Practice Problems

I. Boundary Value Analysis

Test Case Number #1

Let us assume a test case that takes the value of age from 21 to 65.

BOUNDARY VALUE TEST CASE		
INVALID TEST CASE (Min Value – 1)	VALID TEST CASES (Min, +Min, Max, -Max)	INVALID TEST CASE (Max Value + 1)
20	21, 22, 65, 64	66

From the above table, we can view the following inputs that are given.

- The minimum boundary value is given as 21.

- The maximum boundary value is given as 65.

- The valid inputs for testing purposes are 21, 22, 64 and 65.

- The invalid inputs for test cases are 20 and 66.

Test Case Scenarios

1. Input: Enter the value of age as 20 (21-1)

Output: Invalid

2. Input: Enter the value of age as 21

Output: Valid

3. Input: Enter the value of age as 22 (21+1)

Output: Valid

4. Input: Enter the value of age as 65

Output: Valid

5. Input: Enter the value of age as 64 (65-1)

Output: Valid

6. Input: Enter the value of age as 66 (65+1)

Output: Invalid

Test Case Number #2

Let us assume the next test case that takes the length of the input name from 8 to 14

characters.

BOUNDARY VALUE TEST CASE		
INVALID TEST CASE **(Min Value – 1)**	**VALID TEST CASES** **(Min, +Min, Max, -Max)**	**INVALID TEST CASE** **(Max Value + 1)**

7	8, 9, 14, 13	15

From the above table, we can view the following inputs that are given.

- The minimum boundary value is given as 8.

- The maximum boundary value is given as 14.

- The valid character lengths for testing purpose are 8, 9, 14 and 13

- The invalid character lengths for test cases are 7 and 15.

Test Case Scenarios

1. Input: Enter the text length as 7 (Min length -1)

Output: Invalid

2. Input: Enter the text length as 8 (Min length)

Output: Valid

3. Input: Enter the text length as 9 (Min length +1)

Output: Valid

4. Input: Enter the text length as 14 (Max length)

Output: Valid

5. Input: Enter the value of age as 13 (Max length -1)

Output: Valid

6. Input: Enter the value of age as 15 (Max length +1)

Output: Invalid

Example #1: Suppose, a printer has to make and deliver printed copies ranging from 1 to 150. So, to apply boundary value testing, the analysis is done on the boundaries, taking the extreme ends. The maximum value is 150 and the minimum value is 1. The invalid values in this test case will be 0 and 151. Therefore, there will be four boundary value tests for such a scenario.

Example #2: Another example is that consider the field that holds the maximum 5 digit character. The maximum value of the field is 99999 and the minimum value is 10000. These are the boundary values and the values below minimum and above maximum, all fall under invalid cases and testing is done according to that.

Example on Boundary Value Analysis Test Case Design Technique:

Assume, we have to test a field which accepts Age 18 – 56

Minimum boundary value is 18

Maximum boundary value is 56

Valid Inputs: 18,19,55,56

Invalid Inputs: 17 and 57

Test case 1: Enter the value 17 (18-1) = Invalid

Test case 2: Enter the value 18 = Valid

Test case 3: Enter the value 19 (18+1) = Valid

Test case 4: Enter the value 55 (56-1) = Valid

Test case 5: Enter the value 56 = Valid

Test case 6: Enter the value 57 (56+1) =Invalid

Example 2:

Assume we have to test a text field (Name) which accepts the length between 6-12 characters.

Minimum boundary value is 6

Maximum boundary value is 12

Valid text length is 6, 7, 11, 12

Invalid text length is 5, 13

Test case 1: Text length of 5 (min-1) = Invalid

Test case 2: Text length of exactly 6 (min) = Valid

Test case 3: Text length of 7 (min+1) = Valid

Test case 4: Text length of 11 (max-1) = Valid

Test case 5: Text length of exactly 12 (max) = Valid

Test case 6: Text length of 13 (max+1) = Invalid

II. Equivalence Class Partition

Example 1:

Assume, we have to test a field which accepts Age 18 – 56

AGE [Enter Age]   *Accepts value 18 to 56

EQUIVALENCE PARTITIONING		
Invalid	**Valid**	**Invalid**
<=17	18-56	>=57

Valid Input: 18 – 56

Invalid Input: less than or equal to 17 (<=17), greater than or equal to 57 (>=57)

Valid Class: 18 – 56 = Pick any one input test data from 18 – 56

Invalid Class 1: <=17 = Pick any one input test data less than or equal to 17

Invalid Class 2: >=57 = Pick any one input test data greater than or equal to 57

We have one valid and two invalid conditions here.

Example 2:

Assume, we have to test a filed which accepts a Mobile Number of ten digits.

MOBILE NUMBER [Enter Mobile No.]   *Must be 10 digits

EQUIVALENCE PARTITIONING		
Invalid	**Valid**	**Invalid**
987654321	9876543210	98765432109

Valid input: 10 digits

Invalid Input: 9 digits, 11 digits

Valid Class: Enter 10 digit mobile number = 9876543210

Invalid Class Enter mobile number which has less than 10 digits = 987654321

Invalid Class Enter mobile number which has more than 11 digits = 98765432109