Module : 4 (Automation core testing)

1. What is Automation testing ?

:- Automation testing is the use of software tools and scripts to automatically execute test cases during software development and quality assurance. By creating automated test cases, we improve efficiency, effectiveness, and test coverage while reducing human errors and saving time.

1. What are the benefits of Automation testing ?

:- The benefits of Automation testing is following :

* + - It is 70 % faster than manual testing.
    - Wider test coverage of application features.
    - It is reliable in result.
    - It ensures consistency.
    - It saves time and cost.
    - It improves accuracy and increases efficiency.
    - More cycle of execution can be achieved through automation.
    - Human intervention is not required while execution.

1. Which components have you used in Load Runner ?

:- in Load Runner components used are three :

1. Virtual User Generator
2. Controller
3. Analysis
4. How can you set the number of VUsers in load runner?

:- in load runner you can set the number of VUsers using following method :

* Controller Section : While creating your test scenarios in the controller, you can specify the desired number of VUsers.

1. How many VUsers are required for load testing ?

:- When conducting load testing, determining the optimal number of VUsers is crucial. Here’s a basic calculation to consider :

1. Calculate the total requests per minute :

* Multiply the number of concurrent users by the requests per user per minute.
* For example 1000 VUsers × 3 requests per minute = 3000 requests.

1. Adjust the balance :

* You can decrease the number of users while increasing the requests per minute per user to maintain the same total of requests per minute.
* For example
* 500 VUsers × 6 requests per minute = 3000 requests.
* 100 VUsers × 30 requests per minute = 3000 requests.

1. What Is Correlation?

:- Correlation refers to the process of capturing and handling dynamic values exchanged between the client and server during script execution. This dynamic values, such as session IDs, time stamps, or tokens, change with each interaction and impact the behaviour of subsequent requests.

1. What is the process for developing a VUser script?

:- Developing a VUser scripts involves several steps. As follows:

1. Create a Blank Script :

* Start by creating a new vuser script in VuGen (Virtual user generator).
* Open VuGen and select **File** > Click the **New Solution** button.
* In the Create a New Script dialog, choose the protocol for your script(e.g. HTTP, Web services, etc.).
* Enter a name for the script.
* Click **Create** to create the Vuser script.

1. Record User Actions :

* Record user interactions (such as clicks, form submissions, etc.) into the script.

1. Edit the script:

* After recoding, review and edit the script as needed.

1. Runtime settings:

* Configure runtime settings for the VUser, including number of interactions, and thick time, and pacing.

1. Replay and Verify :

* Replay the script to ensure it works correctly.
* Verify any impact on the application frontend or database.

1. Incorporate with LoadRunner scenario:

* Finally incorporate the Vuser script into LoadRunner scenario for load testing.

1. How Load Runner interacts with the application?

: LoadRunner simulates user activity by generating messages between application components or by simulating interactions with the user interface, such as key presses or mouse movements. These messages and interactions are stored in scripts. In a Sense LoadRunner creates realistic scenarios to assess how an application performs under different loads and conditions.

1. What is the relationship between Response Time and Throughput?

:- **Relationship :**

* **Inverse relationship :** Generally, there is an inverse relationship between response time and throughput. As throughput increases, response time tends to increase as well, because the system is handling more requests simultaneously, which can lead to congestion and delay.
* **Resource Allocation** : If more resources allocated to handle a specific query , the response time can be reduced, but this might reduce the throughput as fewer resources available for other transactions.
* **Stability :** If throughput decreases while response time increases, it indicates instability in the application.

1. What are the advantages of selenium ?

**:- Advantages**

* It is very easy to use and install.
* No programming experience is required, though knowledge of HTML and DOM are needed.
* It can export tests to formats usable in Selenium RC and web driver.
* It has built-in help and test results reporting module.
* It provides support for extensions.

1. Which are the browsers supported by Selenium IDE ?

:- The latest version of Selenium IDE supports the following browsers :

1. Firefox Browser
2. Chrome Browser
3. Why Testers should opt for Selenium and not QTP?

:- **Reasons :**

1. **Cost :** Selenium is an open source tool, which means it is free to use. QTP, on the other hand, is a commercial tool that requires a licence, making it more expensive.
2. **Programming Language Support** : Selenium supports multiple programming languages such as Java, Python, C#, Ruby, and JavaScript. This flexibility allows testers to Write test scripts in the language they are most comfortable with. QTP primarily supports VBScript.
3. **Browser and OS support** : Selenium supports a wide range of browsers(Chrome, Firefox, Safari, etc..) and operating systems (windows, macOS, Linux). QTP is limited to Windows OS and supports fewer Browsers.
4. **Community and documentation :** Selenium has a large and active community, which means there are plenty of resources, tutorials, and forums available for support. This makes it easier for testers to find solutions to their problems. QTP has a smaller community in comparison.