**Software Testing Assignment**

**Module-2 ((Load Runner Up and Selenium IDE)**

1. Which components have you used in Load Runner?
2. **Load Generator -** It is used to generate the load against the application by running the script.
3. **VuGen -** It is used for generating and editing scripts.
4. **Controller -** It is used to control, launch, and sequence the instance of a Load Generator.
5. **Agent Process -** It is used to manage the connection between the Controller and Load Generator instances.
6. **Analysis -** It assembles the logs from different load generators and formats the reports for visualization of results and monitoring data.

2. How can you set the number of Vusers in Load Runner?

You can set the number of Vusers in the controller section while creating your scenarios. Many other advanced options like ramp-up, ramp-down of Vusers are also available in the Controller section.

3. What is Correlation?

Correlated data is data which is sent to the client from the server, and later sent back to the server by the client

* + Dynamic data is correlated automatically by the client application (running in the browser) while recording a script
  + Reusing recorded dynamic data will cause errors when you replay the script
* Recorded dynamic data must be recorrelated using parameters

4. What is the process for developing a Vuser Script?

There are 5 steps for developing a vuser script.  
  
1-recording the vuser script .  
  
2-edit the vuser script.  
  
3-runtime setting .  
  
4-run the vuser script in stand-alone mode.  
  
5-incorporate the vuser script into a load runner scenario.

5. How Load Runner interacts with the application?

LoadRunner is a software testing tool from Micro Focus. It is used to test applications, measuring system behaviour and performance under load. LoadRunner can simulate thousands of users concurrently using application software, recording and later analyzing the performance of key components of the application.

6. How many VUsers are required for load testing?

Number of virtual users = Number of users per hour \* Number of requests per user \* 3600 / [Length of user scenario (in sec)]

Here:

* Number of users per hour = 10
* Number of requests per user = 10 (number of web pages he accesses)
* Length of user scenario = 10 min \* 60 = 600 sec

Hence using above formula:

Number of virtual users = 10 \* 10 \* 3600 / 600 = 600

Hence the above formula gives a user count of 600 users. However a noticeable point is in an hour a user runs for only 10 mins and is inactive for most of the time. Moreover tool licensing are planned in such a way that more the number of concurrent users you require, more is the cost of license. Thus we need a better way of calculating the required load in such a way that the production load is met without increasing the cost of the tool (and thus the test). Instead of keeping the users idle for 50 mins out of 1 hour of the test, if same user is made to perform the task of multiple users and thus create load without impacting the load, the concurrent vuser load required can be substantially reduced.

Eg. In above scenario, if after 10 mins, a virtual user is made to make multiple iterations and thus make 6 iterations in an hour the number of concurrent users required (for the performance test) can be substantially reduced to 100 vusers.

7. 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.

8. What is the difference between hits/second and requests/second?

* Hits per second means the number of hits the server receives in one second from the vuser.
* Request per second is the number of request the vuser will request from the server.

9. What is component testing?

A minimal software item that can be tested in isolation. It means “A unit is the smallest testable part of software.” • Component Testing – The testing of individual software components.

10. What is functional system testing?

A requirement that specifies a function that a system or system component must perform

**Selenium IDE**

11. What is Automation Testing?

Testing technique that uses automation testing tools to control the environment set-up, test execution and results reporting. It is performed by a computer and is used inside the testing teams.

12. Which Are The Browsers Supported By Selenium Ide?

Selenium IDE has add-ons for Firefox and Chrome browsers. Selenium IDE comes with a rich set of commands that are powered by Selenese and it allows you to record and test different interactions of a web application with the browser.

13. What are the benefits of Automation Testing?

* 70% faster than the manual testing
* Wider test coverage of application features
* Reliable in results
* Ensure Consistency
* Saves Time and Cost
* Improves accuracy
* Human Intervention is not required while execution
* Increases Efficiency
* Better speed in executing tests
* Re-usable test scripts
* Test Frequently and thoroughly
* More cycle of execution can be achieved through automation
* Early time to market

14. What are the advantages of Selenium?

* Selenium is an Open Source Software.
* Selenium supports various programming languages to write programs (Test scripts)
* Selenium supports various operating systems (MS Windows, Linux, Macintosh etc...)
* Selenium supports various Browsers (Mozilla Firefox, Google Chrome, IE, Opera, Safari etc...)
* Selenium supports Parallel Test Execution.
* Selenium uses fewer Hardware resources.
* Selenium Test Case Execution time is faster than other tools like UFT, RFT, TestComplete, SilkTest, etc.
* Test cases can be executed while the browser window is minimized.

16. Why testers should opt for Selenium and not QTP?

QTP can be used to test web, desktop applications, and client-server But Selenium is used to test only web applications. QTP UFT supports only code written in VB script. On the other hand, Selenium supports many languages, like PHP, Java, Ruby, Python, etc.

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