**Assignment: - 4**

**Q - Which components have you used in Load Runner?**A - Some of the key components of the LoadRunner are,

**Load** **Generator** - It is used to generate the load against the application by running the script.

**VuGen** - It is used for generating and editing scripts.

**Controller** - It is used to control, launch, and sequence the instance of a Load Generator.

**Agent** **Process** - It is used to manage the connection between the Controller and Load Generator instances.

**Analysis** - It assembles the logs from different load generators and formats the reports for visualization of results and monitoring data.

**Q - How can you set the number of Vusers in Load Runner?**

A - 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.

**Q - What is Correlation?**

A - Correlation is a process of capturing and storing the dynamic response from the server and passing it in the subsequent requests.

**Q - What is the process for developing a Vuser Script?**

A –

**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.

**Q - How Load Runner interacts with the application?**

A - Protocol is used in Load Runner to interact with the application.

**Q - How many VUsers are required for load testing?**

A - The main purpose of VUsers is to simulate the live environment. It is very tricky but easy to obtain number of VUsers required for the load/stress testing. Universal formula to calculate the arriving rate to the system is Little’s Law.

N = Z \* (R + T)

where N – number of VUsers,

Z – Transactions per Second (TPS)

R – Response Time in seconds

T – Think Time in seconds

If you get the following data from the stakeholders i.e. TPS, Response Time and Think Time, number of VUsers can be calculated easily.

E.g. TPS is 100, R is 3 sec and T is 2 sec then N will be

N = 100 \* (3+2)

= 100 \* 5

= 500

Peak load will be 500 VUsers.

**Q - What is the relationship between Response Time and Throughput?**

A - The Throughput graph shows the amount of data in bytes that the Vusers received from the server in a second. When we compare this with the transaction response time, we will notice that as throughput decreased, the response time also decreased. Similarly, the peak throughput and highest response time would occur approximately at the same time.

**Q - What is the difference between hits/second and requests/second?**

A - 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.

**Q - What is Automation Testing?**

A - Automation Testing is a software testing technique that performs using special automated testing software tools to execute a test case suite. On the contrary, Manual Testing is performed by a human sitting in front of a computer carefully executing the test steps.

The automation testing software can also enter test data into the System Under Test, compare expected and actual results and generate detailed test reports. Software Test Automation demands considerable investments of money and resources.

**Q - Which Are The Browsers Supported By Selenium Ide?**

A - Mozilla Firefox and Chrome.

**Q - What are the benefits of Automation Testing?**

A –

* 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

**Q - What are the advantages of Selenium?**

A –

* It supports C#, PHP, Java, Perl, Phython
* It supports different OS like Windows, Linux and Mac OS
* It has got powerful methods to locate elements (Xpath, DOM , CSS)
* It has highly developer community supported by Google

**Q - Why testers should opt for Selenium and not QTP?**

A - Selenium:-

* Selenium is an open-source tool.
* Selenium supports cross-browser and cross-platform testing.
* The configuration of the Selenium WebDriver is very easy. You just need to import its libraries.
* Selenium communicates directly with browsers in the browser’s native language.
* There are many programming languages which are supported by Selenium such as Java, C#, Python, Ruby, Perl, PHP, and Javascript.
* A separate class for different browsers for a better organization than RC.
* Selenium supports automating only Web Application Under Test (WAUT). Automating desktop applications are not supported.
* AutoIt can work with Selenium to automate interactions with Windows GUI.
* With Selenium, you can easily build Data Driven and Keyword Driven automation framework.
* Selenium WebDriver runs faster than Selenium RC.
* It supports executing test on headless browsers.
* Selenium also supports iOS and Android platform.

**Talking about, QTP:**

* Its is just a commercial tool, which is not free.
* QTP uses only one language that is VBScript.
* It only Windows platform.