# 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?

Aim is to treat groups of inputs as equivalent and to select one representative input to test the mall EP can be used for all Levels of Testing

# What is Integration testing?

Testing performed to expose defect in the Interfaces and in the interaction between integrated components or system.

# What is Alpha testing?

Alpha Testing is definitely performed and carried out at the developing organization’s location with the involvement of developers.

# What is beta testing?

Beta Testing is always performed at the time when software product and project are marketed.

# What is component testing?

# A minimal software Item that can be tested in isolation. It Means “A unit is smallest testable part of Software”.

# What is functional system testing

Testing based on analysis of specification of functionality of a component or system

# What is Non-Functional Testing?

Testing the attributes of a component or system that do not relate to functionality .eg,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?

Ad hoc testing is an informal testing type with an aim to break the system

# What is load testing?

Its a performance testing to check system behavior under load. Testing an application under heavy loads, such as testing of a web site under arrange of loads to determine at what point the system’s response time degrades or fails.

# What is stress Testing?

System is stressed beyond its specifications to checkhow and when it fails. Performed under heavy load like putting largenumber beyond storage capacity, complex database queries, continuous input to system or database load.

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

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

Structure-based testing technique is also known as ‘whitebox’ or ‘glass-box’ testing technique because here the testers require knowledge of how the software is implemented, how it works

Types of White box testing

1) Statement coverage

2) Decision coverage

3) Condition coverage

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

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

Techniques of Black Box Testing

• Equivalence partitioning

• Boundary value analysis

• Decision tables

• State transition testing

# Mention what are the categories of defects?

1. Data Quality/Data base Defects
2. Critical Functionality Defects
3. Functionality Defects
4. Security Defects
5. User Interface Defects

# Mention what bigbang testing is?

# In Big Bang integration testing all components or modules is integrated simultaneously, after whicheverything istestedas a whole.

# 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?

1. Change in requirement sand code is modified according to the requirement
2. New feature is added to the software
3. Defect fixing
4. Performance issue fix

# What is 7 key principles? Explain in detail?

1. Testing shows the presence of defects.
2. Exhaustive testing is impossible.
3. Early testing.
4. Defect clustering.
5. Pesticide paradox.
6. Testing is context dependent.
7. Absence-of-errors fallacy.

* Testing shows the presence of defects.

Testing can show that defects are present, but cannot prove that there are no defect

If QA team reports zero defects after the testing cycle, it does not mean there are no bugs in the software. It means that there could be bugs, but your QA team did not find them.

However Testing can not prove that there are no defects present.

* Exhaustive testing is impossible

Exhaustive testing usually tests and verifies all functionality of a software application while using both valid and invalid inputs and pre-conditions.

So instead of doing the exhaustive testing we can use risk & 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.

* 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

Pesticides Paradox:

In software testing, the Pesticide Paradox generally refers to the practice of repeating the exact same test cases over and over again.

* 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 Even after defects have been resolved it may still be unusable and/or does not fulfill the users’ needs and expectations.

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

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| --- | --- |
| **QA** | **QC** |
| QA is nothing but Quality assurance ,which gives assurance towards quality | QC is nothing but quality control, which does not ensure quality ,it only exposes lack of quality |
| QA is process oriented | QC is product specific |
| QA is prevention of defects | QC is detection of defect |
| QA belongs to verification | QC belongs to validation |

# Difference between Smoke and Sanity?

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| --- | --- |
| **Smoke testing** | **Sanity Testing** |
| Smoke testing is performed to ascertain that the critical functionality 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 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 tester | Sanity testing is usually performed by testers |
| Smoke testing is usually documented or scripted | Sanity testing usually not documented & unscripted |
| Smoke testing is a subset of regression testing | It Is subset of Acceptance testing |
| 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 |
| The verifying process includes checking documents, design, code, and program | Validation process includes testing and validation of the actual product. |
| Verification does not involve code execution | Validation involves code execution |
| Whether the software conforms to specification is checked | It checks whether the software meets the requirements and expectations of a customer |
| Reviews Walkthroughs Inspections | Testing |

# Explain types of Performance testing.

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

# What is Error, Defect, Bug and failure?

* 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.

# Difference between Priority and Severity

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| --- | --- |
| **Priority** | **Severity** |
| Defect Priority has defined the order in which the developer should resolve a defect | Defect Severity is defined as the degree of impact that a defect has on the operation of the product |
| Priority is associated with scheduling | Severity is associated with functionality or standards |
| Priority indicates how soon the bug should be fixed | Severity indicates the seriousness of the defect on the product functionality |
| Priority is driven by business value | Severity is driven by functionality |
| Priority is categorized into three types   * Low * Medium * High | Severity is categorized into five types   * Critical * Major * Moderate * Minor * Cosmetic |

# What is Bug Life Cycle?

“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.”

# Explain the difference between Functional testing and NonFunctional testing

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| Functional testing | Non Functional testing |
| Functional testing is executed first | Non functional testing should be performed after functional testing |
| Manual testing and 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 nonfunctional testing |
| Functional testing describes what the product does | Non Functional testing describe How the product works |
| Easy to do Manual Testing | Tough to do Manual testing |
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# • What is the difference between the STLC (Software Testing Life Cycle) and SDLC (Software Development Life Cycle)

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| **SDLC** | **STLC** |
| SDLC is mainly related to software development. | STLC is mainly related to software testing. |
| Besides development other phases like testing is also included. | It focuses only on testing the software. |
| It helps in developing good quality software. | It helps in making the software defects free |
| SDLC phases are completed before the STLC phases. | STLC phases are performed after SDLC phases. |

# • What is the difference between test scenarios, test cases, and test script

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| --- | --- | --- |
| **Test scenarios** | **Test cases** | **Test script** |
| Is any functionality that can be tested | Is set of actions executed to verify particular features or functionality | Is set of instruction to test an app automatically |
| Is more focused on what to test | Is more focused on what to test & how to test | Is focused on expected result |
| Takes less time & fewer resources to create | Require more resources & time | Require less time for testing but more resources for script creating & updating |
| Includes an end to end functionality to be tested | Include test steps, data expected results for testing | Includes different commands to develop a script |

# • What is priority?

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 issue 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 issue 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…

Bug Category: Security, Database, Functionality (Critical/General), UI

# • Advantage of Bugzila

• Advanced search capabilities

• E-mail Notifications

• Modify/file Bugs by e-mail

• Time tracking

• Strong security

• Customization Localization

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# • Difference between priority and severity

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| --- | --- |
| **Priority** | **Severity** |
| Defined by the impact of a specific problem on any application’s functionality. | Defined by the impact on business. |
| Category decided by testers. | Category decided by developers or product owners. |
| Deals with the technical aspects of the application. | Deals with the timeframe or order to fix the defects. |
| The value does not change with time, it’s fixed. | The priority value is subjective and may change after comparing with other defects. |

# • What are the different Methodologies in Agile Development Model?

**The most common Agile Methodologies are as follows**

1. **Scrum**
2. **Kanban**

1.**Scrum**: SCRUM is an agile development method which concentrates particularly on how to manage tasks within a team based development environment.

It consists of three roles and their responsibilities are explained as follows:

• Scrum Master

• Product owner

• Scrum Team

2.**Kanban:** Kanban is a very popular framework for development in the agile software development methodology. Kanban can be used in any domain, and it can be used very effectively in software development

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

### 1. Authentication:

Authentication refers to the process of verifying the identity of a user, system, or application. It answers the question: "Who are you?" and ensures that the user or system attempting to access a particular resource is indeed the entity it claims to be.

**Common methods of authentication include:**

* **Username and Password:** A user provides a username (or email) and a password that should match the stored credentials in the system.
* **Multi-factor Authentication (MFA):** Requires two or more verification methods before granting access (e.g., something you know like a password, something you have like a mobile device, or something you are like a fingerprint).
* **Token-based Authentication:** Involves the use of tokens, often after an initial authentication. These tokens can be short-lived and provide a way for a user to access resources without re-entering credentials.
* **Certificate-based Authentication:** Uses digital certificates to authenticate a user, system, or application.

### 2. Authorization:

Authorization, on the other hand, is the process of determining whether an authenticated user or system has the necessary permissions to access a specific resource or perform a particular action. It answers the question: "What are you allowed to do?"

**For instance:**

* After logging into an application (Authentication), a user might be authorized to view certain pages but not modify them.

### Common Problems Faced in Web Testing:

1. **Broken Links and Navigation:** Links that don't work or pages that don't redirect correctly can hinder user experience.
2. **Cross-Site Scripting (XSS):** Vulnerabilities where attackers can inject malicious scripts into web pages viewed by other users.
3. **SQL Injection:** Attackers exploit vulnerabilities to execute malicious SQL code on a web application's backend database.
4. **Session Management Issues:** Problems like session fixation, session hijacking, or insecure session storage can compromise user sessions.
5. **Weak Authentication and Authorization:** Poorly implemented or weak authentication and authorization mechanisms can lead to unauthorized access to sensitive data or functionalities.
6. **Insecure Direct Object References:** When developers expose internal implementation objects, allowing attackers to manipulate references to obtain unauthorized access.
7. **Sensitive Data Exposure:** Storing or transmitting sensitive data (like passwords or personal information) in an insecure manner.
8. **Inadequate Error Handling and Logging:** Revealing too much information in error messages can provide attackers with valuable insights into system vulnerabilities.
9. **Insecure Configuration:** Default configurations or misconfigured settings can introduce security vulnerabilities.
10. **Inadequate Input Validation:** Failing to validate user inputs properly can lead to various vulnerabilities, including XSS, SQL injection, and others.

**• To create HLR & TestCase of**

**1)(Instagram , Facebook) only first page**

* Please refer Assignment worksheet module 2 –[HLR\_Insta & FB sheet & Test case\_Insta & FB sheet]

**2)Facebook Login Page :**

Please refer Assignment worksheet module 2 –[FB Login Page sheet]

* **To create HLR & TestCase of WebBased (WhatsApp web , Instagram)**

Please refer Assignment worksheet module 2 –[Whatsapp web,instagram web]

* **To create HLR and TestCase on** **this Link**

Please refer Assignment worksheet module 2 –[Art of testing sheet]

* **Write a scenario of only Whatsapp** **chat messages**

Please refer Assignment worksheet module 2 –[Whatsapp chat]

* **Write a Scenario of Pen**

Please refer Assignment worksheet module 2 –[Art of testing sheet]

* **Write a Scenario of Door**

Please refer Assignment worksheet module 2 –[Door sheet]

* **Write a Scenario of ATM**

Please refer Assignment worksheet module 2 –[ATM sheet]

• **When to used Usablity Testing?**

Usability Testing identifies usability errors in the development cycle and can save a product from failure

• **What is the procedure for GUI Testing?**

* Build the model
* Determine Inputsforthe model
* Calculateexpected output for the model
* Run theTests
* Compare the actual output with the expectedoutput
* Decision on further action on the model
* Someof the modeling techniquesfrom which test cases can be derived:
* Charts – Depictsthe stateof asystem and checks the state after some input.
* Decision Tables – Tables used todetermine results for each inputapplied
* Model based Testing is an evolving technique forthegenerating the testcases fromthe requirements.
* Its main advantage, compared toabove two methods, is that it candetermine undesirable states thatyour GUI canattain.

• **Write a scenario of Microwave Owen**

Please refer Assignment worksheet module 2 –[Microwave owen]

**• Write a scenario of Coffee vending Machine**

Please refer Assignment worksheet module 2 –[coffee vending machine]

**Write a scenario of chair**

Please refer Assignment worksheet module 2 –[Chair ]

**• To Create Scenario (Positive & Negative)**

**1)facebook Chat on Mobile**

Please refer Assignment worksheet module 2 –[FB chat Mobile ]

**2)Gmail(Receiving mail)**

Please refer Assignment worksheet module 2 –[Gmail(receiving mail) ]

**3) Online shopping to buy product (flipkart)**

Please refer Assignment worksheet module 2 –[Flipkart]

**• Write a Scenario of Wrist Watch**

Please refer Assignment worksheet module 2 –[Wrist watch]

**• Write a Scenario of Lift(Elevator)**

Please refer Assignment worksheet module 2 –[Lift]

**• Write a Scenario of whatsapp Group (generate group)**

Please refer Assignment worksheet module 2 –[Whatsapp group(generate Group)]

* **Write a Scenario of instagram ( video call with chat)**

Please refer Assignment worksheet module 2 –[instagram ( video call with chat)]

**• Write a Scenario of Whatsapp payment**

Please refer Assignment worksheet module 2 –[Whatsapp payment]