Assignment-4

- **Which components have you used in load runner ?**
  1) **Load generator :** load generator is used to after executing the tests and i used the analysis components to review performance results. and help in generate graph and reports and this help in identify bottlenecks and performance issue.
  2) **Virtual user generator :** it allowed me to record user action on the application and edit them by adding logic, parameterization and correlation.
  3) **Ananalysis :** that used to distribute the virtual user load across different systems. which helped in testing how the application performs under stress from multiple locations or users.
  4) **Controller :** i configured the number of virtual users test duration pacing and think time. I also assigned scripts to different load generators to simulate concurrent users.
- **How can you set the number of vusers in load runner ?**
  1. Open the controller and create and load the scenario
  2. Add the script you want to run by clicking on "add scripts".
  3. In the group and scenario group select the script
  4. Set the number of vuser you want to simulate for that script
  5. And after than configuration
  6. During the test case execution and you can monitor the active vuser in realtime adjust if needed.
- **What is correlation ?**
  Correlation load runner is the process of handling dynamic values that are returned by the server during test script execution.
- **What is the process for developing a vusers script ?**
  A process of developing vuser script in loadrunner and involve several structure using vugen. These step ensure the script is reliable and reusable behaviour under load.

- **Identify test scenario:**

  Understand the business process to be tested and define the user action and data inputs expected output.

- **select the appropriate protocol**

  appropriate protocol is the choose the protocol for the application and truclient and web service.

- **Record the script**

  Record the script is work on launch vugen and start recording the business process and perform on the application exactly as a real user would.

- **Enhance the script**

  Run the script and vugen to verify functionality after than use runtime viewer and log setting to debug and resolve errors.

- **Save and integrate into scenario**

  Once the script is validated save it and import it into the loadrunner controller.

- **Final testing**

  Final testing is run the script under load and monitor result based on application behaviour .

- **How load runner interacts with the application ?**

  That is simulate by under application real user behaviour at the protocol level it does this by generating virtual users that perform predefined action or submitting form just like actual user would.

- **How many Vusers are required for load testing ?**

  The number vuser number required for load testing depends of the expected number of concurrent users. It is typically based on real world usage pattern during picked load conditions.

- **What is the relationship between response time and throughput ?**

  Throughout is number of requests processed by the system per unit of time. When through is low,response time usually fast because the system is lightly loaded.

At peack capacity, a small increase in throughput can cause a large increase in response time.

Response is the time taken by the system process a single user request and send back a reaponse.

- **To test the performance testing on "Tops technologies website".**

  To record all top level menu
    - Open loadrunner vugen
    - Select the appropriate protocol,usually web HTTP/HTML for web application.
    - Start recording by launching the browser from VUgen.
    - Navigate to http://www.parabank.com perform action on all top level menu items you want to test.
    - Stop recording when all menu interaction are captured.
    - Save the recorded script for further enhancement.

  To record minimum 10 Vuser on this website

    - Open the loadrunner controller
    - Create a new scenario and the previously recorded script.
    - Set the number of Vusers to 10 in the scenario settings to simulate 10 virtual users.
    - Configure ramp-up time and test duration as per requirements.
    - Assign load generators if needed
    - Save the scenario.

  Save all

    - save the Vugen script after recording and enhancing it.
    - Save the controller scenario design after configuring Vusers and test parameters.
    - Save all files properly for submission and future reference.

- **create a normal script of above website with correlate using hp default website.**

```
Action()
{
// Start the transaction for login
// Open the login page
web_url("Open_Login_Page",
"URL=https://www.parabank.com/"
"TargetFrame=",
"Resource=0",
"RecContentType=text/html",
"Referer=",
"Snapshot=t1.inf",
"Mode=HTML",
LAST);
// Correlate a dynamic token (example placeholder) // Usually,
you capture a token or session ID from server response
web_reg_save_param("session_id",
"LB=name=\"sessionToken\" value=\""
, "RB=\"",
"Search=Body",
LAST);
// Submit login form with correlated session token (if applicable)
web_submit_data("login",
"Action=https://www.parabank.com/",
"Method=POST",
"RecContentType=text/html",
"Referer=https://www.parabank.com/",
ITEMDATA,
"Name=user-name", "Value=standard_user", ENDITEM,
"Name=password", "Value=secret_sauce", ENDITEM,
// Use correlated session token if required
//"Name=sessionToken", "Value={session_id}",
ENDITEM, LAST);
lr_end_transaction("Login", LR_AUTO);
```

```
// Start transaction to open inventory page
lr_start_transaction("Open_Inventory_Page");
web_url("Inventory",
"URL=https://www.parabank.com/inventory.html",
"TargetFrame=",
"Resource=0",
"RecContentType=text/html",
"Referer=https://www.parabank.com/",
"Snapshot=t3.inf",
"Mode=HTML",
LAST);
lr_end_transaction("Open_Inventory_Page", LR_AUTO);
return 0;
}
```

- **what is automation testing ?**
  Automation testing is use of the softwear is control the execution of tests
  the comparison of actual outcomes to predicted outcomes the setting up of
  test precondition and other test control and test reporting function.
  Automation testing is process of writing a computer program to do testing
  that would otherwise need to be done manually.
- **Which are the browsers supported by selenium IDE?**
  selenium IDE is use in mozila firefox and google chrom supported by
  selenium IDE.
- **What are the benefits of Automation Testing?**
  Advantages
    1. reusable test scripts
    2. save time and cost
    3. 70% faster than the manual testing
    4. improves accuracy
    5. reliable in result
    6. better speed in executing testing

7. wider test coverage of application features
8. more cycle of execution can be achieved through automation

- **what is advantage of selenium ?**

1. Open-Source and Free to Use

2. Supports Multiple Programming Languages

3. Cross-Browser Compatibility

4. Multi-Platform Support

5. Comprehensive Testing Framework

6. Wide Range of Integration Options

7. Community Support and Resources

8. Scalability and Parallel Testing

9. Real-World Browser Testing

10. Flexibility in Test Case Design

- **why tester should opt for selenium and not QTP ?**

1. **open source and free**

   selenium is open source platform and free platform and free while QTP and licenced.

2. **support multiple browsers**

   selenium is support and use in multiple browsers and QTP has limited browser support.

3. **support multiple programming language**

    Selenium supports Java, Python, C#, Ruby, JavaScript, etc., offering more flexibility; QTP primarily supports VBScript.

4. **cross platform support**

   Selenium runs on Windows, Linux, and MacOS, whereas QTP is Windows-only.

5. **better for web application**

   Selenium is designed specifically for web automation, while QTP is more general-purpose but heavier.

6. **large community and support**

   Selenium has a vast user community and frequent updates due to its open-source nature**.**

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  https://www.saucedemo.com/
    1. **side file**
       https://github.com/ankitpatel2716/module1/blob/main/module/Swag%20Labs%20(1).side
    2. **java file :**
       https://github.com/ankitpatel2716/module1/blob/main/module/WebsiteTest%20(1).java