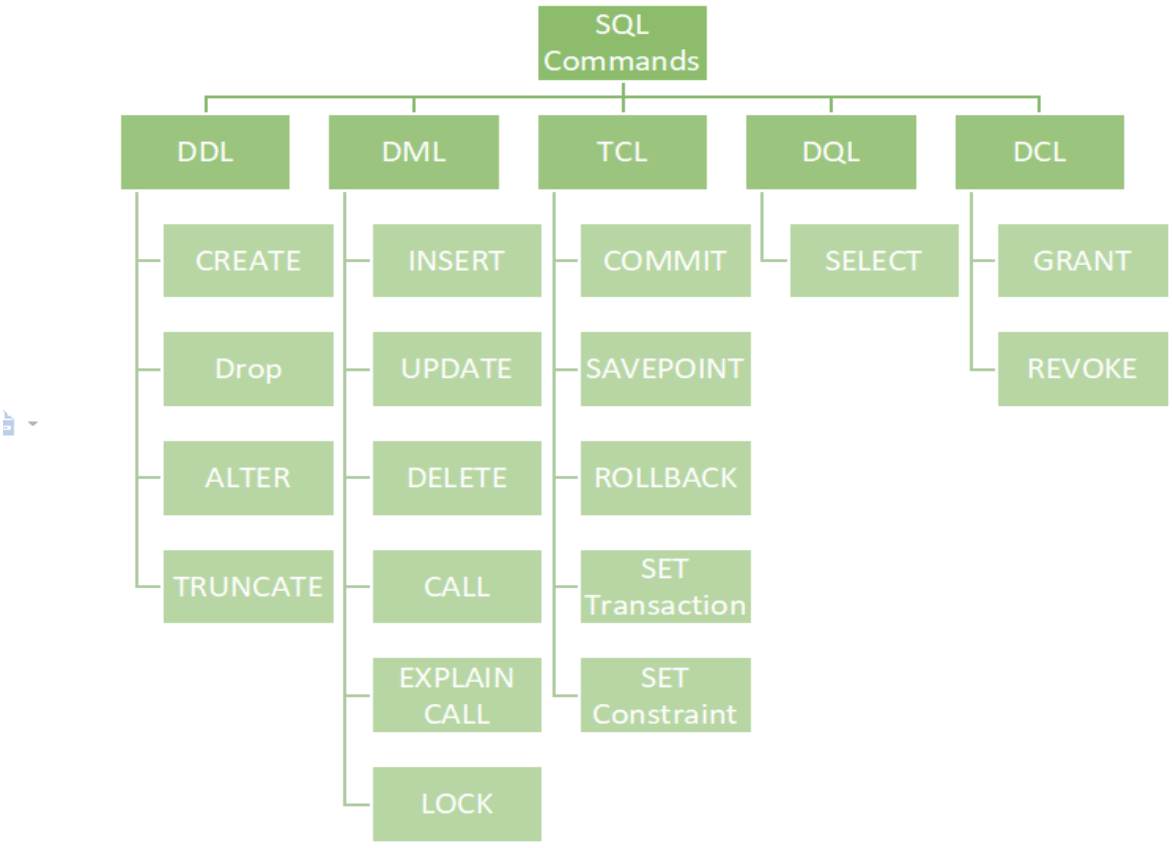
SQL can do...

- SQL can execute queries against a database
- SQL can retrieve data from a database
- SQL can insert records in a database
- SQL can update records in a database
- SQL can delete records from a database
- SQL can create new databases
- SQL can create new tables in a database
- SQL can create stored procedures in a database
- SQL can create views in a database
- SQL can set permissions on tables, procedures, and views

3] Write SQL Command

SQL commands are mainly categorized into five categories:

1. **DDL – Data Definition Language**
2. **DQL – Data Query Language**
3. **DML – Data Manipulation Language**
4. **DCL – Data Control Language**
5. **TCL – Transaction Control Language**



4] What is join? Write type of joins.

SQL Join statement is used to combine data or rows from two or more tables based on a common field between them. Different types of Joins are as follows:

- INNER JOIN

- LEFT JOIN
- RIGHT JOIN
- FULL JOIN
- NATURAL JOIN

5] How many Constraints and describe itself.

Database Constraints can be categorized into 3 main categories:

- Constraints that are applied in the data model are called **Implicit Constraints**.
- Constraints that are directly applied in the schemas of the data model, by specifying them in the DDL(Data Definition Language). These are called **Schema-Based Constraints or Explicit Constraints**.
- Constraints that cannot be directly applied in the schemas of the data model. We call these Application-based or **Semantic Constraints**.

6] Difference between RDBMS vs DBMS

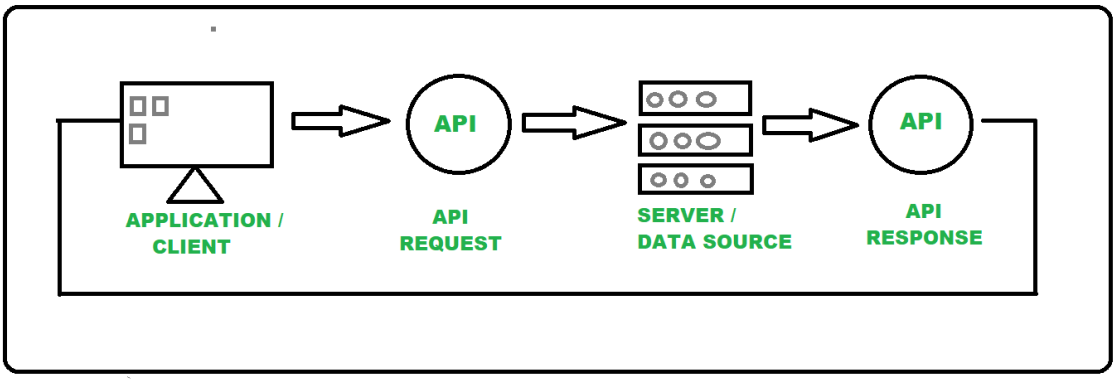
DBMS	RDBMS
DBMS stores data as file.	RDBMS stores data in tabular form.
Data elements need to access individually.	Multiple data elements can be accessed at the same time.
No relationship between data.	Data is stored in the form of tables which are related to each other.
Normalization is not present.	Normalization is present.

DBMS does not support distributed database.	RDBMS supports distributed database.
It stores data in either a navigational or hierarchical form.	It uses a tabular structure where the headers are the column names, and the rows contain corresponding values.
It deals with small quantity of data.	It deals with large amount of data.
Data redundancy is common in this model.	Keys and indexes do not allow Data redundancy.
It is used for small organization and deal with small data.	It is used to handle large amount of data.
Not all Codd rules are satisfied.	All 12 Codd rules are satisfied.
Security is less	More security measures provided.
It supports single user.	It supports multiple users.
Data fetching is slower for the large amount of data.	Data fetching is fast because of relational approach.
The data in a DBMS is subject to low security levels with regards to data manipulation.	There exists multiple levels of data security in a RDBMS.

Low software and hardware necessities. Examples: XML, Window Registry, Forxpro, dbaseIIIplus etc.	Higher software and hardware necessities. Examples: MySQL, PostgreSQL, SQL Server, Oracle, Microsoft Access etc.

7] What is API Testing and Types of API Testing

API (Application Programming Interface) testing is a type of software testing that focuses on the functionality, reliability, and performance of application programming interfaces (APIs). APIs act as a bridge between different software systems, allowing them to communicate and exchange data with each other.



API testing Types: There are multiple types of testing which are most often used as form of API testing which means during multiple types of testing simultaneously API can be tested. So the below list represents the types of API testing i.e.

6. Unit Testing
7. Integration Testing
8. End-to-End Testing
9. Performance Testing
10. Functional testing
11. Security Testing

12. Load testing
13. Penetration testing
14. Reliability testing
15. Fuzz testing

What exactly we check during API testing :

- Data accuracy.
- Response time.
- Duplicate or missing functionality.
- Authorization checks.
- Multithreaded issues.
- Security and performance issues.
- Error codes if API returns.
- Reliability issues.

8] What is Responsive Testing? Which types of tools are available for Responsive Testing?

- The term responsive testing is a range of activities that involve it to check whether the website or any application is behaving in the right way after it is launched on different gadgets and screen sizes.
- The tests used to check whether the user interface changes dynamically in response to different screen resolutions, device orientations, and capabilities act as one of the major aims of testing.
- As we are dealing with the spread of mobile devices as well as different variations regarding screen sizes and resolutions, it is now almost impossible to content the users with the same perfect screen experience – let alone the additional type of devices with nature-based handcrafted user interfaces.

There are 7 types of tools are available for Responsive Testing:

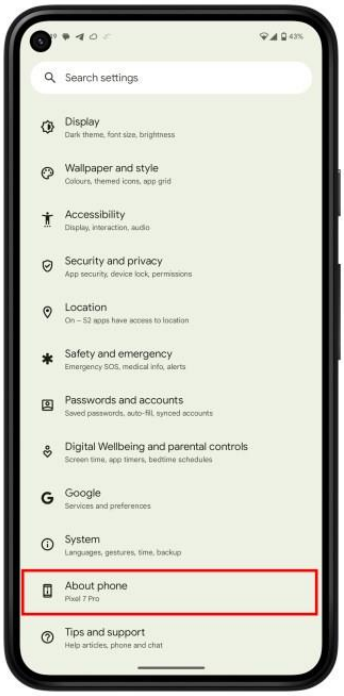
1. **Testsigma**
2. **Responsinator**
3. **Screenfly**
4. **LambdaTest**
5. **Am I Responsive?**
6. **CrossBrowserTesting**
7. **Browserstack**

9] What is the full form of .ipa, .apk

- .**ipa** stands for **iOS package App Store (IPA)** is a file containing a specific application's compressed data in a ZIP file.
- .apk stands for **Android Application PackageAPK**. An APK file is the file format used to install the applications on the android operating system. A program in android is first compiled, and then all of its parts are packaged into one single file to make it an APK file.

10] How to create step for to open the developer option mode ON? To check

Step 1: Go to *Settings* > *About phone*.



Step 2: Scroll down to *Build number*.

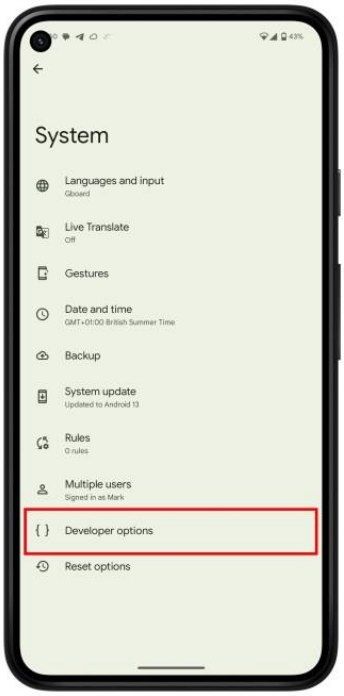
Related

- How to find your phone number on iPhone or Android
- This is one of the cheapest 5G phones worth buying today
- The most common Google Pixel 8 problems and how to fix them

Step 3: Tap *Build number* seven times. After the first few taps, you should see the steps counting down until you unlock the developer options. You may also have to tap in your PIN for verification.

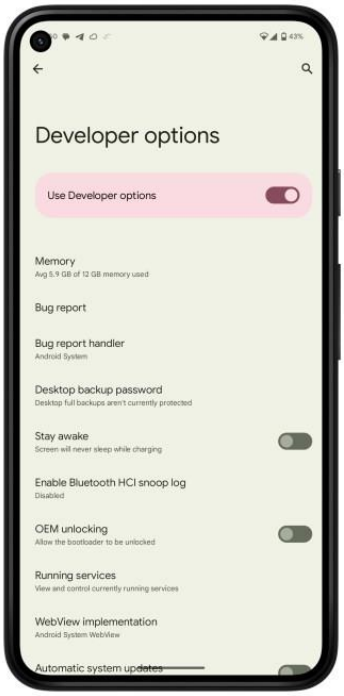
Step 4: Once developer options are activated, you will see a message that reads, *You are now a developer*.

Step 5: Go back to the *Settings* pane and head to *System*, where you will now find *Developer options* as an entry.



Step 6: Tap it and toggle the switch on if it is not already, and from there, you can proceed to make adjustments to your phone.

You can unlock the developer options on any Android smartphone or tablet by locating the build number in your *Settings* menu and tapping it multiple times. However, the exact location of the aforementioned build number may differ depending on your phone's manufacturer.



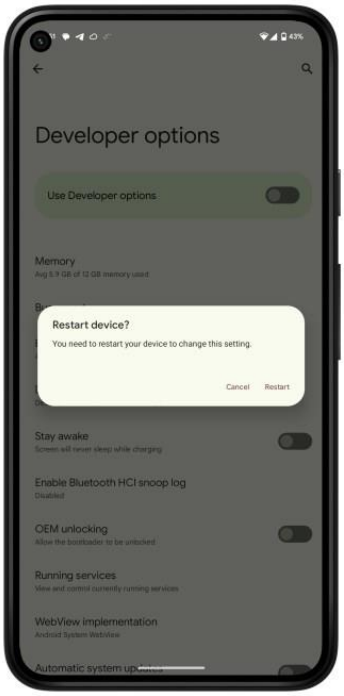
How to deactivate developer options

It’s simple to deactivate developer options straight from your *Settings* menu if you don’t need to access them anymore.

Step 1: Head over to *Settings* > *System* and click *Developer options*.

Step 2: Hit the toggle to *Off*. After a restart, you’re done.

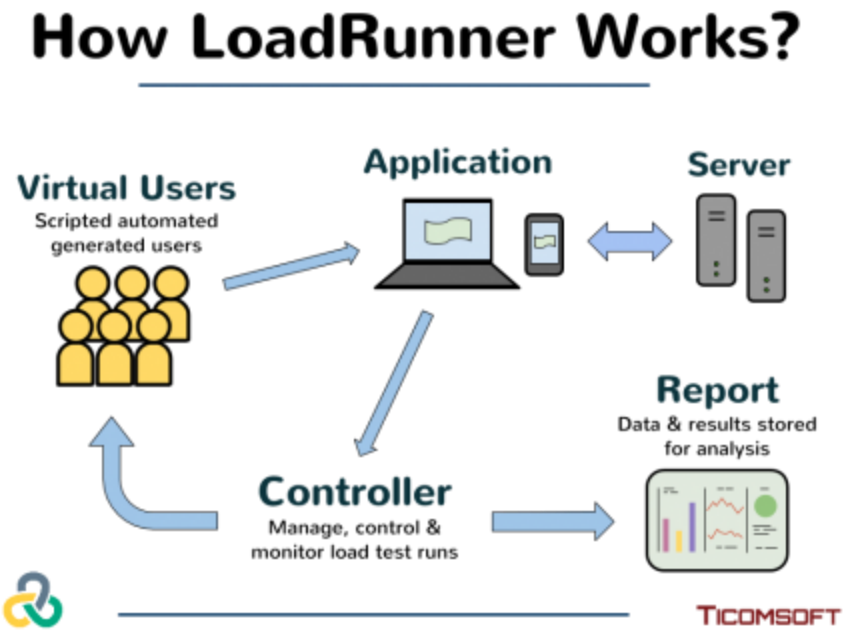
Yes, really. That’s all there is to it. After you’ve completed this step, you will no longer be able to access *Developer options* from the *Settings* menu. You can still modify these settings later if you change your mind and want to return them to their initial state. Simply follow the directions mentioned above.



Remember that developer mode was initially intended for app debugging and manipulating system responses and functionality. The selections within developer mode typically include debugging, networking, input, hardware-accelerated rendering, media, monitoring, and applications. It's up to you how you want to customize the settings, as you can categorize them according to your specific preferences.

11] Which components have you used in Load Runner?

LoadRunner consists of three main components: 1)**Virtual User Generator (VuGen), 2) Controller, and 3) Analysis.**

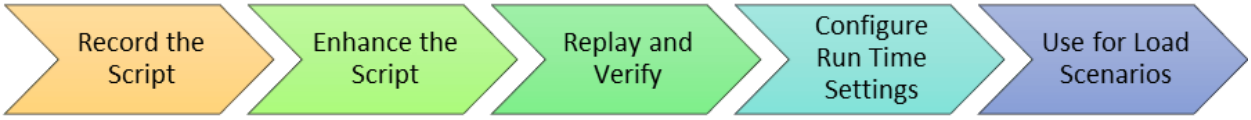


12] What is Correlation?

Correlation plays a crucial role in the success of a LoadRunner script. It handles dynamic values that change with each run of the script. These values, such as session IDs or server timestamps, are generated by the server and can't be predicted

13] What is the process for developing a Vuser Script? How can you set the number of Vusers in Load Runner? How many VUsers are required for load testing?

The script development process in VUGen



1. Record the Script: Usually, this is the first step of scripting where every user action is recorded into a script.

2. Replay and Verify: Once the script is recorded, reply the script to ensure its working right. Verify any impact through application frontend or database.
3. Enhance the Script: Once recording has been verified, enhance script by adding checkpoints, validating data, adding transactions and rendezvous points.
4. Replay and Verify: As earlier, re-play your script and verify that everything is working as intended.
5. Configure Runtime Settings: Configure and control pacing duration, think time variation, proxy settings and whether you wish to ignore any external resources.
6. Use for Load Scenarios: Formulate load scenarios based on test objectives. Use load distribution and geo-wide agents to make real like scenarios.

- If you already added your script, you will find an entry for it in the "Groups" grid. In that grid there's also a column for "Vusers". For your script the value will be set to 1 by default. If you want to increase that number, just double-click on the grid to edit the value.
- In VuGen, it's allowed to run only **one VUser**.

13] What is the relationship between Response Time and Throughput?

Response time and throughput are related. The response time for an average transaction tends to decrease as you increase overall throughput. However, you can decrease the response time for a specific query, at the expense of overall throughput, by allocating a disproportionate amount of resources to that query.

14] What is Automation Testing?

Automated Testing is a technique where the Tester writes scripts on their own and uses suitable Software or Automation Tool to test the software. It is an Automation Process of a Manual Process. It allows for executing repetitive tasks without the intervention of a Manual Tester.

Advantages of Automation Testing

- **Simplifies Test Case Execution:** Automation testing can be left virtually unattended and thus it allows monitoring of the results at the end of the process. Thus, simplifying the overall test execution and increasing the efficiency of the application.
- **Improves Reliability of Tests:** Automation testing ensures that there is equal focus on all the areas of the testing, thus ensuring the best quality end product.
- **Increases amount of test coverage:** Using automation testing, more test cases can be created and executed for the application under test. Thus, resulting in higher test coverage and the detection of more bugs. This allows for the testing of more complex applications and more features can be tested.
- **Minimizing Human Interaction:** In automation testing, everything is automated from test case creation to execution thus there are no changes for human error due to neglect. This reduces the necessity for fixing glitches in the post-release phase.
- **Saves Time and Money:** The initial investment for automation testing is on the higher side but it is cost-efficient and time-efficient in the long run. This is due to the reduction in the amount of time required for test case creation and execution which contributes to the high quality of work.
- **Earlier detection of defects:** Automation testing documents the defects, thus making it easier for the development team to fix the defect and give a faster output. The earlier the defect is identified, the more easier and cost-efficient it is to fix the defects.

15] Selenium IDE

Benefits of Using Selenium IDE

Selenium Integrated Development Environment also gives the feature to use more than one locator to identify elements which make it an easy choice tool for automating tests. Selenium Integrated Development Environment is based on the

Selenese commands with which it comprehends what activities it needs to perform for the purpose of testing.

Because of the ease of use, the Selenium Integrated Development Environment can be used by any one to develop automated test cases without requiring any technical expertise.