**ASSIGNMENT**

**MODULE – 2 (MANUAL TESTING)**

**1-> What Is Exploratory Testing ?**

**A-> Exploratory Testing:** Black box testing technique performed without planning and documentation. It is usually performed by manual testers.

**2-> What is Boundary value testing?**

**A->**  **Boundary Value Testing:** Software testing technique in which tests are designed to include representatives of boundary values. It is performed by the QA testing teams.

**3-> What is Equivalence partitioning testing?**

**A->** Equivalence Partitioning Testing: Software testing technique that divides the input data of a software unit into partitions of data from which test cases can be derived. it is usually performed by the QA teams.

**4-> What Is Integration Testing ?**

A-> Integration Testing is defined as a type of testing where software modules are integrated logically and tested as a group. is performed after Unit Testing and before System Testing.

There is two types methods of Integration Testing:

1) Bing Bang Integration Testing

2) Incremental Integration Testing

\* Top Down Approach

\* Bottom Up Approach

**5-> What Is Functional System Testing?**

**A-> Functional Testing:** Testing based on an analysis of the specification of the functionality of a component or system. This testing mainly involves black box testing and it is not

concerned about the source code of the application.

**# Functional Testing #**

# Black Box Testing

# While Box Testing

# Experience Based Testing

# Smoke Testing

# Sanity Testing

# End to End Testing

**6-> What Is Non-Functional Testing?**

**A-> 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.

**Non - Functional Testing**

1. Usability Testing
2. Compatibility Testing
3. GUI Testing
4. Security Testing
5. Performance Testing
6. Stress Testing
7. Stress Testing

**7-> What Is GUI Testing ?**

A-> 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.

**# Approach of GUI Testing #**

1. MANUAL BASED TESTING
2. RECORD AND REPLAY
3. MODEL BASED TESTING

**8-> What Is Adhoc Testing ?**

A-> Adhoc testing is an informal testing type with an aim to break the system. The Error guessing is a technique where the experienced and good testers are encouraged to think of situations in which the software may not be able to cope.

**# Types of Adhoc Testing #**

1. Buddy Testing
2. Pair testing
3. Monkey Testing

**9-> What Is Load Testing ?**

A-> **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 a range of loads to determine at what point the system’s response time degrades or fails. **Need For Load Testing :-** An Airline website was not able to handle 10000+users during.

**# PROS #**

**1** Improves the scalability of the system

**2** Performance bottlenecks identification before production

**# CONS #**

**1** Need programming knowledge to use load testing tools.

**10-> What Is Stress Testing ?**

A-> **Stress testing** is to test the system behavior under extreme conditions and is carried out till the system failure. Stress testing is used to test the stability & reliability of the system. Stress testing is also known as endurance testing.

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

A-> **White Box Testing:** Testing based on an analysis of the internal structure of the component or system.

**# White Box Testing Examples #**

**\*Web Based Testing :** Analyze the logic by reading the code. **\*Desktop Based Testing :** When we debug the code when we writing. \***Mobile Based Testing :** The Android SDK and related plugin for Eclipse. **\*Game Based Testing :** When some debug the code and play at that time game.

**12-> What is black box testing? What are the different black box testing techniques?**

**A-> Black-box testing:** Testing, either functional or non-functional, without reference to the internal structure of the component or system.

**# Techniques of Black Box Testing #**

1 Equivalence partitioning

2 Equivalence partitioning

3 Decision tables

4 State transition testing

5 Use-case Testing

6 Other Black Box Testing

**13-> Difference between Smoke and Sanity?**

|  |  |
| --- | --- |
| 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. |
| 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 is like General Health Check up. | Sanity Testing is like specialized health check up. |

**14-> Difference between QA v/s QC v/s Tester ?**

|  |  |  |
| --- | --- | --- |
|  | **QC** | **QA** |
| Focus | Product quality at a given moment | Project Process |
| Character | Reactive (detects the issues when they’ re already in) | Preventive (blocks the issues by detecting vulnerabilities) |
| Starting Point | Requirement gathering stage present in each iteration | Project Planning stage (most efficient ) |
| Activity Type | Preventive | Corrective |
| Orientation | Process-oriented | Product-oriented |

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**16-> What is 7 key principles? Explain in detail?**

|  |
| --- |
| **General Testing Principles** |

**A->**

1. **Testing shows presence of 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.
2. **Exhaustive Testing is Impossible:-** Testingeverything including combinations of inputs and preconditions is not possible.
3. **Early Testing :-** Testing activities should start as early as possible in the development life cycle.
4. **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 **.**
5. **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.
6. **Testing is Context Depend:-** Testing is basically context dependent. Testing is done differently in different contexts Different kinds of sites are tested differently.
7. **Absence of Errors Fallacy:-** Even after defects have been resolved it may still be unusable and/or does not fulfil the users’ needs and expectations.

**17-> When should "Regression Testing" be performed ?**

**A-> Regression Testing:-** 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.

**18-> Mention what bigbang testing is ?**

**A->** Big Bang Integration Testing is an integration testing strategy wherein all units are linked at once, resulting in a complete system.

**Advantages:-**

Convenient for small systems.

**Disadvantages:-**

Fault Localization is difficult.

**19-> What is the purpose of exit criteria?**

**A->** “The specific conditions or on-going activities that should be fulfilled before completing the software testing life cycle."

\*Successful Testing of Integrated Application.

\*Executed Test Cases are documented.

\*All High prioritized bugs fixed and closed.

**20-> Mention what are the categories of defects?**

**A->** A software bug arises when the expected result Don’t match with the actual results. It can also be error,flaw,failure,or fault in a computer program. Most bugs arise from mistakes and erroes made arise developers architects.

**Common Types Of Defects:-**

**\***Arithmetic Defects

\*Logical Defects

\*Syntax Defects

\*Multithreading Defects

\*Interface Defects

\*Performance Defects

**21-> What is traceability matrix ?**

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

**Types of Traceability Matrix**

Forward Traceability – Mapping of Requirements to Test cases

Backward Traceability – Mapping of Test Cases to Requirements

**22-> What determines the level of risk ?**

A-> A properly designed test that passes, reduces the overall level of Risk in a system Risk – ‘A factor that could result in future negative consequences; usually expressed as impact and likelihood’

**Types of Risk :-**

**Risks are of two types :-** 1)Project Risks 2)Product Risk

**Types of Risk Examples :-**

* Example of Project risk is Senior Team Member leaving the project abruptly.
* Example of product risks would be Flight Reservation system not installing in test environment.

**23-> What is Alpha testing ?**

A-> It is always performed by the developers at the software development site It is always performed in **Virtual Environment** It comes under the category of both White Box Testing and Black Box Testing.

**24-> What is beta testing ? (Field Testing)**

A-> It is always performed by the customers at their own site It is performed in **Real Time** **Environment** Beta testing can be considered “**pre-release**” testing It is only a kind of Black Box Testing.

**25-> What is component testing ?**

A-> Component testing is a form of closed-box testing, meaning that the test evaluates the behavior of the program without considering the details of the underlying code Component(Unit) – A minimal software item that can be tested in isolation. It means **“A unit is the smallest testable part of software.”**

**26-> Explain types of Performance testing ?**

A-> Software performance testing is a means of quality assurance (QA). It involves testing software applications to ensure they will perform well under their expected workload.

**The focus of Performance testing is checking a software programs :-**

**Speed** – Determines whether the application responds quickly.

**Scalability** – Determines maximum user load the software application can handle.

**Stability** – Determines if the application is stable under varying loads.

**\* Types of Performance Testing :-**

Load testing

Stress testing

Endurance testing

Spike testing

Volume testing

Scalability testing

**Performance Problems :-**

**Long Load time –** Load time is normally the initial time it takes an application to start.

**Poor response time –** Again if a user has to wait too long, they lose interest.

**Poor scalability –** Load testing should be done to be certain the application can handle the anticipated number of users.

**Performance Testing Examples :-**

**Web Based Testing & Desktop Based Testing:**

\*Check the page load on slow connections.

\*Check the database query execution time.

\*Check the performance of database stored procedures and triggers.

**Mobile Based Testing :**

\*Check the database query execution time.

\*Check CPU and memory usage under peak load conditions.

**Game Based Testing :**

\*Determine whether the current infrastructure is sufficient for the smooth running of the game.

**27-> What is Error, Defect, Bug and failure ?**

A->

1. **Error** **:-** Any mistake in a program called error.

2. **Defect :-** Mistake found by tester during system testing called defect.

3. **Bug :-** Reported defect is accepted by developer to resolve called bug.

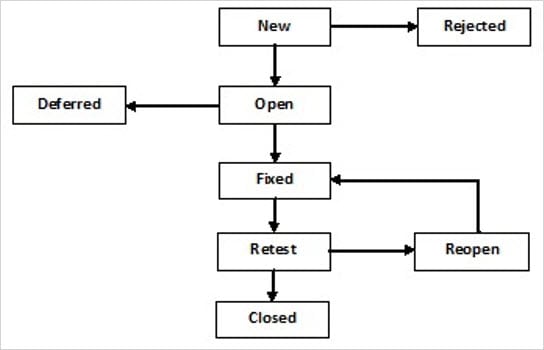
4. **Failure :-** Executing defect code, sometimes will produce wrong results causes failure.

**28-> Difference between Priority and Severity ?**

A->

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| --- | --- | --- |
| **No** | **Priority** | **Severity** |
| 1 | Defect priority has specified the order in which the developer should fix a defect. | Defect severity is specified as the degree of impact that a defect has on the operation of the  Product. |
| 2 | Priority means how soon the bug should be fixed. | Severity means the seriousness of the defect in the product functionality. |
| 3 | Priority of defect is decided in discussion with the manager /client. | The test engineer ``determines the severity level of the defect. |
| 4 | It is driven by business value. | It is driven by functionality. |
| 5 | Priority status is established on customer requirements. | Severity status is established on the technical aspect of the product. |

**29-> What is Bug Life Cycle ?**

A-> **Defect Life Cycle**or Bug Life Cycle in software testing is the specific set of states that defect or bug goes through in its entire life. **Defect Status** or Bug Status in defect life cycle is the present state from which the defect or a bug is currently undergoinThe purpose of Defect life cycle is to easily coordinate and communicate current status of defect which changes to various assignees and make the defect fixing process systematic and efficient.

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

A->

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| --- | --- | --- |
| **PHASE** | **SDLC** | **STLC** |
| Requirement analysis | Business analysis gathers the requirement and analysis from the architecture perspective | Qa lead analyze the requirement and identifies the scope of testing. |
| Design | Software application mock design or ui will be developed and presented to the stakeholders. | Test lead develops the test plan and strategy of testing. |
| Coding/dev | Development team starts developing the software by writing the code. | Testing team starts developing detailed test case or test scripts. |
| Testing | Testing the product –includes from unit testing to UAT. | Execution of test cases(actual testing of the product ) Bug, reporting , re-testing. |