

Test Design Techniques

1. Introduction

Test design techniques help testers derive high-quality test cases based on requirements, user behavior, and system specifications.

2. Categories of Test Design Techniques

- Black-box techniques
- White-box techniques
- Experience-based techniques

3. Black-Box Techniques

Equivalence Partitioning (EP)

Divides input data into valid and invalid partitions.

Boundary Value Analysis (BVA)

Focuses on values at boundaries.

Decision Table Testing

Useful for complex business rules.

State Transition Testing

Used where system behavior changes by state.

Use Case Testing

Defines test scenarios based on real user interactions.

4. White-Box Techniques

Statement Coverage

Ensures every statement is executed.

Branch Coverage

Validates true and false conditions.

Condition Coverage

Covers all logical conditions.

5. Experience-Based Techniques

Exploratory Testing

Learn, design, execute simultaneously.

Error Guessing

Based on tester experience.

6. Choosing a Technique

Depends on: risk, project type, documentation, resources.

7. Benefits

Improves coverage, reduces duplication, increases efficiency.