**Assignment module 2\_ Bhakti Patel**

**· What is Exploratory Testing?**

* Exploratory Testing is done without any test design or cases and exploratory testing is to explore a system without any knowledge of internal structure. It depends on tester’s experience and knowledge of a domain.

**· What is traceability matrix?**

* A document that maps relation between requirement with test cases is known as traceability matrix

**· What is Boundary value testing?**

* Boundary value testing is a black box testing technique. It focuses on the behaviour of a system/ component with minimum and maximum input limits or testing a component with boundaries of input limits.

**· What is Equivalence partitioning testing?**

* Equivalence partitioning testing is a black box testing technique. It reduces the number of test cases required while testing a specific component. It involves dividing input data of a component in parts.

**· What is Integration testing?**

* Integration testing is a level of software testing process where individual units are combined and tested as a group. Integration testing performed to find defects when two or more units/components are combined.

**· What determines the level of risk?**

* The likelihood of a risk that occur and impact of that risk if it occurs in future

**· What is Alpha testing?**

* It is an early-stage testing always performed by the developers at the developer site.  It is always performed within an organization

**· What is beta testing?**

* It is always performed by the customer on their own site. It is a form of acceptance testing. It is a kind of black box testing

**· What is component testing?**

* Component testing is a level of a testing, where individual unit/component is to be tested. The testing of individual software component.

**· What is functional system testing?**

* Functional system testing is a type of black box testing that verifies whether a software or application behaves as per its specified requirements and meets expected business needs. It focuses on validating the system’s feature, capabilities, and interaction with different components without knowing internal structure of a system.

**· What is Non-Functional Testing?**

* Non-functional testing is a type of a black box testing that do not relate to any functionality. It includes performance, Usability, Security and reliability. It ensures system meets quality standards.

**· What is GUI Testing?**

* Graphical User Interface Testing is a process of testing the system’s UI. GUI testing involves screen with the controls like menus, buttons, icons, tool bar, menu bar, dialogue boxes, windows etc.

**· What is Adhoc testing?**

* Adhoc testing is informal testing type to find defects. It is unplanned testing method where testers explore the application without any test plan or documentation.  It is also known as error guessing technique of testing

· **What is load testing?**

* Load testing is a performance testing type to check an application behaviour with maximum allowed load

**· What is stress Testing?**

* Stress testing is a performance testing type to check an application behaviour with more than maximum allowed user

**· What is white box testing and list the types of white box testing?**

* White box testing is a type of a testing, it is based on the internal structure of a code.  It is also known as structure based or Glass box testing. In this type of testing, tester should have knowledge of internal structure of a system.

**Types of White box testing:**

1. Statement/segment coverage
2. Branch/Decision coverage
3. Condition coverage

**· What is black box testing? What are the different black box testing techniques?**

* Black box testing is a type of Functional testing, it is either functional or non-functional, it does not require any knowledge of internal structure of the component or system. It is specification-based testing technique.

**Back box testing techniques are:**

1. Equivalence partitioning   
2. Boundary value analysis

3. State transition Testing

**· Mention what are the categories of defects?**

* Critical, Major, Minor

**· Mention what bigbang testing is?**

* Big bang testing is a method of integration testing level. In bigbang testing all components or modules are integrated together and everything tested as a whole system.

**· What is the purpose of exit criteria?**

* It is used to decide when testing at any stage is complete. The set of generic and specific conditions, agreed upon with the stakeholders for permitting a process to be officially completed.

**· When should "Regression Testing" be performed?**

* Regression testing should be performed after a bug fix. When a new build is released with bug fix, we need to recheck the bug as well as need to perform regression testing on the other functionalities whether they are working fine after a fix. The latest code change should not affect the other working functionalities of an application

**· What is 7 key principles? Explain in detail?**

1. Testing shows presence of Defects:

* Testing shows the presence of defects but cannot prove that there are no defects in the application.
* Testing reduces probability of defects
* Testers tests to find the defects

1. Exhaustive testing is impossible

* Testing everything including all the combinations of inputs and preconditions is not possible
* It requires so many resources, it is too expensive, it takes too long time, it is inappropriate

1. Early testing:

* Testing activities should be start as early as possible in development life cycle

1. Defect Clustering:

* A small number of modules contains most of the defects, they are called clustered
* Defects are not evenly spread in the system
* In the other words, most defects found during testing are usually confined to a small number of modules. So, it is important consideration in test prioritisation

1. Pesticide Paradox:

* If same test cases are repeated again and again, eventually the same set of test cases will no longer find any new defects
* To overcome this pesticide paradox, the test cases need to be updated regularly, they should be reviewed and revised, new different test cases need to be added to test different parts of the software and find new defects

1. Testing is context dependent:

* Different kind of software can be tested differently

e.g., Safety critical software is tested differently from e-commerce software

1. Absence of error fallacy:

* Software build should be stable before starting testing it

**· Difference between QA v/s QC v/s Tester**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr No** | **QA** | **QC** | **Tester** |
| 1 | Quality Assurance | Quality Control | Subset of QC |
| 2 | It focuses on process | It focusses on product | It focuses on test execution |
| 3 | Done before development | Done after development | Done during development and after development |
| 4 | It prevents defects | It finds defects | It is actual testing of a software |

**· Difference between Smoke and Sanity?**

* **Smoke Testing:** Smoke testing is a build verification test. It is performed to check if the released build is working fine to test further, only high-level functionality is tested in smoke testing
* **Sanity Testing:** Sanity Testing is a Testing performed after a bug fix and if any new functionality is added and build is released. It is to check the build after a bug fixes and New functionality is working fine.

**· Difference between verification and Validation**

|  |  |  |
| --- | --- | --- |
| **No** | **Verification** | **Validation** |
| 1 | It focuses on reviewing documents | It is a live testing |
| 2 | Verification is done in static testing | Validation is part of Dynamic testing |
| 3 | It is to check are we building a software, right? | It is to check are we building right software |
| 4 | In verification requirement review, walkthrough, inspection is done | Testing of an application is being done |

**· Explain types of Performance testing.**

* Load Testing
* Stress Testing
* Endurance Testing
* Scalability Testing
* Volume Testing
* Spike Testing

**· What is Error, Defect, Bug and failure?**

**Error**: A mistake in coding is called error

**Defect:** An error found by tester is defect

**Bug:** A defect which is accepted by development team is a bug

**Failure:** A functionality which does not meet customer’s requirement is failure

**· Difference between Priority and Severity**

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| **No** | **Priority** | **Severity** |
| 1 | Priority defines the order in which we should resolve the defect | Severity Defines the impact of defect on the system’s functionality |
| 2 | Priority can be High, Medium, Low | Severity can be Critical, major, medium, minor |

**· What is Bug Life Cycle?**

* Bug life cycle is a cycle of a bug that goes through specific sets of states in its entire life. Bug life cycle is starting from a new defect detected to the closing off that defect by the tester.
* It has following Phases:
  1. New
  2. Assigned
  3. Open
  4. Deferred /Rejected/Duplicate
  5. Fixed
  6. Reopened
  7. Retest
  8. Verified
  9. Closed

**· Explain the difference between Functional testing and Non-Functional testing**

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| **No** | **Functional Testing** | **Non-Functional Testing** |
| 1 | It is a type of testing in which the system is tested against the functional requirements and specifications | It verifies the behaviour of the system is as per requirement or not. |
| 2 | It is based on the requirement of customer | It is based on expectations of customer |
| 3 | Functional testing is easy to execute manually | Non-functional testing is hard to execute non-functional testing manually |
| 4 | It tests what product does | It describes how the product does |
| 5 | Functional testing is based on business requirements | Non- functional testing is based on the performance requirement |
| 6 | Functional Testing Types: Unit testing, Smoke testing, Integration testing, System testing | Non- Functional Testing types: Performance Testing, Load Testing, Stress Testing, Scalability Testing, Usability Testing |

**· What is the difference between test scenarios, test cases, and test script?**

* **Test Scenario:** Test Scenario is test condition or test possibility, Test scenario describes what to be tested, Test Scenarios can be derived from the use cases
* **Test Cases:** Test cases involves set of steps, conditions, inputs which can be used while performing testing. Test cases describes what to be tested, Test Cases are derived from test scenarios. Test cases keep trac of testing coverage
* **Test Script:** Test Script is the sequence of actions for a test. Test scripts can be manual or automated.

**· Explain what Test Plan is? What is the information that should be covered.**

* Test plan is the document which is used to plan testing activities. It describes test scope, objective, approach, resources and schedule of testing activities.

Test plan should have:

1. Introduction
2. Test Strategy
3. Scope
4. Test Type
5. Risk and Issue
6. Test Logistics
7. Test Objectives
8. Test Criteria (Suspension and Exit)
9. Resource planning
10. Test Environment
11. Schedule and Estimation
12. Delivery

**· What is the difference between the STLC (Software Testing Life Cycle) and SDLC (Software Development Life Cycle)?**

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| --- | --- |
| **SDLC (Software Testing Life Cycle)** | **SDLC (Software Development Life Cycle)** |
| It describes the entire process of creating of a software | It focuses on the testing phases within SDLC, if software meets its quality standard |
| It covers all the phases of software development including Requirement Gathering, Design, Coding, Testing, Deployment, Maintenance. | It has Requirement analysis, Test Planning, Test case creation, Test environment, Test case execution, Test cycle closure phases |
| The main goal of SDLC is to deliver a high-quality software that meets user requirements | The main goal of STLC is to ensure software is thoroughly tested, meets quality standard and it is free of defects |

**· What is priority?**

* + Priority defines the order in which we should resolve the bug. For example, if the company name is misspelled in the home page of the website, then the priority is high and severity is low to fix it.
  + Priority can be following type: Critical, High, Medium, Low

**· What is severity?**

* + Severity defines the seriousness of defect affecting on the system. For example, if an application crashes when click on link than the severity is high but priority is low.
  + Severity can be following type: Critical, Major, Medium, Minor

**· Bug categories are…**

* + Bug categories are: Database defect, Security defect, Functionality defect, Performance Defects

**· Advantage of Bugzilla**

* + Bugzilla is an Open-source Bug tracking tool
  + It has advance search Functionality
  + It indicates with an email when any bug is reported or update for the bug
  + It has time tracking functionality
  + It is easy to use

**· What are the different Methodologies in Agile Development Model?**

* + Agile methodologies include Scrum, Kanban, Extreme Programming (XP), Feature Driven Development (FDD), Crystal

**· Explain the difference between Authorization and Authentication in Web testing. What are the common problems faced in Web testing?** 

Authentication: Accepting an invalid username/password

Authorization: Accessibility to pages though permission not given