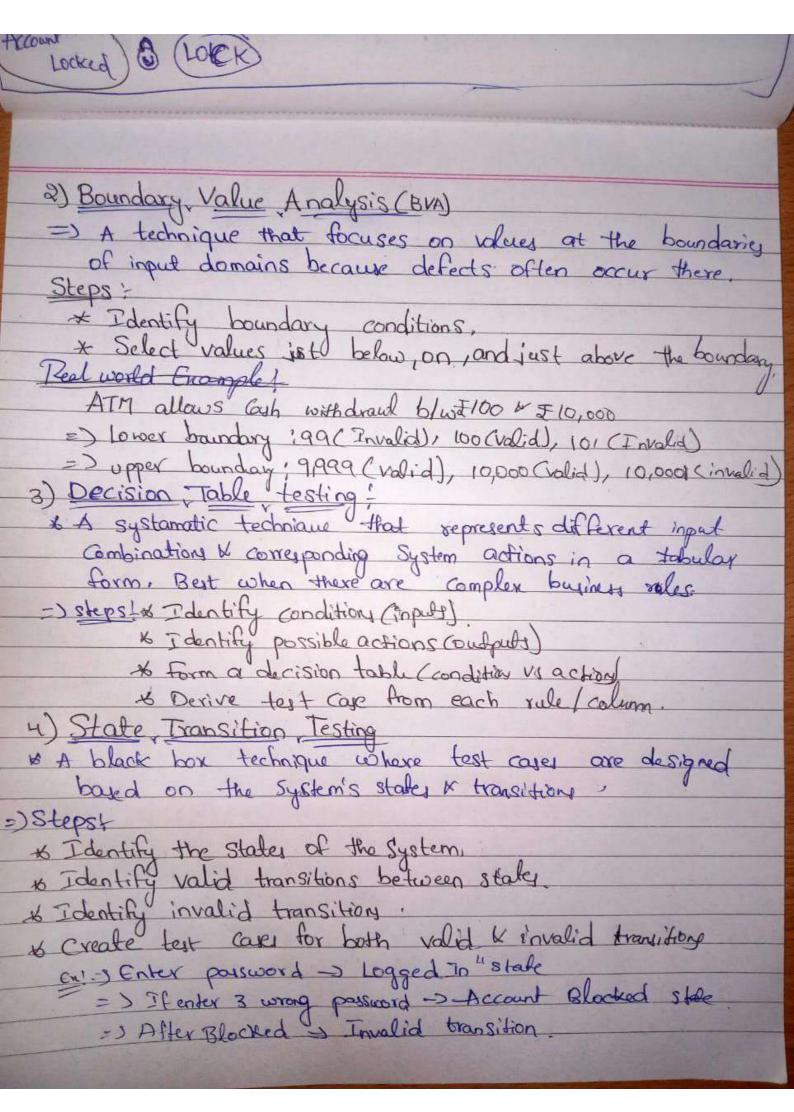# 1) Equivalence partitioning (EP) Technique :

=> A black-box test design technique where input data is divided into partitions (valid & invalid classes). Test cases are designed to cover each class at least once

Steps :

=> 1) Identify input conditions.

=> 2) Divide input data into equivalence classes (valid & invalid)

=> 3) Select one value from each class to test.

Equivalence partitioning Example : password length (6→12 chars)

Invalid (<6 chars)	valid (6→12 chars)	Invalid (>12 chars)
En : 4 chars	En : 8 chars	En : 15 cha
Hari	Hari 7989	Dertharilu325 561

Ex:- ① Username :(77777)   ② UN : (77777)   ③ UN : 77777

password :- Hari   Pass :- (Hari 1234)   Pas (Hari....7677

Invalid (<6 chars)   valid (6-12 char)   en : 15 chas

4 characters only   8 characters   15 characte

=> Instead of testing every number of character, Ep reduces tests to 3 effective cases.

=> Ep helps reduce the number of test cases while still ensuring good coverage by selecting one representative value from each partition (valid & invalid). This saves time & effort without compromising test quality.

2) <u>Boundary Value Analysis (BVA)</u>
=) A technique that focuses on values at the boundaries
of input domains because defects often occur there.
<u>Steps :-</u>
* Identify boundary conditions.
* Select values just below, on, and just above the boundary.
<u>Real world Example !</u>
ATM allows Cash withdrawl b/w ₹100 & ₹10,000
=) Lower boundary :99(Invalid), 100 (valid), 101 (Invalid)
=) upper boundary : 9999 (valid), 10,000 (valid), 10,0001 (invalid)

3) <u>Decision Table testing :-</u>
* A systamatic technique that represents different input
Combinations & corresponding System actions in a tabular
form, Best when there are complex business rules.
=) steps! * Identify conditions (inputs).
* Identify possible actions (outputs)
* Form a decision table (condition vs action)
* Derive test case from each rule / column.

4) <u>State Transition Testing</u>
* A black box technique where test cases are designed
based on the System's states & transitions.
=) Steps!
* Identify the states of the system.
* Identify valid transitions between states.
* Identify invalid transition.
* Create test cases for both valid & invalid transitions
<u>ex!</u> =) Enter password → Logged In "state
=) If enter 3 wrong password → Account Blocked state.
=) After Blocked → Invalid transition.

Decision Table Testing Example

prime?	purchase > 500?	Action
Yes	Yes	20% discount
Yes	NO	10% discount
NO	Yes	5% discount
NO	NO	No discount.

State Transition Testing Example : Login System

Step-7 → Logged In 🏠

Step-5

Step 3

Start ← Correct password

3 wrong Attempts

Key 🔑

Account Locked 🔒 LOCK