**MODULE–2(Manual Testing)**

**• What is Exploratory Testing?**

* Exploratory testing is a type of experienced based technique in which test cases are not created in advance but testers is free to select any possible methodology to test the software.

**• What is traceability matrix?**

* It is a graphical presentation by which one should be able to trace back from every system component to their original requirements.

**• What is Boundary value testing?**

* Boundary value analysis is a type of black box testing which is performed by using valid and invalid boundary values.

**• What is Equivalence partitioning testing?**

***Equivalence class partiotion***

* It is a type of black box testing that allows the testers to divide the input domain into different partition of classes.
* For example : if the input domain for a text field is 1 to 1000. so while preparing test case for all valid inputs and other test cases for invalid inputs.

The tester will divide the input domain into 3 class of inputs:

1. Any value less than 1 : invalid
2. Any value within 1 to 1000 : valid
3. Any value greater than 1000: invalid

**• What is Integration testing?**

* Integration testing is the type of testing where software modules are integrated logically and and tested as a group.
* It is involves checking individual units or components of a software project to identify problems and track bugs and defects , fix those to ensure that they work together as intended.

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

* Level of risk are as below:

1. Project risk
2. Product risk

**• What is Alpha testing?**

* Alpha testing is a test which is done by the developers and testing team at the developing organization.
* It is done at virtual environment.

**• What is beta testing?**

* Beta testing is a test which is performed by customers at their own site.
* It is done at real time environment.

**• What is component testing?**

* Component testing is a first level of testing where individual units/components or testable parts of software are tested.
* Its is also known as module testing or programme testing.
* It is typically run and developed by developers.
* It is performed by using the white box technique.

**• What is functional system testing?**

* It is a type of system testing in which the system is tested against the functional requirements and specifications.
* In this test each functionality of the software application is tested by providing appropriate test input, expecting the output and comparing the actual output with expected output.

**• What is Non-Functional Testing?**

* it is a type of system testing that verifies non functional aspects of the product such as performance, stability and usability.
* It verifies how well the product performs.
* Emaples: performance testing

Load testing

Security testing etc.

**• What is GUI Testing?**

***Graphical user interface***

* GUI testing is a process of testing an application’s visual elements, such as images, texts, buttons,icons etc.
* It focus on the design of the screen and ease of the interaction with the graphical elements on the screen.

**• What is Adhoc testing?**

* Adhoc testing is a type of experience based technique which aims to break the system.
* It is a testing where the experienced and good testers are encouraged to think of situation in which the software may not be able to cope.

**• What is load testing?**

* It is a kind of performance testing which is done to check system’s behavior or performance under a range of loads to determines at which point the systems response time degrades or fails.
* It helps to determine how the application behaves when multiple users access it simultaneously.

**• What is stress Testing?**

* Stress testing is done to analyze the behavior of system after failure.
* It determines the limit, at which the system or software or hardware breaks.
* For stress testing to be successful , system should display appropriate error message while under extreme condition.s

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

* it is a testing based on an analysis of the internal structure of component or system.
* In this type, testers requires knowledge of how the software is implementes, how it works.
* It is also known as ‘glass box’ testing, ‘open box’ testing.
* **THERE ARE THREE TYPES:**

1. Statement or segment coverage
2. Decision coverage
3. Condtion coverage

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

* Black box testing is a type of functional testing in which testing is done without reference to the internal structure of the component or system.
* In this type the testers have no any knowledge of how the system or component is structured inside the box and does not have access to the source code.
* The tester will interact with system’s interface by providing inputs and examining outputs without knowing how and where the inputs are worked upon.
* ***TYPES OF BLACK BOX TESTING:***

1. Boundry value analysis
2. Equivalence partitioning
3. State transaction testing
4. Decision table

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

1. Data quality defect
2. Critical functionality defect
3. Functionality defects
4. Security defects
5. User interface defects

**• Mention what bigbang testing is?**

* Big bang testing is a testing approach where all components or module are integrated and tested as a single unit.
* It is done after all modules have been completed and besfore any system -level testing is performed.

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

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

* it is a type of testing that is done to verify that code change in the software does not impact the existing functionality of the product.
* it ensures that modification have not caused unintended side effects elsewhere and modified system still meets its requirements.

**• What is 7 key principles?**

* **There are 7 principles of testing.**

1. ***Testing shows presence of defects***
2. ***Defects clustering***
3. ***Exhaustion testing is impossible***
4. ***Pesticides paradox***
5. ***Absence of error follacy***
6. ***Context dependent***
7. ***Early testing***

**• Difference between QA v/s QC v/s Tester :**

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| --- | --- | --- |
| **QA** | **QC** | **Testers** |
| Activities which ensures the implementation of processes, procedures and standards in context to verification of developed software and intended requirements. | Activities which ensures the verification of developed software with respect to documented( or not in some cases) requirements. | Acticites which ensure the identication of bugs/error/defects in the software |
| Focus on processes and procedures rather conducting actual testing on the system. | Focus on actual testing by executing software with intend to identify bug/defect through implementation of proceducer and process. | Focus on actual testing. |
| Process oriented activites. | Product oriented activites. | Product oriented activities. |
| Preventive acrivities. | It is a corrective process. | It is a preventive process. |
| It is a subset of software test life cycle. | It is a subset of Quality Assurance. | It is a subset of Quality Control |

**• Difference between Smoke and Sanity:**

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| **Smoke testing** | **Sanity Testing** |
| Smoke testing is performed to ascertain that the critical functionalities of the program is working fine. | Sanity testing is done to check the new functionality/bugs have been fixed. |
| The objective of this testing is to verify “stability” of the system in order to with more reigorous testing. | The objective of the testing is to verify the “rationality” of the system in order to proceed with more rigorous testing. |
| This testing is performed by the developers or testers. | Sanity testing is usually performed by testers. |
| Smoke testing is usually documented or scripted. | Sanity testing is usually not documented and scripted. |
| Smoke testing is a subset of regression testing. | Sanity testing is a subset of acceptance testing. |
| It excercises the entire system from end to end | Sanity testing exercise only the component of the entire system. |
| Smoke testing is like general health check up | Sanity testing is like specialized health check up. |

**• Difference between verification and Validation :**

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| **Verification** | **validation** |
| Verification is the process of evaluating the system/products in the development phase to find whether they meet the specified requirements or not | Validation is the process of evaluating software at the end of development process in order to determine whether software/ system meets the customer expectations and requirements or not. |
| Verification process involves:   1. Walkthrough 2. Review 3. inspections | Validation involves:   1. Black box testing 2. White box testing 3. Experienced based testing |
| Verification of software is carried out by quality assurance team. | Validation of software is carried out by the testing team. |
| It is done without execution of code. | It is done with execution of code. |

**• Explain types of Performance testing.**

There are 6 types of performance testing.

1. Load testing
2. Stress testing
3. Endurance testing
4. Spike testing
5. Volume testing
6. Scalability testing
7. ***Load testing:***

* In load testing the testing is performed to check the system under load.
* This helps to determine how the application behaves when multiple users access simultaneously.

1. *volume testing:*

* It is used to check that the software can handle and process a large amount of data at once without breaking , slowing down , or losing any infromation.

1. ***Stability testing:***

* It is used to check the performance of an apllication by applying the load for a particular duration of time.

1. ***Spike testing:***

* Spike testing is done to see how the system responds to unexpected rise and fall of the user load.
* The goal of spike testing is done to determine the recovery time between two sucessive spikes of user load, the system needs some time to stablilize.
* This recovery time should be as low as possible.

1. ***Endurance testing:***

* It is a type of testing where a software is tested with high load extended over a significant amount of time to evaluate the behavior of software application under sustained use.
* It is performed at the last stage of the performance run cycle.
* It is long process and sometimes lasts for even upto a year.

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

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

**Defect:** error found by tester is known as defect

**Bug:** defect accepted by development team then it is called bug

**Failure:** when build does not meet the requirements then it is called failure.

**• Difference between Priority and Severity :**

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| ***priority*** | ***severity*** |
| Priority defines the order in which a defect should resolve. | It is the degree of impact that a defect has on the operation of the product.ss |
| It means how fast defect has to be fixed. | It means how severe defect is affecting the functionality. |
| Product manager decides the priorites of defects. | Testing engineer decides the severity level of defect. |
| Its value changes from time to time. | Its value doesn’t change from time to time. |

**• What is Bug Life Cycle?**

It is the duration or time span between the first time defect is found and the time that is closed successfully , rejected,postponed or deferred .

**• Explain the difference between Functional and Non functional Testing:**

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| **Functional Testing** | **Non – functional Testing** |
| It **i**s performed using the functions specification provided by client and verifies the system against the functional requirements. | This testing is performed to check the performance, reliability, scalability and other nonfunctional aspects of the software system. |
| It verifies the operations and actions of an application. | It is based on expectations of customer. |
| It is based on requirement of customer. | It is based on expectation of customer. |
| It tests what the products does. | It describes how product does. |
| It is based on the business requirements. | It is based on the performance requirements. |
| It is executed first. | It should be performed after functional testing. |
| Business requirements are the inputs to functional testing. | Performance parameters like speed, scalability are inputs to non-functinal testing. |
| In functional testing manual testing easy to do. | In Non functional testing manual testing is tough to do. |
| Examples:  - Unit Testing  - smoke testing  - sanity testing  - Regression testing  - white box testing  - black box testing | Examples:  - performance testing  - volume testing  - security testing  - compatibilty testing  - GUI testing  - penetration testing |

* **To create HLR & TestCase of :**

1. **Instagram only first page :**

* https://github.com/rushika-tops/SoftwareTesting.git

**2) Facebook Login Page : <https://www.facebook.com/>**

* <https://github.com/rushika-tops/SoftwareTesting.git>
* **To create HLR & TestCase of WebBased (WhatsApp web ):**

1. WhatsApp Web : <https://web.whatsapp.com/>:

* https://github.com/rushika-tops/SoftwareTesting.git
* **To create HLR and TestCase on this Link. https://artoftesting.com/**
* https://github.com/rushika-tops/SoftwareTesting.git