Test Design Techniques — Notes

1. Equivalence Partitioning (EP)

Definition: Equivalence Partitioning is a black-box test design technique where input values are divided into partitions (valid and invalid). Only one value from each partition is tested, as all values in the same partition are expected to be treated the same by the system.

Example Requirement: Age must be between 18 and 60.

Identified Partitions:
- <18 → Invalid
- 18–60 → Valid
- >60 → Invalid

Chosen Test Values: 17, 30, 61

2. Boundary Value Analysis (BVA)

Definition: Boundary Value Analysis focuses on testing values at the edges of input ranges because defects often occur at boundaries. Test values just below, at, and just above the boundary.

Example Requirement: Age must be between 18 and 60.

Test Values:
- 17 (just below min)
- 18 (min)
- 19 (just above min)
- 59 (just below max)
- 60 (max)
- 61 (just above max)

3. Decision Tables

Definition: Decision Tables are used when the outcome depends on multiple conditions. Each unique combination of inputs corresponds to one test case.

Example Requirement: Loan is approved if income > 50k AND credit score > 700.

Income > 50k	Credit Score > 700	Loan Approved?
Yes	Yes	Yes
Yes	No	No
No	Yes	No

No	No	No

Learning Outcomes:
- Understood how to apply EP to reduce test cases while keeping coverage.
- Practiced BVA to target defect-prone edge conditions.
- Applied Decision Tables to systematically cover combinations of rules.