**Specification Based Techniques**

• **Equivalence Partitioning: Equivalence class testing (with all variation) -with test case- have format**

- Equivalence testing,

- week robust,

- strong robust,

- week normal,

- strong normal

- plotting graph

The number of test cases for **Strong Robust Equivalence Class testing** can be calculated using the formula:

**N = ((k^2) x (p^m)) + ((k x q^m) x (p^(m-1)))**

Where:

k is the number of valid input values for each input variable

p is the number of modes (3 in this case)

m is the number of input variables (2 in this case)

q is the number of invalid input values for each input variable (1 in this case)

• **Boundary Value Analysis (Range Checking): Boundary value analysis (BVA) (with all variation)- with test case - have format**

- robust BVA

- worst case BVA

- robust worst case BVA

- Formula (very important)

- triangle example

- plotting graph

Normal BVA = **4n+1**

Robust BVA = **6n+1**

Worst Case BVA = **5^n (5 the power n)**

Robust Worst: - **7^n (7 the power n)**

• Decision Tables (Cause-Effect table: Number of possible Combinations is given by **2 ^ n**)

Cause effect graph

<https://www.guru99.com/equivalence-partitioning-boundary-value-analysis.html>

<https://www.guru99.com/decision-table-testing.html>

**Code Based Techniques**

• Control Flow

• Data Flow

<https://www.educative.io/answers/what-is-control-flow-testing>

<https://www.educative.io/answers/what-is-data-flow-testing>

**Techniques based on nature of application**

• Object Oriented

• Component-based

• Web-based

• GUI

• Protocol Conformance

• Real Time Systems

Graph theory

McCabe

(optional)

Usage based testing

- Operational Profile

- Reliability Engineered Testing

Based on Engineers experience and intuition

- Exploratory

- Ad-hoc

<https://www.guru99.com/exploratory-testing.html>

<https://www.automationtestinginsider.com/2022/05/what-is-adhoc-testing-difference.html>

**Module 2:**

Example:

Automated Teller Machine

• Tea/Coffee Vending Machine

• Washing Machine

• Contacts – Mobile Phone Application

• Messaging – Mobile Phone Application

• Email – Webmail/App/Client

<https://www.softwaretestinggenius.com/boundary-value-analysis-bva-a-black-box-testing-technique/#:~:text=If%20we%20have%20a%20function,4n%20%2B%201)%20test%20cases>

<https://t4tutorials.com/what-is-robust-case-testing-software-testing/>

<https://t4tutorials.com/what-is-simple-boundary-value-testing-on-3-variables-software-testing/>

<https://www.guru99.com/equivalence-partitioning-boundary-value-analysis.html>

<https://www.geeksforgeeks.org/boundary-value-test-cases-robust-cases-and-worst-case-test-cases/>