**Module: 3**

1. **What is stress testing?**

* Stress testing - System is stressed beyond its specifications to check how and when it fails. Performed under heavy load like putting large number beyond storage capacity, complex database queries, continuous input to system or database load.
* Stress testing is used to test the stability & reliability of the system. This test mainly determines the system on its robustness and error handling under extremely heavy load conditions.

**Need for Stress Testing:**

* During festival time, an online shopping site may witness a spike in traffic, or when it announces a sale.
* When a blog is mentioned in a leading newspaper, it experiences a sudden surge in traffic.
* To check whether the system works under abnormal conditions.
* Displaying appropriate error message when the system is under stress.
* System failure under extreme conditions could result in enormous revenue loss
* It is better to be prepared for extreme conditions by executing Stress Testing.

1. **What is load testing?**

* Load testing gives confidence in the system & its reliability and performance. • Load Testing helps identify the bottlenecks in the system under heavy user stress scenarios before they happen in a production environment.
* Load testing gives excellent protection against poor performance and accommodates complementary strategies for performance management and monitoring of a production environment.

**Goals of Load Testing:**

* Loading testing identifies the following problems before moving the application to market or Production:

1. Response time for each transaction

2. Performance of System components under various loads

3. Performance of Database components under different loads

4. Network delay between the client and the server

5. Software design issues

6. Server configuration issues like Web server, application server, database server

7. Hardware limitation issues like CPU maximization, memory limitations, network bottleneck, etc.

8. Load testing will determine whether system needs to be fine-tuned or modification of hardware and software is required to improve performance.

**3. When to used usability testing?**

* Usability Testing, a small-set of target end-users, of a software system, “use” it to expose usability defects.
* This testing mainly focuses on the user’s-ease to use the application, flexibility in handling controls and ability of the system to meet its objectives.
* This testing is recommended during the initial design phase of SDLC, which gives more visibility on the expectations of the users.

1. **What is the procedure of GUI testing?**

* Graphical User Interface (GUI) testing is the process of testing the system’s GUI of the System under Test. GUI testing involves checking the screens with the controls like menus, buttons, icons, and all types of bars – tool bar, menu bar, dialog boxes and windows etc.

**WHAT DO YOU CHECK IN GUI TESTING?**

* Check all the GUI elements for size, position, width, length and acceptance of characters or numbers. For instance, you must be able to provide inputs to the input fields.
* Check you can execute the intended functionality of the application using the GUI
* Check Error Messages are displayed correctly
* Check for Clear demarcation of different sections on screen
* Check Font used in application is readable
* Check the alignment of the text is proper
* Check the Color of the font and warning messages is aesthetically pleasing • Check that the images have good clarity
* Check that the images are properly aligned
* Check the positioning of GUI elements for different screen resolution.

**Approach of GUI Testing:**

**MANUAL BASED TESTING** :

Under this approach, graphical screens are checked manually by testers in conformance with the requirements stated in business requirements document.

**RECORD AND REPLAY**:

GUI testing can be done using automation tools. This is done in 2 parts. During Record , test steps are captured into the automation tool. During playback, the recorded test steps are executed on the Application under Test. Example of such tools - QTP.

**MODEL BASED TESTING:**

A model is a graphical description of system’s behavior. It helps us to understand and predict the system behavior. Models help in a generation of efficient test cases using the system requirements.