**Module 2**

* What is Exploratory Testing?

Exploratory testing is a concurrent process where Test design, execution and logging happen simultaneously.

* What is traceability matrix?

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

* What is Boundary value testing?

Boundary value analysis is a methodology for designing test cases that concentrates software testing effort on cases near the limits of valid ranges.

* What is Equivalence partitioning testing?

Its aim is to treat groups of inputs as equivalent and to select one representative input to test them all and it can be used for all levels of testing.

* What is Integration testing?

Integration testing is associated with the architectural design phase. Integration tests are performed to test the coexistence and communication of the internal modules within the system.

* What determines the level of risk?

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

* What is Alpha testing?

It is always performed by the developers at the software development site. Alpha Testing is not open to the market and public.

* What is beta testing?

It is always performed by the customers at their own site. Beta Testing is always open to the market and public.

• What is component testing?

Component testing is the testing of individual software components. Unit Testing is a level of the software testing process where individual units/components of a software/system

tested. The purpose is to validate that each unit of the software performs as designed.

* What is functional system testing?

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

There is two types of Test Approach

Requirement Based Functional Testing

Process Based Testing

* What is 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,

* What is GUI Testing?

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.

* What is Adhoc testing?

Adhoc testing is an informal testing type with an aim to break the system . This testing is primarily performed if the knowledge of testers in the system under test is very high.

* What is load testing?

Load testing is a kind of performance testing which determines a system’s performance under real-life load conditions. This testing helps determine how the application behaves when multiple users access it simultaneously

* What is 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.

Stress Testing is done to make sure that the system would not crash under crunch situations.

Types of Stress Testing

Application Stress Testing:

Transactional Stress Testing:

Systemic Stress Testing:

Exploratory Stress Testing:

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

White box testing based on an analysis of the internal structure of the component or system.

Web based Testing

Desktop based Testing

Mobile based Testing

Game based Testing

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

The technique of testing without having any knowledge of the interior workings of the application is Black Box testing.

Techniques of Black Box Testing

Equivalence partitioning

Boundary value analysis

Decision tables

State transition testing

Use-case Testing

Other Black Box Testing

Syntax or Pattern Testing

* Mention what are the categories of defects?

Data Quality/Database Defects: Deals with improper handling of data in the database.

Critical Functionality Defects: The occurrence of these bugs hampers the crucial functionality of the application. Examples: - Exceptions

Functionality Defects: These defects affect the functionality of the application

Security Defects: Application security defects generally involve improper handling of data sent from the user to the application. These defects are the most severe and given highest priority for a fix.

User Interface Defects: As the name suggests, the bugs deal with problems related to UI are usually considered less severe.

* Mention what bigbang testing is?

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.

* What is the purpose of exit criteria?

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 .

* When should "Regression Testing" be performed?

when the system is stable and the system or the environment changes

when testing bug-fix releases as part of the maintenance phase

It should be applied at all Test Levels

It should be considered complete when agreed completion criteria for regression testing have been met

Regression test suites evolve over time and given that they are run frequently are ideal candidates for auto

* What is 7 key principles? Explain in detail?

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.

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 :

It should start right from beginning in SDLC.

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

The Pesticide Paradox :

If the same tests are repeated over and over again, eventually the same

set of test cases will no longer find any new defects.

Testing is Context Dependent :

Testing is basically context dependent.

Testing is done differently in different contexts

Different kinds of sites are tested differently.

For example

Safety – critical software is tested differently from an

e-commerce site.

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.

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

|  |  |  |
| --- | --- | --- |
| QA | QC | TESTER |
| Activities which ensure the implementation of processes, procedures and standards in context to verification of developed software and intended requirements. | Activities which ensure the verification of developed software with respect to documented (or not in some cases) requirements. | Activities which ensure the identification of bugs/error/defects in the Software. |
| Focuses on processes and procedures rather than conducting actual testing on the system. | Focuses on actual testing by executing Software with intend to identify bug/defect through implementation of procedures and process. | Focuses on actual testing |
| Process oriented activities | Product oriented activities. | Product oriented activities. |
| Preventive activities. | It is a corrective process | It is a preventive process |
| It is a subset of Software Test Life Cycle (STLC). | QC can be considered as the subset of Quality Assurance | Testing is the subset of Quality Control. |

* Difference between Smoke and Sanity?

|  |  |
| --- | --- |
| 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 rigorous testing | The objective of the testing is to verify the rationality" of the system in order 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 is unscripted |
| Smoke testing is a subset of Regression testing | Sanity testing is a subset of Acceptance testing |
| Smoke testing exercises the entire system from end to end | Sanity testing exercises only the particular component of the entire system |

* Difference between verification and Validation

|  |  |
| --- | --- |
| Verification | Validation |
| The process of evaluating work-products (not the actual final product) of a development phase to determine whether they meet the specified requirements for that phase | The process of evaluating software during or at the end of the development process to determine whether it satisfies specified business requirements. |
| To ensure that the product is being built according to the requirements and design specifications. In other words, to ensure that work products meet their specified requirements. | To ensure that the product actually meets the user’s needs, and that the specifications were correct in the first place. In other words, to demonstrate that the product fulfills its intended use |
| Are we building the product right? | Are we building the right product? |
| Plans, Requirement Specs, Design Specs, Code, Test Cases | The actual product/software |
| Reviews ∙ Walkthroughs ∙ Inspections | ∙ Testing |

* Explain types of Performance testing.

Load testing

Stress testing

Endurance testing

Spike testing

Volume testing

Scalability testing

* What is Error, Defect, Bug and failure?

Error - An incorrect step, process, or data definition in a computer program which causes the program to perform in an unintended or unanticipated manner.

Defect - Commonly refers to several troubles with the software products, with its external behavior or with its internal features.

Bug - A fault in a program which causes the program to perform in an unintended or unanticipated manner

Failure - The inability of a system or component to perform its required functions within specified performance requirements. See: bug, crash, exception, and fault.

* What is Bug Life Cycle?

The duration or time span between the first time defects is found and the time that it is closed successfully, rejected, postponed or deferred is called as ‘Bug Life Cycle’

* Explain the difference between Functional testing and Non Functional testing

|  |  |
| --- | --- |
| Functional testing | Non Functional testing |
| Functional testing is performed using the functional specification provided by the client and verifies the system against the functional requirements. | Non-Functional testingchecksthe Performance, reliability, scalability and other non-functional aspects of the software system. |
| Functional testing is executed first | Non functional testing should be performed after functional testing |
| Business requirements are the inputs to functional testing | Performance parameters like speed , scalability are inputs to non-functional testing |
| Manual testing or automation tools can be used for functional testing | Using tools will be effective for this 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 |

* Difference between Priority and Severity.

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.

Priority is Relative and Business-Focused. Priority defines the order in which we should resolve a defect. Should we fix it now, or can it wait? This priority status is set by the tester to the developer mentioning the time frame to fix the defect. If high priority is mentioned then the developer has to fix it at the earliest. The priority status is set based on the customer requirements.

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

SDLC :- 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. There are a number of different development models.

Phases of SDLC

1. Requirements Collection/Gathering
2. Analysis
3. Design
4. Implementation
5. Testing
6. Maintenance

STLC :- Software testing life cycle.

Phases of STLC

1. Requirement Analysis

2. Test Planning

3. Test case development

4. Test Environment setup

5. Test Execution 6. Test Cycle closure

* What is priority?

Priority defines the order in which we should resolve a defect. Should we fix it now, or can it wait? This priority status is set by the tester to the developer mentioning the time frame to fix the defect. If high priority is mentioned then the developer has to fix it at the earliest. The priority status is set based on the customer requirements.

* What is severity?

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.

* Bug categories are…

Data Quality/Database Defects: Deals with improper handling of data in the database.

Critical Functionality Defects: The occurrence of these bugs hampers the crucial functionality of the application. Examples: - Exceptions

Functionality Defects: These defects affect the functionality of the application

Security Defects: Application security defects generally involve improper handling of data sent from the user to the application. These defects are the most severe and given highest priority for a fix.

User Interface Defects: As the name suggests, the bugs deal with problems related to UI are usually considered less severe.

* Advantage of Bugzila .

Bugzilla is an open-source issue/bug tracking system that allows developers effectively to keep track of outstanding problems with their product. It is written in Perl and uses MYSQL database. Bugzilla is a defect tracking tool, however it can be used as a test management tool as such it can be easily linked with other test case management tools like Quality Center, Testlink etc. This open bug-tracker enables users to stay connected with their clients or employees, to communicate about problems effectively throughout the datamanagement chain. Key features of Bugzilla includes Advanced search capabilities E-mail Notifications Modify/file Bugs by e-mail Time tracking Strong security Customization Localization

* What are the different Methodologies in Agile Development Model?

Agile is based on the iterative-incremental model. In an incremental model, we create the system in increments, where each increment is developed and tested individually.

Scrum

Kanban

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

Authentication verifies the identity of a user or service, and authorization determines their access rights.

Below are the common problems faced in Web testing.

* Integration.
* Interoperability. ...
* Security. ...
* Performance. ...
* Usability. ...
* Quality Testing,
* What is the difference between test scenarios, test cases, and test script?

Test Scenarios - A Scenario is any functionality that can be tested. It is also called Test Condition, or Test Possibility.

Test Scenario is ‘What to be tested’

Test scenario is nothing but test procedure

Test Cases - Test cases involve the set of steps, conditions and inputs which can be used while performing the testing tasks.

Test Case is ‘How to be tested’

Test Script - A test script in software testing is a set of instructions that will be performed on the system under test to test that the system functions as expected.

Manual Testing

Automation Testing

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

All projects require a set of plans and strategies which define how the testing will be conducted.

Information such as scope, approach,

resources and schedule of intended test activities , templates of test documents.

* When to used Usablity Testing?

Usability testing used when system early in development cycle and can save a product from failure.

* What is the procedure for GUI Testing?

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.

Check all the GUI elements for size, position, width, length and acceptance of characters or numbers. For instance, you must be able to provide inputs to the input fields.

* Check you can execute the intended functionality of the application using the GUI
* Check Error Messages are displayed correctly
* Check for Clear demarcation of different sections on screen
* Check Font used in application is readable
* Check the alignment of the text is proper
* Check the Color of the font and warning messages is aesthetically pleasing
* Check that the images have good clarity
* Check that the images are properly aligned
* Check the positioning of GUI elements for different screen resolution