Acceptance Testing (User Acceptance Testing)

It is an end to end testing, done by the customers where in they use software for real time business for some particular period of time and check whether software can handle all the real time business, scenarios and situations. This is called as Acceptance Testing.

Why acceptance testing?

1) To get confidence on the product or software.
2) To ensure that application meets the business requirements.
3) To make sure that software company is not developing wrong features.

Types of Acceptance testing

Alpha Testing - Acceptance Testing done in company environment.

Beta Testing - Acceptance Testing done in customer environment.

Types of Non Functional Testing

Performance Testing

Compatibility testing

Usability Testing

Performance Testing

Testing the stability and response time of an application by applying load is called as Performance testing.

Why performance testing - To check how is the response time and stability of an application when load is applied.

Stability means checking how the many users can software can accept(ability to withstand designed number of users).

Response Time means time taken by server to respond to user query

Types of Performance Testing

Load Testing - By applying within limit

Stress Testing - Applying more load

Scalability Testing - Applying more load and check where exactly software crashes

Volume Testing - testing the database of large volume of data

Soak Testing/ Endurance Testing - Testing by applying load continuously for long time

Compatibility Testing(Cross browser testing)

Testing the functionality of an application or software for different hardware and software configurations is called Compatibility Testing.

Why Compatibility Testing - Tester might have tested software in one platform, chances are there the users will use the software in different platforms and the software might not work and this will spread bad name in the market and software usage will go down, to avoid that we do compatability testing.

To ensure all the features is consistently working for all platforms, we will do compatibility testing

Different platforms - Different OS, Browsers.

How tester will do compatibility testing

1) Initially Testers will test for base platform i,e,. Lets say among the browsers - chrome, firefox, safari, according to market research chrome is widely used, hence we will consider chrome as the base platform and start the software in Chrome first and later we will test for other browsers.
2) Same process is applicable for OS also.

Usability testing

Testing the userfriendlyness of an application is called as usability testing.

Why usability testing

To ensure software is in simple language, easy to access, easy to navigate and look and feel of the application should be good.

GUI Testing is a part of Usability Testing.

Functional Testing key points

1) It is done before Non-Functional Testing
2) It validates/checks functionality of the software
3) Functionality describes what software does
4) Works on customer requirements

Non Functional Testing key points

1) It is done after Functional Testing
2) It validates/checks non- functionality of the software
3) Functionality describes how software works
4) Works on customer expectations

Gray Box Testing Techniques

Gray Box testing is a combination of whitebox and blackbox testing.

This testing technique to test a software product or application with partial knowledge of internal structure of the application.

The purpose of gray box testing is to search and identify the defects due to improper code structure or improper use of applications.

Types/techniques

Matrix Testing - In matrix testing techniques, business and technical risks which are defined by the developers in software programs are examined.

Developers define all the variables that exist in the program.

Values are stored in the variables through which it will travel inside the program, now this should be as per requirement, otherwise it will reduce the speed of the software and readability of program. With Matrix Testing, we can remove unused or uninitialized variables by identifying used variables.

Pattern Testing:

Pattern Testing is done on those softwares that developed copying the patterns of other softwares. In these softwares there is high probability of getting similar kind of defects. With Pattern testing we can analyze reasons of failure easily.

To perform testing, previous defects are analyzed.

Pattern testing determines the cause of the failure by looking into code.

White box Testing Techniques

Testing each and every line of the code is called as White box testing.

Or

Looking into the source code and checking whether

each and evry line of the code is working as expected or not is called as White box testing.

Developer will do White box testing.

It is also called as Open box/Transparent testing.

Types of White box testing

1) **Path Testing** - Here Developers will write the flowchart and test each and test each and every individual paths, this is called as Path Testing. They check entry and exit of every Path of module.

2) **Conditional Testing/Branch coverage** - Here Developers will test the code for logical conditions, that is for both ‘True’ and ‘false’ conditions. This is conditional testing.(If-else conditions is checked)

3) **Loop Testing** - Here developer will test the loop and ensure that loop is repeating for all the defined number of cycles. This is called as Loop Testing.

   In Loop testing, developer will make sure terminating conditions are working properly or not(while, do while, for)

4) **Unit Testing** - Customer has give the requirement, developers will write main program for the requirement and write the corresponding test program in the same language and run the test program against main program, where in test program will automatically test the main program and give the result as pass or fail. This is called as Unit Testing. (**Focus is done on smallest element of software**).

   Junit is a tool used for Unit Testing commonly.

5) **Testing the code from memory(size) point of view** - By changing the logic of the code, memory can be improved, logic varies from person to person. Suppose if there same code or duplicate code, then user defined code is used.

Example - let's say, one developer writes a code and file size is upto 500 kb, another developer writes a similar code with similar logic and file size is upto 250 kb.

Here we use tool called as rational purifier to test for these large codes(variables and functions).

Testing from performance point of view - The application could be slow because of these reasons - for conditional cases, we use or & and frequently, not using nested if statements instead of switch case or when logic is used.

Here, we use a tool called ‘Rational Quantify’, which resolves these issues automatically(when we execute the codes, we get outcome in the form of thick and thin lines, thick lines means codes which are time consuming, thin lines means codes which are not time consuming)

Advantages of WBT

It is done in SDLC even without GUI

Hidden errors in the code can be identified

Testing is more thorough

Disadvantages:

Expensive and complex

Too much time consuming for big applications

Experienced based Testing techniques

In this technique, test cases are derived from Testers skill and intuitive. Their experience with applications and technologies will play a key role.

Why Experienced based testing techniques:

1) When requirements are not available
2) Requirements are complex to understand
3) Less time to understand the requirement

Types of Experience based testing

Error Guessing - Here, Tester guesses the error entering data against given requirement.

Checklist based Testing - Here Testers created a checklist for creating different functionalities and use cases for testing.

Exploratory Testing - Here, Testers explore the application, navigate through different functionalities and tries to find defects.

It is very important to have experienced Tester who have a similar experience of the project to be worked on, otherwise it may lead to lot of defects.