

# Software Testing Assignment

Assignment - 1

## Module – 4(Automation core Testing(Load RunnerUp and Selenium IDE))

\* Which components have you used in Load Runner?

- Virtual User Generator.
- Controller
- Load Generators
- Agent Process
- Analysis
- Monitoring

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

- In LoadRunner, the number of Virtual Users (Vusers) can be set through the Controller, which is the component used to manage and execute load test scenarios.

- **Steps:**

- • Open the Controller
- • Create or Open a Scenario
- • Define Vuser Groups
- • Set the Number of Vusers
- • Adjust Vuser Count
- • Distribute Vusers
- • Validate Settings

\* What is Correlation?

- Correlation in LoadRunner ensures that scripts accurately simulate user interactions by managing and replacing dynamic values with real-time data captured during recording, thereby enhancing the realism and reliability of performance tests.

\* What is the process for developing a Vuser Script?

- Developing a Vuser script in LoadRunner involves several key steps to accurately simulate user actions for performance testing. Here's a structured process for developing a Vuser script:

- **Plan and Define Scenarios:** Identify user interactions and performance metrics.
- **Record Script:** Capture user actions using VuGen.
- **Enhance Script:** Parameterize and correlate dynamic values.
- **Validate Script:** Playback to ensure correctness.

# Software Testing Assignment

## Assignment - 1

- **Customize Script (if needed):** Implement additional logic or functions.
- **Execute Test:** Configure and run load scenarios in Controller.
- **Monitor Performance:** Analyze metrics during test execution.
- **Analyze Results:** Review reports for bottlenecks and optimizations.
- **Document and Report:** Document scripts and share performance findings.

### \* How Load Runner interacts with the application?

LoadRunner interacts with the application under test primarily through the following steps:

1. **Script Recording:** Captures user interactions (HTTP/HTTPS requests) with the application.
2. **Script Execution:** Simulates user behavior by replaying recorded scripts with multiple virtual users.
3. **Parameterization and Correlation:** Manages dynamic values and ensures realistic data exchange during script execution.
4. **Performance Monitoring:** Monitors application and server metrics (CPU, memory, response times) during load tests.
5. **Analysis:** Analyzes collected data to identify performance bottlenecks and issues.

### \* How many VUsers are required for load testing?

- **Start with 100 VUsers:** A reasonable starting point for many applications, allowing initial load testing with a moderate number of concurrent users.
- **Scale up to 500-1000 VUsers:** Depending on application complexity and expected traffic, this range helps simulate heavier loads and scalability testing.
- **Customize based on results:** Adjust VUsers based on initial test findings to meet specific performance goals and to ensure realistic load simulation.

### \* What is the relationship between Response Time and Throughput?

- While Throughput measures the system's capacity to handle requests per unit of time, Response Time indicates how quickly the system can respond to those requests. Balancing these metrics is crucial for optimizing system performance and ensuring a satisfactory user experience under different load conditions.

### \* What is Automation Testing?

- Automation Testing involves using specialized software tools to automate the execution of tests and compare actual outcomes with predicted outcomes.
- It aims to enhance the efficiency, effectiveness, and coverage of software testing while reducing human intervention and repetitive manual tasks.

# Software Testing Assignment

## Assignment - 1

### \* Which Are The Browsers Supported By Selenium Ide?

- Chrome, Edge, IE, Safari, Firefox.

### \* What are the benefits of Automation Testing?

- **Efficiency:** Automated tests execute faster than manual tests, providing rapid feedback on software quality and accelerating the testing process.
- **Consistency:** Automated tests perform tasks consistently, minimizing human error and ensuring reliable test results across multiple test runs.
- **Cost-Effectiveness:** Despite initial setup costs, automation testing reduces overall testing expenses by saving time, labor, and resources throughout the software development lifecycle.

### \* What are the advantages of Selenium?

- Selenium offers cross-browser compatibility, supports multiple programming languages, and is open-source, making it versatile for automated web application testing.

**Programming Language Support:** Selenium supports various programming languages including Java, Python, C#, Ruby, and JavaScript. This flexibility enables testers and developers to use their preferred language for test automation.

**Platform Independence:** Selenium supports different operating systems (Windows, macOS, Linux) and integrates well with various development environments and CI/CD pipelines.

### \* Why testers should opt for Selenium and not QTP?

- Selenium is open-source, supports multiple languages and browsers, integrates well with CI/CD, and has a strong community, whereas QTP (UFT) is commercial, supports limited browsers/languages, and may have higher licensing costs and less community support.

\* To validate the tops technologies website Contact us page and enter your friend detail at last “Login and sidemenu”

<https://www.saucedemo.com/>

```
import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.chrome.ChromeDriver;
```

# Software Testing Assignment

Assignment - 1

```
public class SauceDemoContactUs {

    public static void main(String[] args) {
        // Set the path to chromedriver executable
        System.setProperty("webdriver.chrome.driver",
            "/path/to/chromedriver");

        // Initialize ChromeDriver
        WebDriver driver = new ChromeDriver();

        // Navigate to Sauce Labs Demo website
        driver.get("https://www.saucedemo.com/");

        // Click on Contact Us link in the side menu
        WebElement contactUsLink =
            driver.findElement(By.linkText("Contact Us"));
        contactUsLink.click();

        // Fill in Contact Us form
        WebElement nameInput = driver.findElement(By.id("name"));
        nameInput.sendKeys("Yogesh");

        WebElement emailInput = driver.findElement(By.id("email"));
        emailInput.sendKeys("yogesh@test.com");

        WebElement messageInput =
            driver.findElement(By.id("message"));
        messageInput.sendKeys("message.");

        // Submit the Contact Us form
        WebElement submitButton =
            driver.findElement(By.xpath("//button[@type='submit']"));
        submitButton.click();

        // Navigate to Login or any other section (e.g., side menu)
        driver.get("https://www.saucedemo.com/login.html");
    }
}
```

# Software Testing Assignment

Assignment - 1

```
// Enter your friend's details in Login form or any other section
WebElement usernameInput = driver.findElement(By.id("user-
name"));
usernameInput.sendKeys("Friend's Username");

WebElement passwordInput =
driver.findElement(By.id("password"));
passwordInput.sendKeys("Friend's Password");

// Close the browser
driver.quit();
}
}
```