Welcome to Manual Plus Full Stack Automation Testing Course

Day 7

- **Module : 1. Manual Testing**
  - 1.4 - Test Management and Execution

- **Today** : Web Application Testing, Test Planning, Strategies, Test Scenario and Test Case Development Techniques & Bug Reporting.

- **Goal** : Understand the essentials of web testing, create meaningful test scenarios and cases, and report bugs professionally.

Web Application Testing

Web Application Testing is the process of testing web-based applications to ensure they function correctly, securely, and efficiently across different browsers, devices, and environments.

Key components to test: UI, Database, APIs, Browser compatibility

Types of Testing:

- ➔ Functional Testing
- ➔ UI Testing
- ➔ Cross-browser Testing
- ➔ Security Testing
- ➔ Performance Testing

Tools: Selenium, Postman, SQL

Test Planning & Test Strategies

Test Planning is a process of defining the *scope, objectives, approach, resources, and schedule* of testing activities.

Key Components of a Test Plan:

- Test Objectives
- Scope (In-scope & Out-of-scope)
- Roles & Responsibilities
- Entry & Exit Criteria
- Environment & Tools
- Test Deliverables
- Risk & Mitigation
- Schedule & Milestones

Test Scenario Development Techniques

Test Scenario is a high-level idea or condition that a tester would verify.

Key Techniques:

1. **Requirement-Based -** Derive scenarios directly from requirement documents.
2. **Use Case-Based -** Build scenarios around user actions and system responses (flows).
3. **Exploratory Testing -** Create scenarios on-the-fly based on domain knowledge and intuition.
4. **Error Guessing -** Use experience to guess areas likely to fail.

Test case writing techniques

Test Case is a set of conditions with steps and expected results to verify a specific functionality.

Key Techniques:

1. Positive Testing
2. Negative Testing
3. Boundary Value Analysis (BVA)
4. Equivalence Partitioning (EP)
5. Error Guessing

Positive V/s Negative Test Cases

- **Requirement:**
  - For Example if a text box is listed as a feature and in SRS it is mentioned as Text box accepts 6 - 20 characters and only alphabets.
- **Positive Test Cases:**
  - Textbox accepts 6 characters.
  - Textbox accepts upto 20 chars length.
  - Textbox accepts any value in between 6-20 chars length.
  - Textbox accepts all alphabets.
- **Negative Test Cases:**
  - Textbox should not accept less than 6 chars.
  - Textbox should not accept chars more than 20 chars.
  - Textbox should not accept special characters.
  - Textbox should not accept numerical.

Boundary Value Analysis Testing

Boundary Value Analysis (BVA) is a **test design technique** where you test the **edge (boundary) values** of input ranges, because bugs often occur at the limits.

Most errors happen at **start, end, or just outside** of valid input ranges

Example 1: If an input field accepts numbers from **1 to 100**, you test:

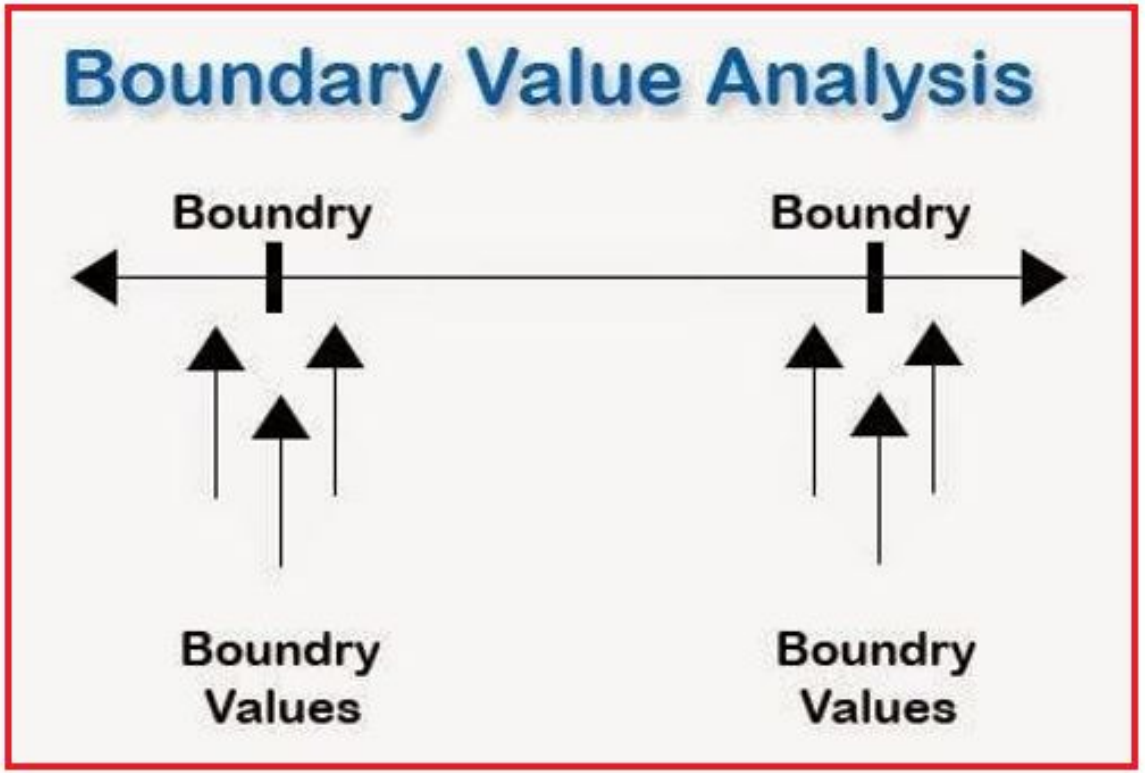
Test Inputs Created Using BVA:

Lower Boundary - 0, 1, 2

Upper Boundary - 99, 100, 101

Example 2: Age Field (Valid age is between 18 till 60)?

Boundary Value Analysis



Equivalence Partitioning

Equivalence Partitioning is a test design technique where **input data is divided into groups (partitions)** that are expected to behave the same way.

You test **one value** from each group, assuming the rest will behave similarly.

- ➔ Reduces the number of test cases
- ➔ Covers **valid** and **invalid** inputs efficiently
- ➔ Saves time without missing key tests

Equivalence Partitioning

Example 1 : If field accepts 1 to 100, the input values can be divided into:

Invalid - less than 1 (0)

Valid - anything between 1-100 (65)

Invalid - More than 100 (101)

Example 2 : Password length must be 6-12 characters

Bug Reporting

Title – Short and clear description

Description – Summary of the issue

Steps to Reproduce – Exact steps to trigger the bug

Expected Result – What should happen

Actual Result – What actually happened

Severity – How bad the issue is (Blocker, Major, Minor)

Priority – How soon it should be fixed (High, Medium, Low)

Attachments – Screenshots, logs, videos