**ASSIGNMENT No.2**

**Question:** What is traceability matrix?

**Answer:** To protect against changes you should be able to trace back from every system component to the original requirement that caused its presence.

**Question:** What is Error, Defect, Bug and Failure?

**Answer:** A mistake in coding is called error, error found by tester is called defect, defect accepted by development team then it is called bug, build does not meet the requirements then it is failure.

**Question:** Difference between QA v/s QC v/s Tester?

**Answer:**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.NO.** | **Quality Assurance** | **Quality Control** | **Testing** |
| 1 | QA is subset of STLC. | QC is subset of QA. | Testing is subset of QC. |
| 2 | Preventive activity. | Corrective process. | Preventive process. |
| 3 | Process oriented activities. | Product oriented activities | Product oriented activities |

**Question:** What is Exploratory Testing?

**Answer:** Exploratory testing is a concurrent process where test design, execution and logging happen simultaneously. Testing is often not recorded.

**Question:** What is Boundary value testing?

**Answer:** 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.

**Question:** What is Equivalence partitioning testing?

**Answer:** Equivalence partitioning is the process of defining the optimum number of tests by

reviewing documents such as the Functional Design Specification and Detailed Design Specification, and identifying each input condition within a function.

**Question:** What is Integration testing?

**Answer**: Integration Testing is a level of the software testing process where individual units are combined and tested as a group.

**Question:** What determines the level of risk?

**Answer**: ‘A factor that could result in future negative consequences; usually expressed as impact and likelihood’.

**Question:** What is Alpha testing?

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

**Question:** What is beta testing?

**Answer**: 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.

**Question:** What is component testing?

**Answer**: A minimal software item that can be tested in isolation. It means “A unit is the smallest testable part of software.”

**Question:** What is functional system testing?

**Answer:** A requirement that specifies a function that a system or system component must perform.

**Question**: What is Non-Functional Testing?

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

**Question**: What is GUI Testing?

**Answer**: 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.

**Question**: What is Adhoc testing?

**Answer**: Ad hoc testing is an informal testing type with an aim to break the system.

**Question**: What is load testing?

**Answer**: It’s a performance testing to check system behavior 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.

**Question**: What is stress Testing?

**Answer**: 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.

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

**Answer**: Testing based on an analysis of the internal structure of the component or system.

Types of White box testing:

* Unit testing
* Integration testing

**Question**: What is black box testing? What are the different black box testing techniques?

**Answer**: Testing, either functional or non-functional, without reference to the internal structure of the component or system.

Techniques:

* Equivalence partitioning
* Boundary value analysis
* Decision tables
* State transition testing

**Question**: Mention what are the categories of defects?

**Answer**:

* deviation from standards,
* missing requirements,
* design defects,
* non-maintainable code,
* Inconsistent interface specifications.

**Question**: Mention what big bang testing is?

**Answer**: 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.

**Question**: What is the purpose of exit criteria?

**Answer**: Purpose of exit criteria is to define when we STOP testing either at the:

* End of all testing – i.e. product Go Live
* End of phase of testing (e.g. hand over from System Test to UAT)

**Question**: When should "Regression Testing" be performed?

**Answer**: Testing of a previously tested program following modification to ensure that defects have not been introduced or uncovered in unchanged areas of the software, as a result of the changes made. It is performed when the software or its environment is changed.

**Question**: What is 7 key principles? Explain in detail?

**Answer:**

* Testing shows presence of Defects
* Exhaustive Testing is Impossible.
* Early Testing.
* Defect Clustering.
* The Pesticide Paradox.
* Testing is Context Dependent.
* Absence of Errors Fallacy.

**Testing shows presence of Defects**: Testing can show that defects are present, but cannot prove that there are no defects. Testing reduces the probability of undiscovered defects remaining in the software but, even if no defects are found, it is not a proof of correctness.

We test to find Faults

**Exhaustive Testing is Impossible:** Testing everything including all combinations of inputs and preconditions is not possible. So, instead of doing the exhaustive testing we can use risks and priorities to focus testing efforts.

**Early Testing. :** Testing activities should start as early as possible in the software or system development life cycle, and should be focused on defined objectives.

Testing activities should start as early as possible in the development life cycle.

**Defect Clustering:** A small number of modules contain most of the defects discovered during pre- release testing, or are responsible for the most operational failures. Defects are not evenly spread in a system they are ‘clustered .In other words, most defects found during testing are usually Confined to a small number of modules similarly, most operational failures of a system are usually confined.

To a small number of modules

**The Pesticide Paradox:** If the same tests are repeated overland over 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 regularly reviewed and revised, and new and different tests need to be written to exercise different parts of the software or system to potentially find more defects.

**Testing is Context Dependent:** Testing is basically context dependent. Testing is done differently in different contexts. Different kinds of sites are tested differently.

**Absence of Errors Fallacy**: If the system built is unusable and does not fulfill the user’s needs and expectations then finding and fixing defects does not help. If we build a system and, in doing so, find and fix defects. It doesn’t make it a good system.

**Question**: Difference between Smoke and Sanity?

**Answer:**

|  |  |  |
| --- | --- | --- |
| No. | Smoke Testing | Sanity Testing |
| 1 | Smoke Testing is performed after software build 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. |
| 2 | Smoke testing is done on initial builds | Sanity testing is done on relatively stable builds. |
| 3 | Smoke testing is done as a part of basic testing | Sanity testing is done as a part of regression testing |
| 4 | Testing is performed by developers or testers | Testing is performed by testers |
| 5 | It is usually documented or scripted | It is usually not documented or not scripted |
| 6 | It is subset of regression testing | It is subset of acceptance testing |
| 7 | It is general health check up | It is specialized health check up |

**Question**: Difference between verification and Validation.

**Answer:**

|  |  |  |
| --- | --- | --- |
| NO. | Verification | Validation |
| 1 | It is static testing | It is dynamic testing |
| 2 | It is development level | It is testing level |
| 3 | Verification is the before coding | Validation is the after coding |

**Question:** Explain types of Performance testing.

**Answer:**

* Load testing
* Stress testing
* Endurance testing
* Spike testing
* Volume testing
* Scalability testing

**Load Testing:** It’s a performance testing to check system behavior 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.

**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.

**Question:** Difference between Priority and Severity

**Answer:**

|  |  |  |
| --- | --- | --- |
| No. | Priority | Severity |
| 1 | Priority is relative and business focused | Severity is absolute and customer focused |
| 2 | Defect priority is defined the order in which the developer should resolve a defect | Defect severity is defined the degree of impact that a defect has on the operation of the product |
| 3 | Priority is associated with scheduling | Severity is associated with functionality and standard |
| 4 | Priority is driven by business value | Severity is driven by functionality |
| 5 | Types  1.Low  2.Medium  3.High  4.Critical | Types  1.low  2.Medium  3.High  4.Critical  5.Cosmetic |

**Question:** What is Bug Life Cycle?

**Answer:** “A computer bug is an error, flaw, mistake, failure, or fault in a computer program that prevents it from working correctly or produces an incorrect result. Bugs arise from mistakes and errors, made by people, in either a program’s source code or its design.”

**Question**: Explain the difference between Functional testing and Nonfunctional testing?

**Answer:**

|  |  |  |
| --- | --- | --- |
| No. | Functional | Non Functional |
| 1 | Functional testing is executed first | Nonfunctional testing should be performed after functional testing |
| 2 | Easy to do manual testing | Tough to do manual testing |
| 3 | Business requirements are the inputs | Performance parameters like speed, scalability are input |
| 4 | Types  1.Unit testing  2.Integration testing  3.Smoke testing  4.Sanity testing  5.White box  6.Black box | Types  1.Performance testing  2.Load testing  3.Stress testing  4.Security testing  5.volume testing  6.Migration |

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

**Answer:**

|  |  |  |
| --- | --- | --- |
| No. | SDLC | STLC |
| 1 | SDLC is a structure imposed on the development of a software product that defines the process for planning, implementation, testing, documentation, deployment, and ongoing maintenance and support. | A process used to test software and ensure that quality standards are meet. |
| 2 | SDLC phases   1. Requirement gathering. 2. Analysis 3. Design 4. Implementation. 5. Testing 6. Maintenance | STLC phases   1. Requirement Analysis 2. Test planning 3. Test case development 4. Test Environment setup 5. Test Execution 6. Test cycle closer |

**Question**: Explain what Test Plan is? What is the information that should be covered?

**Answer:** A document describing the scope, approach, resources and schedule

Of intended test activities.

Determining the scope and risks, and identifying the objectives of testing.

Defining the overall approach of testing (the test strategy), including the definition of the test levels and entry and exit criteria.

**Question**: What is priority?

**Answer**: Priority is Relative and Business-Focused. Priority defines the order in which we should resolve a defect.

**Question:** What is severity?

**Answer**: Severity is absolute and Customer-Focused. It is the extent to which the defect can affect the software. In other words it defines the impact that a given defect has on the system.

**Question**: Bug categories are…

**Answer**: Security, Database, Functionality (Critical/General), UI

**Question**: Advantage of Bugzilla.

**Answer**:

* Advanced search capabilities
* E-mail Notifications
* Modify/file Bugs by e-mail
* Time tracking
* Strong security
* Customization Localization

**Question**: What are the different Methodologies in Agile Development Model?

**Answer**: There are 2 main Agile methodologies.

1. Scrum
2. Kanban

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

**Answer**:

|  |  |  |
| --- | --- | --- |
| No. | Authentication | Authorization |
| 1 | Authentication verifies who the user is. | Authorization determines what resources a user can access. |
| 2 | It is the first step of a good identity and access management process. | It is always takes place after authentication. |
| 3 | It is visible to and partially changeable by the user. | It is not visible to and partially changeable by the user. |

**Question**: When to used Usability Testing?

**Answer**: