

# Assignment 3:

## Based on Testing types and levels

### 1. Difference between Sanity and Smoke Testing?

Sanity Testing	Smoke Testing
Sanity test is done during the release phase to check for the main functionalities of the application without going deeper.	Smoke test is done to make sure the built we received from the development team is stable or not.
Sanity test is performed by the tester alone.	Smoke test is performed by both tester and developer.
Sanity Testing, built is relatively stable.	Smoke Testing, built maybe either stable or unstable.
It is done on stable built.	It is done on initial built.
It is the part of regression testing.	It is the part of basic testing.
It is planned when there is no enough time to do in-depth testing.	Usually, it is done every time when there is new built release.

### 2. What do you test in Functional Testing?

In Functional Testing, the focus is on verifying that the software behaves as expected according to the specified requirements and functions. Key areas tested include:

1. **Core Features and Functionalities:** Ensure each feature works as per requirements, providing correct outputs for expected inputs.
2. **User Interface (UI) Interactions:** Verify that all UI elements (e.g., buttons, forms) respond as expected and support smooth navigation.
3. **Input Validation and Data Handling:** Check that inputs are correctly validated, processed, and errors are handled effectively.
4. **Business Logic and Rules:** Confirm that the software enforces all specified business rules and logic consistently.
5. **Database Transactions:** Test interactions with the database to ensure data retrieval, insertion, updates, and deletions function properly.

### 3. What Is Mean by Equivalence Partitioning?

Equivalence Partitioning (EP) is a software testing technique used to reduce the number of test cases while ensuring coverage of input conditions. In this method, inputs are divided into **equivalence classes** or **partitions**. Each partition represents a group of

inputs that are expected to produce similar behavior or output from the system. Instead of testing each individual input, testers select a representative value from each partition to test.

#### 4. When to Do Smoke Testing?

Smoke Testing is typically done **early in the software testing lifecycle** and **after every new build or major update**. Here are key scenarios for performing Smoke Testing:

1. **After a New Build or Deployment:** Immediately after the software is built and deployed to the testing environment to ensure core functionality works before deeper testing.
2. **After Major Code Changes or Fixes:** Following significant code changes, bug fixes, or updates, to ensure they haven't broken essential features.
3. **At the Start of Regression Testing:** Before running full regression tests, to confirm the system's stability and that critical features are functioning correctly.

#### 4. Why do we need to conduct end-to-end Testing?

End-to-End (E2E) Testing is a type of testing that checks the complete flow of an application from start to finish. It ensures all parts of the system work together and that the software behaves as expected for real users.

##### **Key Reasons for E2E Testing:**

1. **Checks System Integration:** Verifies that different parts of the application work together properly.
2. **Catches Workflow Issues:** Ensures key processes run smoothly without errors.
3. **Confirms Data Accuracy:** Makes sure data moves correctly across the system.
4. **Simulates Real User Actions:** Tests the application as if it's used by real people.
5. **Provides Confidence for Release:** Ensures the application meets requirements and is ready for release.

#### 6. What is RTM?

RTM stands for **Requirement Traceability matrix**. RTM maps all the requirements with the test cases. By using this document one can verify test cases cover all functionality of the application as per the requirements of the customer.

- **Requirements:** Requirements of a particular project from the client.
- **Traceability:** The ability to trace the tests.
- **Matrix:** The data which can be stored in rows and columns form.

The main purpose of the requirement traceability matrix is to verify that the all requirements of clients are covered in the test cases designed by the testers.

7. What is GUI testing?

**Graphical User Interface Testing (GUI) Testing** is the process for ensuring proper functionality of the graphical user interface (GUI) for a specific application. GUI testing generally evaluates a design of elements such as layout, colors and also fonts, font sizes, labels, text boxes, text formatting, captions, buttons, lists, icons, links, and content. GUI testing processes may be either manual or automatic and are often performed by third-party companies, rather than developers or end users.

8. Difference between Retesting and Regression Testing? Explain with Real life Example.

Parameters	Regression testing	Retesting
Known as	Regression testing is known as generic testing	Retesting is known as planned testing.
Objective	Regression testing is to ensure that changes have not affected the unchanged part of the product.	Retesting is used to ensure the test cases which failed in last execution are fixed. It is performed on specific part of the system to verify that a specific defect has been fixed.
Defect Verification	Defect verification is not coming under regression testing.	Defect verification is coming under retesting.
Manual/ Automation Testing	Regression testing can be done either in automation or manual testing.	Retesting can not be automated.
Time	It takes more time as it explores the whole application to uncover the bugs.	It takes less time as it focuses only on the exploration of a certain defect of the product.

**Real-Life Example of Regression testing:** After fixing the "Transfer Money" button in the banking app, **regression testing** would involve testing other related features like "Check Balance," "Deposit Money," or "Transaction History" to make sure these still work correctly. It checks that the new fix hasn't broken other parts of the app.

**Real-Life Example of Retesting:** Suppose a banking app had an issue where the "Transfer Money" button didn't work. After the development team fixes this issue, testers perform **retesting** only on the "Transfer Money" function to confirm that the button now functions correctly.

#### 9. Write test cases on dot (.)

- To validate that a single dot is visible on plain paper.
- To validate that the size of the dot (e.g., should be a standard dot size).
- To validate that the color of the dot on the paper.
- To validate that the position of the dot on the paper (e.g., centered or in a specific location).
- To validate that the dot's clarity and sharpness on the paper.
- To validate that a dot remains after erasing around it, if applicable.
- To validate that the dot does not bleed or spread over time.
- To validate that if the dot can be removed without leaving residue.
- To validate that multiple dots do not overlap if more than one dot is added.

#### 10. Write Uses of a pen except writing.

- **Drawing:** Beyond writing, pens can be used for drawing, sketching, or doodling.
- **Cleaning Tool:** The end of a pen can be used to clean small crevices or remove debris from electronics or other hard-to-reach places.
- **Makeshift Ruler:** A pen can be used to measure small lengths when no ruler is available, using the length of the pen as a reference.
- **Sealing Envelopes:** Use a pen to securely seal the flap of an envelope by running the edge of the pen along it.
- **Stylus:** If the pen has a soft tip, it can be used as a stylus for touchscreen devices.
- **Bookmark:** A pen can serve as a temporary bookmark when you need to hold your place in a book.
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#### 11. How to categorize the testing. Write name of all testing types?

Testing in software development can be categorized in various ways based on different criteria such as the testing phase, the type of testing, and the level of testing. Here's a comprehensive categorization of testing types:

**1. Based on Level of Testing**

- **Unit Testing:**
- **Integration Testing:**
- **System Testing:**
- **Acceptance Testing:**

**2. Based on Purpose of Testing**

- **Functional Testing:**
- **Non-Functional Testing:**

**3. Based on the Testing Approach**

- **Manual Testing**
- **Automated Testing:**

**4. Based on Execution Environment**

- **Black-Box Testing:**
- **White-Box Testing:**

**5. Based on Test Execution**

- **Smoke Testing:**
- **Sanity Testing:**
- **Regression Testing:**
- **Exploratory Testing:**

**6. Based on Test Target**

- **Performance Testing:**
  - Load Testing
  - Stress Testing
  - Endurance Testing
- **Security Testing:**
- **Usability Testing:**
- **Compatibility Testing:**

**7. Based on Test Design Techniques**

- **Static Testing:**
- **Dynamic Testing:**

**8. Based on Types of Applications**

- **Web Application Testing**
- **Mobile Application Testing**
- **API Testing**
- **Database Testing**
- **Cloud Testing**

## 12. Difference between HTTP and HTTPS.

HTTP	HTTPS
HTTP stands for HyperText Transfer Protocol.	HTTPS for HyperText Transfer Protocol Secure.
In HTTP, URL begins with "http://".	In HTTPS, URL starts with "https://".
HTTP uses port number 80 for communication.	HTTPS uses 443 port number for communication.
HTTP is considered to be unsecure.	HTTPS is considered as secure.
HTTP works at Application Layer.	HTTPS works at Transport Layer.
In HTTP, Encryption is absent.	Encryption is present in HTTPS.
HTTP faster than HTTPS	HTTPS slower than HTTP

## 13. What is FTP and why we use it.?

**FTP**, or **File Transfer Protocol**, is a standard network protocol used to transfer files between a client and a server over a computer network. It operates on a client-server model and typically uses two channels for communication: a command channel for transmitting commands and a separate data channel for transferring files.

## 14. Full form of XAMPP, WAMP, LAMP, MAMP.

Here are the full forms of XAMPP, WAMP, LAMP, and MAMP:

1. **XAMPP:**
  - **X** (Cross-platform), **A** (Apache), **M** (MySQL), **P** (PHP), **P** (Perl)
2. **WAMP:**
  - **W** (Windows), **A** (Apache), **M** (MySQL), **P** (PHP)
3. **LAMP:**
  - **L** (Linux), **A** (Apache), **M** (MySQL), **P** (PHP)
4. **MAMP:**
  - **M** (Mac), **A** (Apache), **M** (MySQL), **P** (PHP)

## 15. Latest version of different browsers.

- **Google Chrome:** Version **130** (released on October 15, 2024)
- **Mozilla Firefox:** Version **132** (released on October 29, 2024)
- **Microsoft Edge:** Version **130** (released on October 17, 2024)
- **Apple Safari:** Version **18.1** (released on October 28, 2024)

## 16. Which types of bugs find in Black Box testing?

In black box testing, the tester evaluates the functionality of the software without having access to its internal code or implementation. This type of testing focuses on input and output, aiming to identify various types of bugs related to functionality, performance, and user experience. Here are some common types of bugs that can be found through black box testing:

**User Interface Bugs:** Issues related to the visual elements and user experience of the application, such as incorrect layouts, overlapping text, or navigation problems that hinder usability.

**Performance Bugs:** Problems that arise under load, resulting in slow response times, crashes, or lagging, which affect the application's speed and reliability.

**Compatibility Bugs:** Discrepancies in the software's performance across different environments, such as browsers or devices, causing it to function properly in one but not in another.

**Security Bugs:** Vulnerabilities that can be exploited by attackers, including flaws in authentication processes, data exposure, or weaknesses that could allow unauthorized access.

## 17. What do you mean by Responsiveness ?

**Responsiveness** refers to the ability of a system, application, or website to adapt and react quickly to user inputs and environmental changes. In web design, it specifically means that a site is designed to adjust its layout and functionality seamlessly across various devices and screen sizes, ensuring an optimal user experience. This involves using flexible layouts, images, and CSS media queries to ensure that content is easily navigable on desktops, tablets, and smartphones.

## 18. What is Performance Testing? Explain the difference between Load Testing , Stress Testing and Volume Testing.

**Performance Testing** is a type of software testing aimed at evaluating the speed, responsiveness, and stability of a system under a particular workload. It ensures that the application meets performance criteria and can handle expected and unexpected user loads. The goal is to identify bottlenecks, optimize performance, and ensure that the software performs well under various conditions.

### **Key Types of Performance Testing:**

#### **1. Load Testing:**

- **Definition:** This involves testing the system under expected load conditions to verify that it can handle the specified number of users or transactions without performance degradation.
- **Purpose:** To determine how the system behaves under normal and peak load conditions.
- **Example:** Simulating 500 users simultaneously accessing a web application to observe response times and resource utilization.

## 2. Stress Testing:

- **Definition:** Stress testing assesses how a system behaves under extreme load conditions, beyond its maximum specified limits, to determine its breaking point.
- **Purpose:** To identify the system's failure point and how it recovers from failure, ensuring stability and robustness.
- **Example:** Gradually increasing the number of users from 500 to 5,000 to see at what point the application fails and how it handles that failure.

## 3. Volume Testing:

- **Definition:** This focuses on testing the system with a large volume of data to evaluate its performance and behavior with substantial data sets.
- **Purpose:** To ensure that the application can manage and process large volumes of data efficiently.
- **Example:** Testing how a database handles the insertion of millions of records and its impact on response times.