

## What are the different types of test design techniques? When would you use these types of test design techniques?

Test design techniques are methods used to derive and select test cases from test conditions or test scenarios.

Test Design Technique	Coverage Types / Basic Techniques	Test Basis	Quality Characteristic / Test Type	When to Use
Boundary Value Analysis (BVA)	Input Domain Coverage	Input Specifications	Correctness, Robustness	When testing input ranges and boundary conditions
Equivalence Partitioning (EP)	Input Domain Coverage	Input Specifications	Correctness, Robustness	When testing input classes that behave similarly
Decision Table Testing	Logic Coverage	Business Rules	Correctness, Business Logic	When dealing with complex business logic
State Transition Testing	State-Based Coverage	State Diagrams	Correctness, State Transitions	When testing systems with state-based behavior
Pairwise Testing	Combinatorial Coverage	Multiple Parameters	Efficiency, Combinatorial Coverage	When testing combinations of multiple input parameters
Use Case Testing	Functional Scenario Coverage	Use Case Specifications	Requirement Validation, Functional Testing	When validating the system against specific use cases
Exploratory Testing	N/A	N/A	Defect Detection, Usability Testing	When exploring the system without predefined scripts
Decision Table Test	Logic Coverage	Business Rules	Correctness, Business Logic	When testing complex decision-making scenarios
Data Combination Test	Input Domain Coverage	Input Specifications	Correctness, Data Validation	When testing various combinations of input data
Elementary Comparison Test	Comparison of Individual Elements	Functional Requirements	Correctness, Data Validation	When comparing individual elements in the system
Error Guessing	Error-Based Coverage	Tester's Experience	Defect Detection, Usability Testing	When leveraging tester's intuition to guess potential defects

Data Cycle Test	Functional Scenario Coverage	Data Flows	Data Flow Verification	When testing data flow through different components
Process Cycle Test	Functional Scenario Coverage	Process Flows	Process Flow Verification	When testing end-to-end processes within the system
Real-Life Test	Real-Life Scenarios	Real-World Use Cases	Real-Life Use Case Validation	When validating the system against real-world scenarios