**Assignment No: - 2 Module: -2(Manual Testing)**

**Q) What is 7 key principles? Explain in detail?**

**Ans: - 1) Testing shows presence of defects: -** Testing can show that defects are presents but cannot prove that there are no defects.

**2) Exhaustive testing is impossible: -** exhaustive testing is So, instead of doing the exhaustive testing we can use risks and priority to focus testing effort.

**3) Early testing: -** early testing activities should start as early as possible in the development life cycle.

**4) Defects cluster: -** most defects found during testing are usually confined to small number of modules.

**5) pesticide paradox: -** if the same test is repeated over and over again eventually the same set of test cases will no longer find any new defect.

**6) Testing is context dependent: -** testing is basically context dependent and testing is done different in different context.

**7) Absence of errors is a fallacy: -** if the system built is unusable and does not fulfil the users need and expectation then finding and fixing defect does not help.

**Q) Difference between QA v/s QC v/s Tester?**

**Ans: -**

|  |  |  |
| --- | --- | --- |
| **Testing (Subset of QC)** | **QC (Quality Control)** | **QA (Quality Assurance)** |
| Focus on test execution | Focus on Product | Focus on Process |
| Done during development or after development | Done after the development | Done after the development |
| Actual testing | Find defect | Prevents defect |

**Q) Difference between verification and Validation?**

**Ans: -**

|  |  |
| --- | --- |
| **Verification** | **Validation** |
| Static testing (“Review” of document). | Dynamic Testing (“Live Testing” of actual Software). |
| Are you building the product right. | Are you building the right product. |
| Review, Walkthrough, Inspection | Testing |

**Q) What is Error, Defect, Bug and failure?**

**Ans: -** A mistake in coding is called an error, and error found by tester is called defect, and defect accepted by development team it is called bug, and build does not meet the requirement then it is failure.

**Q) What is the purpose of exit criteria?**

**Ans: - Exit** criteria in software testing defines the items that must be completed before testing can be concluded.

**Purpose: -**1) Ensure the testing is completeness.

2) Ensure All defect has been Fixed.

**Q) What is traceability matrix?**

**Ans: -** Test conditions should be able to be linked back to their sources in the test basis, this is known as traceability.

**Q) What is Exploratory Testing?**

**Ans: -** Exploratory testing is Test design, execution and logging happen simultaneously, Testing is often not recorded, Makes use of experience, heuristics and test pattern.

**Q) What is functional system testing?**

**Ans: -** Functional System Testing: - A requirement that specifies a function that a system or system component must perform.

**Q) What is Non-Functional Testing?**

**Ans: -** Non-Functional Testing: Testing the attributes of a component or system that do not relate to functionality, e.g. reliability, efficiency, usability, interoperability, maintainability and portability.

**Q) Explain the difference between Functional testing and Nonfunctional testing?**

**Ans: -**

|  |  |
| --- | --- |
| **Functional testing** | **Nonfunctional testing** |
| Functional testing is performed using the non-functional Specification provided by the client the verify the system against the functional requirement. | Testing checks the Performance, reliability, scalability and other non-functional aspects of the software system. |
| Functional testing is executed first. | Nonfunctional testing should be performed after functional testing. |
| Manual testing or automation tools can be used for functional testing | Using tools will be effective for this testing. |
| Business requirements are the inputs to functional testing. | Performance parameters like speed, scalability are inputs to non-functional testing. |
| Functional testing describes what the product does. | Nonfunctional testing describes how good the product works |
| Easy to do manual testing | Tough to do manual testing |

**Q) What is component testing?**

**Ans: -** Component (Unit) – A minimal software item that can be tested in isolation. It means “A unit is the smallest testable part of software.

**Q** **What is Integration testing?**

**Ans: -** Integration Testing - Testing performed to expose defects in the interfaces and in the interactions between integrated components or systems.

**Q** **Explain types of Performance testing.**

**Ans: - Load testing: –** checks the application’s ability to perform under anticipated user loads. The objective is to identify performance bottlenecks before the software application goes live.

**Stress testing: –** involves testing an application under extreme workloads to see how it handles high traffic or data processing. The objective is to identify the breaking point of an application.

**Endurance testing:** – is done to make sure the software can handle the expected load over a long period of time.

**Spike testing: –** tests the software’s reaction to sudden large spikes in the load generated by users.

**Volume testing: -** Under Volume Testing large no. of. Data is populated in a database, and the overall software system’s behaviour is monitored. The objective is to check software application’s performance under varying database volumes.

**Scalability testing: –** The objective of scalability testing is to determine the software application’s effectiveness in “scaling up” to support an increase in user load. It helps plan capacity addition to your software system.

**Q** **Mention what bigbang testing is?**

**Ans: -** In Big Bang integration testing all components or modules is integrated simultaneously, after which everything is tested as a whole. Big Bang testing has the advantage that everything is finished before integration testing starts.

**Q) When should "Regression Testing" be performed?**

**Ans: -** Change in requirements and code is modified according to the requirement new feature is added to the software Defect fixing Performance issue fix.

**Q) What is load testing?**

**Ans:** - Load testing - It’s a performance testing to check system behaviour under load. Testing an application under heavy loads, such as testing of a web site under a range of loads to determine at what point the system’s response time degrades or fails.

**Q) What is stress Testing?**

**Ans:** - 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.

**Q) What determines the level of risk?**

**Ans:** - A factor that could result in future negative consequences usually expressed as impact and likelihood.

Risks are two types: - 1) Project Risks

2) Product Risks

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

**Ans:** - Testing based on an analysis of the internal structure of the component or system. Structure-based testing technique is also known as ‘white-box’ or ‘glass-box’ testing technique.

**Q) What is black box testing? What are the different black box testing techniques?**

**Ans:** - Testing, either functional or non-functional, without reference to the internal structure of the component or system. Specification-based testing technique is also known as ‘black-box’ or input/output driven testing techniques because they view the software as a black-box with inputs and outputs.

**Q) Difference between Smoke and Sanity??**

**Ans: -**

|  |  |
| --- | --- |
| **Smoke** | **Sanity** |
| 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 the rigorous testing | The objective of the testing is to verify the "rationality" of the system in order proceed with more 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 like General Health Check Up | Sanity Testing is like specialized health check-up. |

**Q) What is Adhoc testing?**

**Ans: -** Adhoc testing is an informal testing type with an aim to break the system. It does not follow any test design techniques to create test cases.

**Q) What is GUI Testing?**

**Ans: -** 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.

**Q) What is Alpha testing?**

**Ans: -** It is always performed by the developers at the software development site. Sometimes it is also performed by Independent Testing Team.

**Q) What is beta testing?**

**Ans: -** It is always performed by the customers at their own site. It is not performed by Independent Testing Team. Beta Testing is always open to the market and public. It is usually conducted for software product.

**Q) What is Boundary value testing?**

**Ans: -** Boundary value analysis is a methodology for designing test cases that concentrates software testing effort on cases near the limits of valid ranges. Boundary value analysis is a method which refines equivalence partitioning.

**Q) What is Equivalence partitioning testing?**

**Ans: -** Aim is to treat groups of inputs as equivalent and to select one representative input to test them all. EP can be used for all Levels of Testing.

**Q) Difference between Priority and Severity?**

**Ans: -**

|  |  |
| --- | --- |
| **Priority** | **Severity** |
| Severity is absolute and Customer-Focused. | Priority is Relative and Business-Focused. |
| It is the extent to which the defect can affect the software. | Priority defines the order in which we should resolve a defect. |
| In other words, it defines the impact that a given defect has on the system. | This priority status is set by the tester to the developer mentioning the time frame to fix the defect. |
| Severity is divided into 4 categories:   * Critical * Major * Medium * Low | Priority is divided into 3 categories:   * Low * Medium * High |

**Q) Mention what are the categories of defects?**

**Ans: -** Data Quality/Database defect, Critical functionality defects, Functionality Defect, Security Defect, User interface defects.

**Q) What is Bug Life Cycle?**

**Ans: -** The duration or time span between the xfirst-time defects is found and the time that it is closed successfully, rejected, postponed or deferred is called as ‘Defect Life Cycle.