SNS COLLEGE OF TECHNOLOGY

Kurumbapalayam (Po), Coimbatore – 641 035

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE NAME: 23ITO201- Software Testing (OPEN ELECTIVE)

III YEAR / VI SEMESTER

Unit 3 - LEVELS OF TESTING

Topic : Regression Testing and Ad-hoc testing

Empathy


Choose the appropriate testing approach for software quality.
VS
Regression Testing
Ensures existing functionality remains intact
Ad-Hoc Testing
Uncovers unexpected bugs through random exploration

Regression Testing Components

Purpose

Ensures software stability and reliability after code changes. Mitigates risks associated with updates.

Methodology

Uses predefined, documented test cases, often selected from an existing test suite.

Timing

Performed after any code modification, and is a key part of agile and CI/CD development pipelines.

Automation

Highly suitable for automation due to its repetitive and predictable nature. Tools like Selenium and Ranorex are widely used.

Testers

Can be performed by both developers and QA teams.

Ad-hoc Testing

Spontaneous

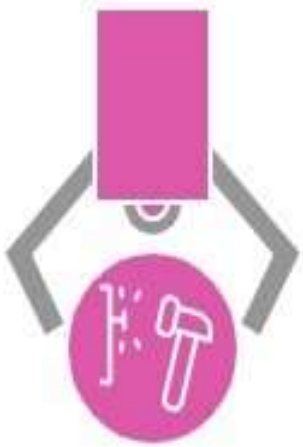
Testing is performed without prior planning.

Unstructured

No formal documentation or test cases are used.

Tester's Intuition

Relies on the tester's knowledge and experience.



Break the System

Aims to find unexpected bugs and issues.

Should ad-hoc testing be performed?

Manual Process

Not suitable for automation due to its unscripted nature.

Timing Flexibility

Can be done at any stage, especially after formal testing.

Experienced Testers

Requires testers with deep product knowledge.

Flexibility and Creativity

No scripts are needed, enabling testers to be flexible.

Explore Edge Cases

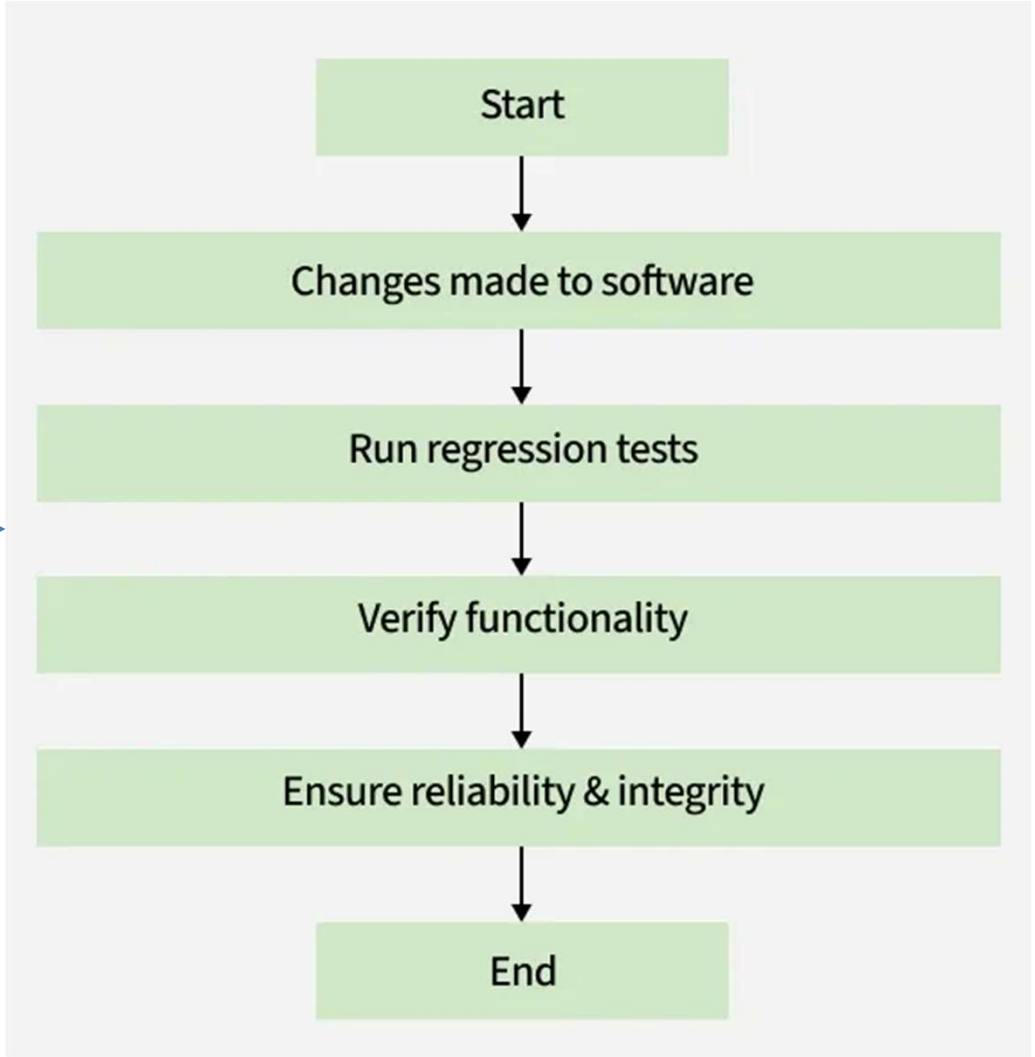
It allows for creative exploration of unusual scenarios.

Find Missed Defects

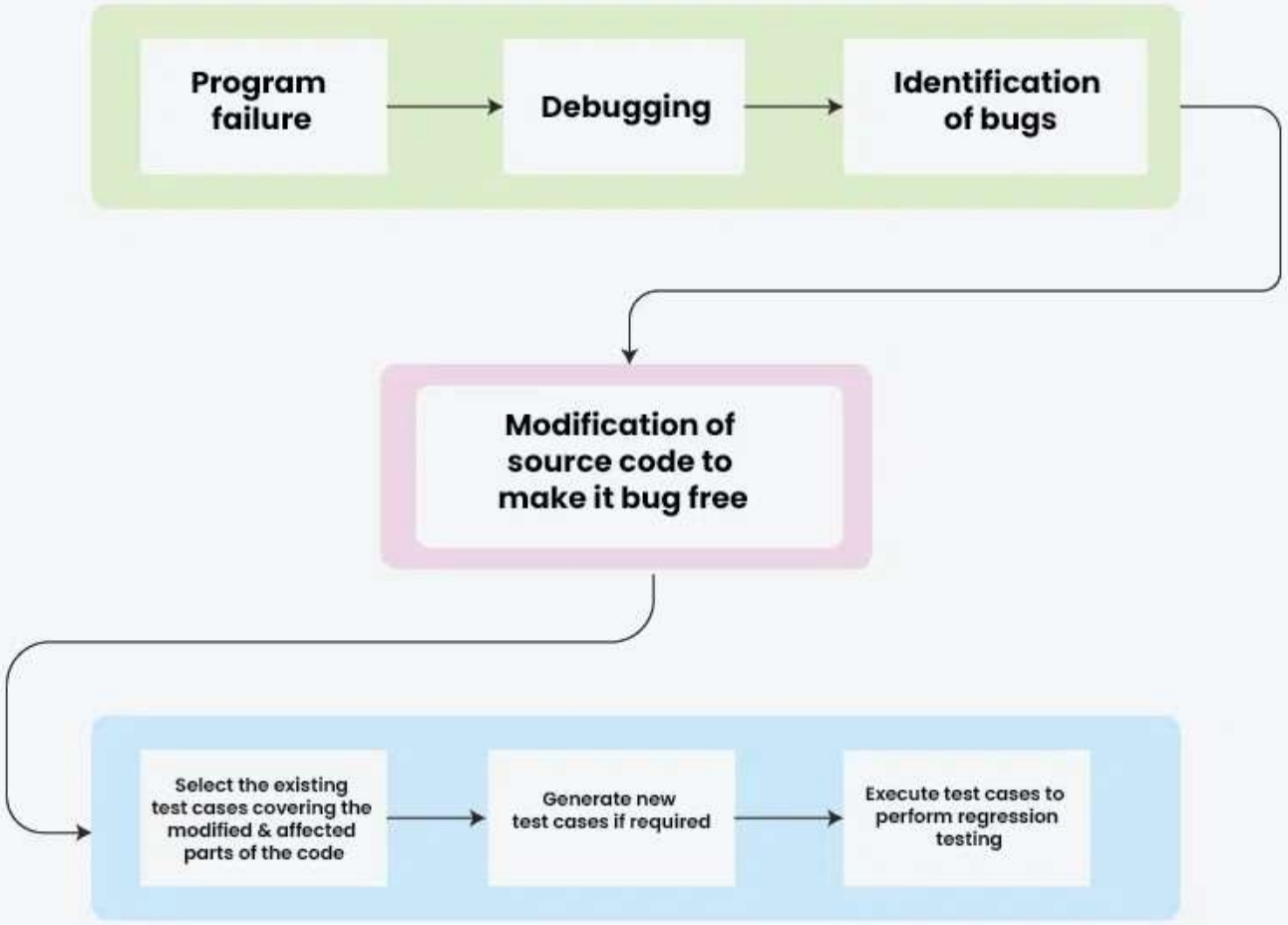
Ad-hoc testing can uncover bugs missed by formal methods.

Regression Testing involves re-executing a previously created test suite to verify that recent code changes haven't caused new issues. This verifies that updates, bug fixes, or enhancements do not break the functionality of the application.

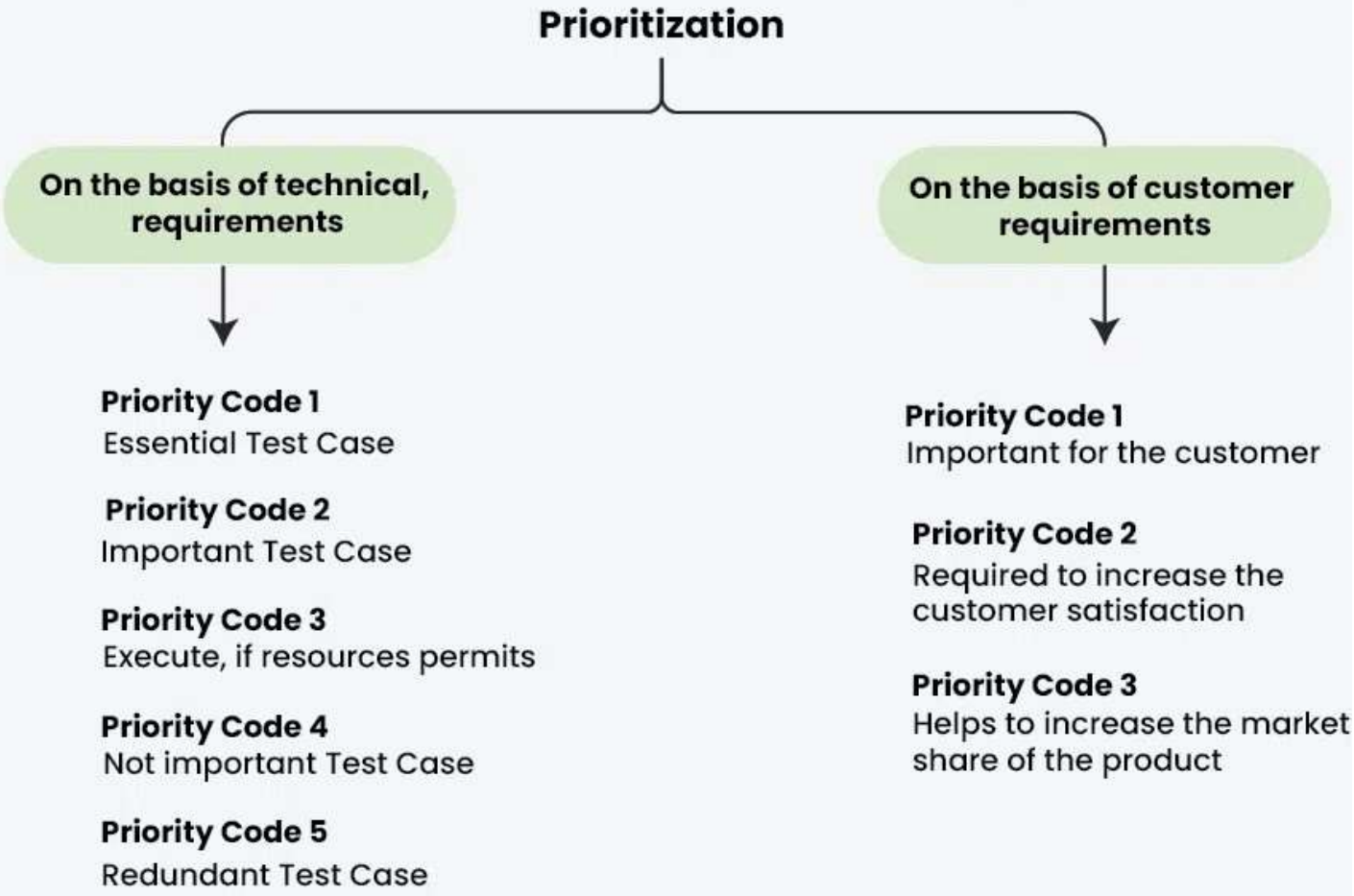
Regression Testing Steps



Process Regression testing

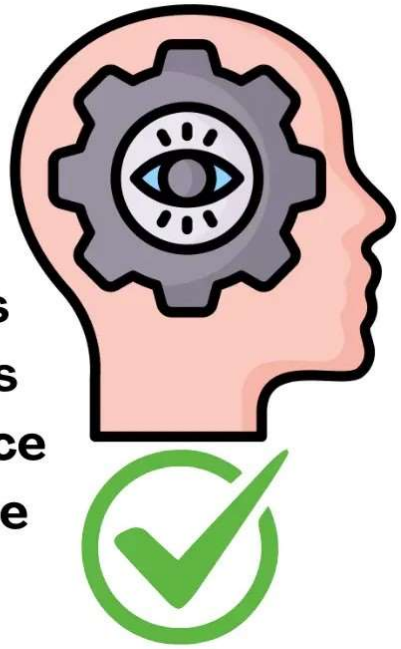


Selection of Test cases for Regression Testing

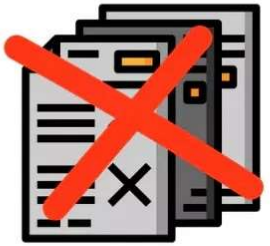


What is Adhoc Testing?

Hunches
Instincts
Experience
Expertise



No Documentation

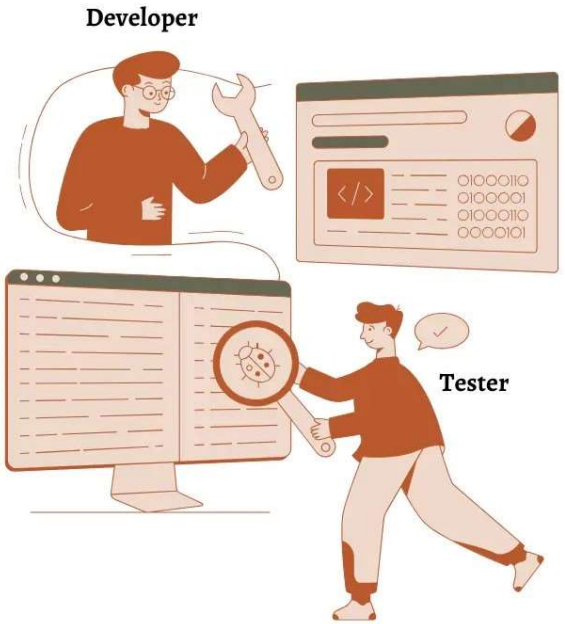


No Test Design

No Test Case

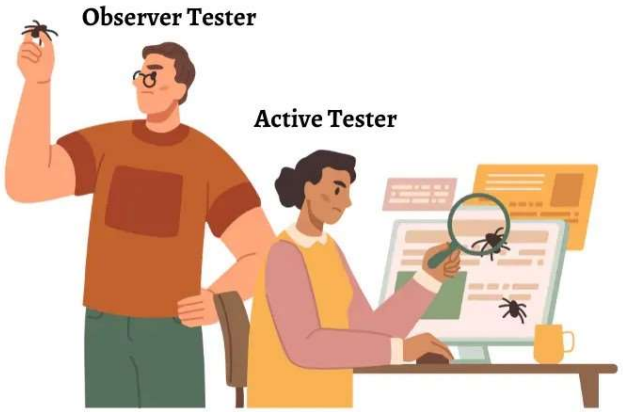
Types of Adhoc –Testing

Buddy Testing



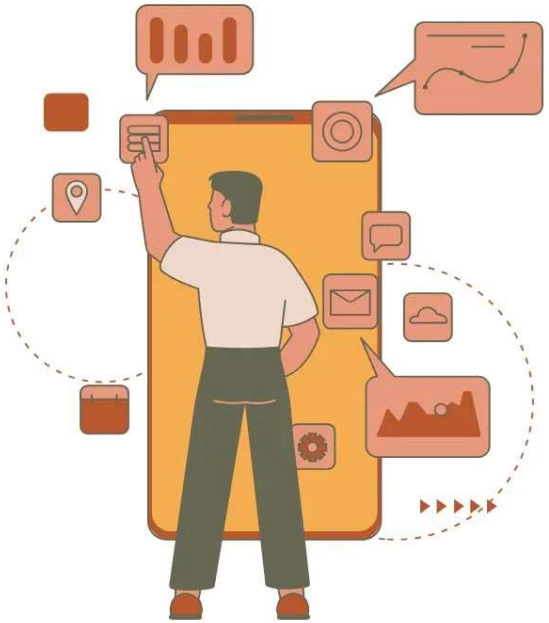
- Tester: Finds bugs.
- Developer: Fixes issues in real-time.

Pair Testing



- Active Tester: Executes tests.
- Observer Tester: Suggests ideas and documents findings.

Monkey Testing



- Tester: Inputs random data and actions to push the system's limits.

Adhoc testing

Activity

Activity – Regression Testing

Activity Title

Verifying Software After Changes

Scenario

A team developed a **Student Management System** with features like:

•Student Login

•View Marks

•Update Profile

Later, developers added a **New Feature: Online Fee Payment**. After adding this feature, testers must check whether the **existing functions still work correctly**.

Activity Task

Students perform **Regression Testing** to ensure that new changes do not affect existing features.

Steps

1.Divide students into **small testing groups**.

2.Provide the **existing features list**.

3.Assume a **new feature is added** to the system.

4.Students re-test the old features.

Step	Feature Tested	Action	Expected Result
1	Student Login	Enter username & password	Login successful
2	View Marks	Select semester	Marks displayed
3	Update Profile	Change phone number	Profile updated
4	Fee Payment	Pay fees online	Payment successful

Learning Outcome

Students understand how previously tested features are re-tested after system changes.

MCQ – Regression Testing

1. What is the main purpose of Regression Testing?

A) To test individual modules

B) To ensure new changes do not affect existing functionality

C) To test system performance

D) To test user interface

Answer: B) To ensure new changes do not affect existing functionality

2. Regression Testing is usually performed when:

A) A new system is created

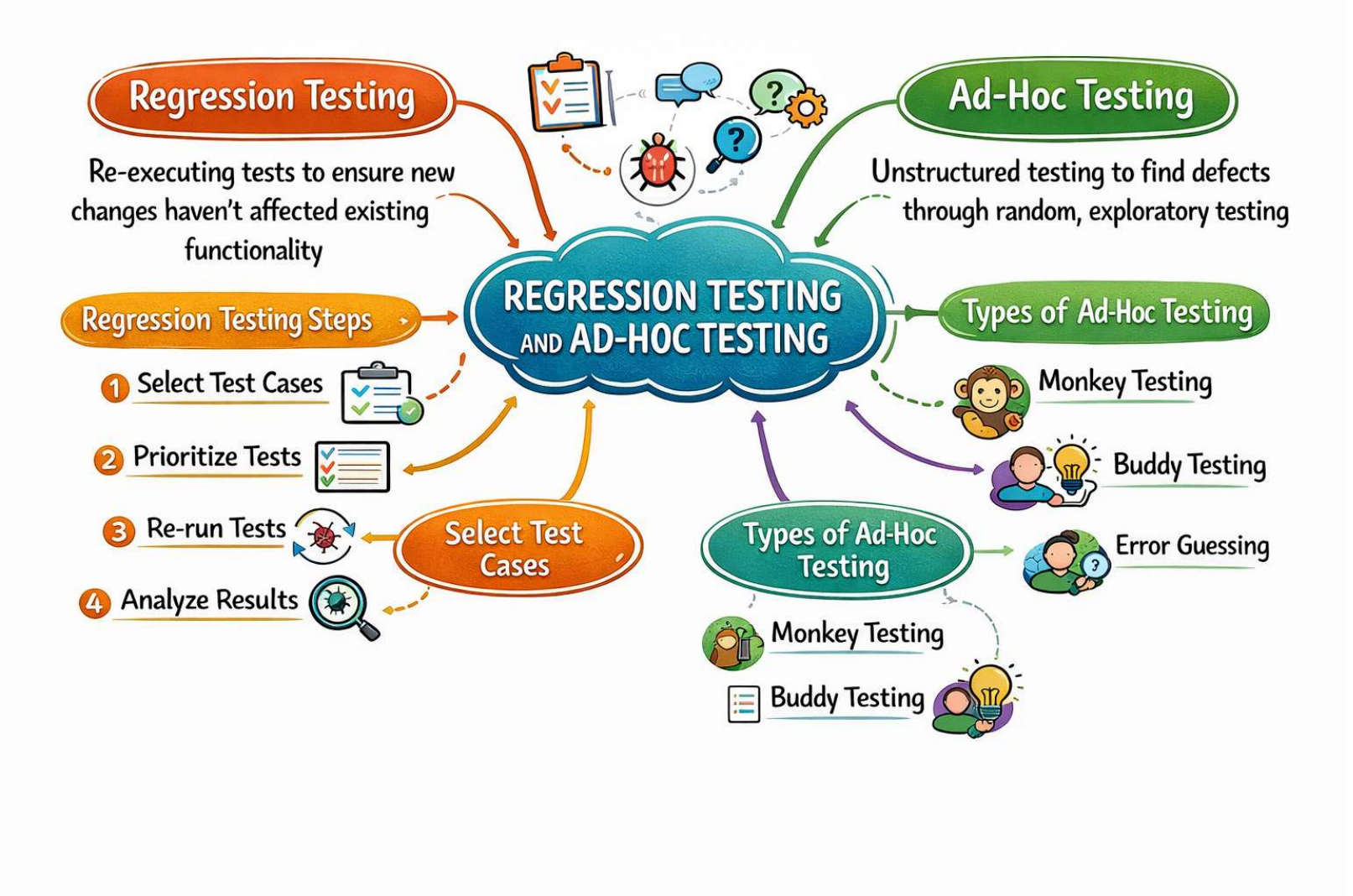
B) Changes or updates are made to the software

C) Only during unit testing

D) Only during system testing

Answer: B) Changes or updates are made to the software

Mind Map


Regression Testing
Re-executing tests to ensure new changes haven't affected existing functionality
Ad-Hoc Testing
Unstructured testing to find defects through random, exploratory testing
REGRESSION TESTING AND AD-HOC TESTING
Regression Testing Steps
1 Select Test Cases
2 Prioritize Tests
3 Re-run Tests
4 Analyze Results
Select Test Cases
Types of Ad-Hoc Testing
Monkey Testing
Buddy Testing
Error Guessing
Types of Ad-Hoc Testing
Monkey Testing
Buddy Testing

TEXT BOOKS	
1.	Srinivasan Desikan and Gopalaswamy Ramesh, ―Software Testing – Principles and Practices, Pearson Education, 2006.
REFERENCES	
1.	Ilene Burnstein, ―Practical Software Testing, Springer International Edition, 2003
2.	Edward Kit, Software Testing in the Real World – Improving the Process‖, Pearson Education, 1995
3.	Boris Beizer, Software Testing Techniques – 2nd Edition, Van Nostrand Reinhold, New York, 1990.
4.	Aditya P. Mathur, ―Foundations of Software Testing _ Fundamental Algorithms and Techniques, Dorling Kindersley (India) Pvt. Ltd., Pearson Education, 2008.

Thank You