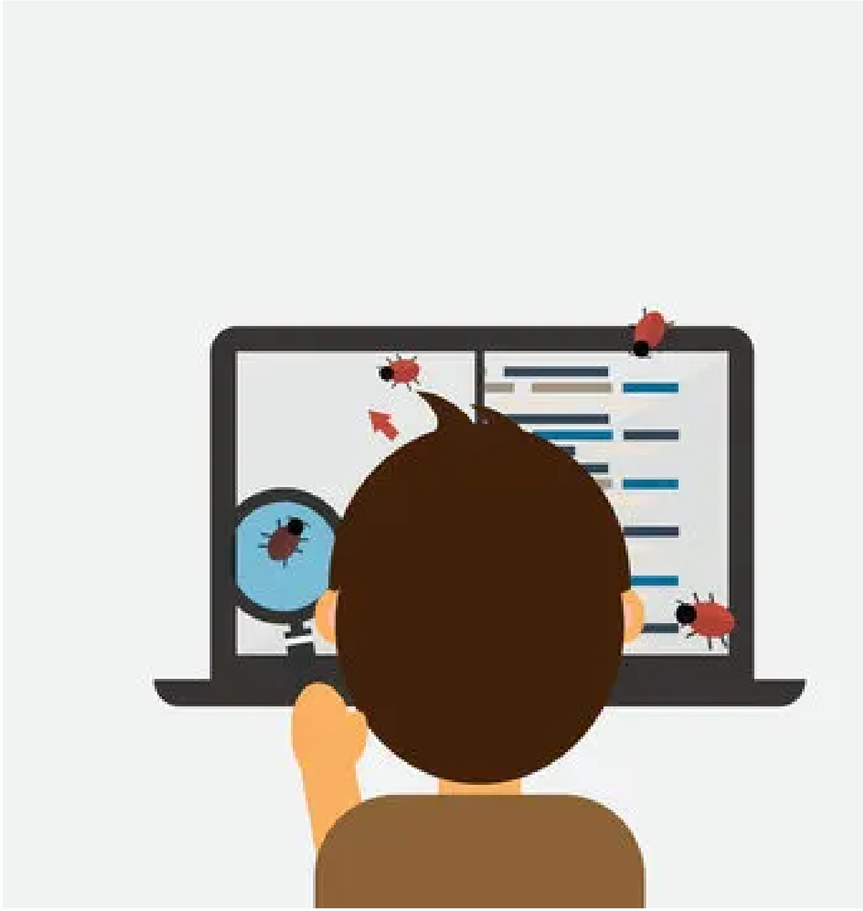
Equivalence Partitioning
&
Boundary Value Analysis

By : wathsala nanayakkara

✅ What is Equivalence Partitioning?

- Equivalence Partitioning is a technique where input data is divided into groups (partitions) that are expected to behave the same way. You only need to test one value from each group, reducing the number of test cases without sacrificing test coverage.



🧪 Example – Age Input Field

Imagine a field where valid age input is between 18 and 60.

With EP, you test:

- A valid value (e.g., 30) from the "valid" group (18–60) ✅
- An invalid value (e.g., 15) from the "below range" group ❌
- An invalid value (e.g., 65) from the "above range" group ❌

You don’t need to test every number in the range just one from each partition is enough to gain confidence.

🚧 What is Boundary Value Analysis?

- Boundary Value Analysis focuses on testing values at the edges of input boundaries. Many defects tend to occur at these boundary points due to coding errors like off-by-one mistakes or incorrect range checks.

🧪 Example – Age Input Field (again)

With BVA, you test:

- Just below the valid range (e.g., 17)
- Exactly on the lower boundary (e.g., 18)
- Exactly on the upper boundary (e.g., 60)
- Just above the valid range (e.g., 61)

Boundaries are fragile. That's why this technique is essential in catching edge-case bugs.

🎯 When Should You Use EP and BVA?

Use them when:

- You're testing input fields with defined value ranges (e.g., age, salary, discount %, etc.)
- You want to optimize test effort while ensuring wide coverage.
- You suspect the system may behave incorrectly around boundaries or invalid inputs.

🧠 Final Thought

As a QA professional, you don't have to test every possible value. Instead, you should aim to test the right values — the ones most likely to uncover bugs.

✅ Use Equivalence Partitioning to test logically grouped inputs
✅ Use Boundary Value Analysis to catch issues at the edges

These are simple but powerful strategies that can level up your testing game.

Thank You!

Wathsala Nanayakkara