

IT314 Software Engineering  
Lab 8  
By 202201446

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Q.1)

Input Condition	Valid Equi. Class	Invalid Equi. Class
Values for month(1 to 12)	One	Two(less than 1, more than 12)
Values for day(1 to 31)	One	Two
Values for year(1990 to 2015)	One	Two
Values for day for month of February	Two(1 - 29 if leap year, 1-28 otherwise)	Four

Q.2)

P1

Tester Action and Input Data	Expected Outcome	Actual Outcome
<b>Equivalence Partitioning</b>		
v = 5, a = [1,2,3,4,5]	4	4
v = 4, a = [2,5,6,1,3]	-1	-1
v = 5, a = []	-1	-1
<b>Boundary Value Analysis</b>		
V = 1, a = [1,2,3,4,5]	0	0
V = 5, a = [1,2,3,4,5]	4	4
V = 2, a = [1,2,3,4,5]	1	1
V = 4, a = [1,2,3,4,5]	3	3

P2

Tester Action and Input Data	Expected Outcome	Actual Outcome
<b>Equivalence Partitioning</b>		
V = 1, a = [1,2,3,1]	2	2
V = 4, a = [1,2,3]	0	0
V = 2, a = [1]	0	0
V = 1, a = [1]	1	1
V = 5, a = []	0	0
<b>Boundary Value Analysis</b>		
V = 1, a = []	0	0
V = 1, a = [1]	1	1
V = 2, a = [1, 2]	1	1
V = 1, a = [1,1,1,1,1]	5	5
V = -1, a = [-1, 0, -1, -2]	2	2

P3

Tester Action and Input Data	Expected Outcome	Actual Outcome
<b>Equivalence Partitioning</b>		
V = 5, a = [1,2,3,4,5]	4	4
V = 7, a = [1,2,3,4,5]	-1	-1
V = 0, a = [1,2,3,4,5]	-1	-1
V = 1, a = []	-1	-1
<b>Boundary Value Analysis</b>		
V = 1, a = [1,3,5,7,9]	0	0
V = 9, a = [1,3,5,7,9]	4	4

V = 1, a = [1]	0	0
V = 1, a = [3]	-1	-1

P4

Tester Action and Input Data	Expected Outcome	Actual Outcome
<b>Equivalence Partitioning</b>		
A = 5, b = 5, c = 5	0	0
A = 5, b = 5, c = 6	1	1
A = 3, b = 4, c = 5	2	2
A = 1, b = 2, c = 3	3	3
A = 0, b = 5, c = 4	3	3
<b>Boundary Value Analysis</b>		
A = 1, b = 1, c = 1	0	0
A = -1, b = 5, c = 6	3	3

P5

Tester Action and Input Data	Expected Outcome	Actual Outcome
<b>Equivalence Partitioning</b>		
S1 = 'pre', s2 = 'prefix'	true	true
S1 = 'pre', s2 = 'postfix'	false	false
S1 = 'prefix', s2 = 'pre'	false	false
S1 = '', s2 = 'prefix'	true	true
S1 = '', s2 = ''	true	true
<b>Boundary Value Analysis</b>		

S1 = 'prefix', s2 = 'prefix'	true	true
S1 = 'p', s2 = 'prefix'	true	true
S1 = 'prefi', s2 = 'prefix'	true	true

P6

(a) Identify the equivalence classes for the system

1. Equilateral Triangle, all 3 sides are equal
2. Isosceles Triangle, 2 sides are equal
3. Scalene Triangle, no sides are equal
4. Sum of two sides is not greater than the third side
5. Negative or zero side lengths

(b) Identify test cases to cover the identified equivalence classes. Also, explicitly mention which test cases would cover which equivalence class. (Hint: you must need to be ensure that the identified set of test cases cover all identified equivalence classes)

1. A = 5, B = 5, C = 5
2. A = 5, B = 5, C = 6
3. A = 3, B = 4, C = 5
4. A = 1, B = 2, C = 3
5. A = 0, B = 2, C = 5

(c) For the boundary condition  $A + B > C$  case (scalene triangle), identify test cases to verify the boundary.

A = 7, B = 10, C = 5

(d) For the boundary condition  $A = C$  case (isosceles triangle), identify test cases to verify the boundary.

1. A = 5, B = 7, C = 5
2. A = 7, B = 5, C = 7
3. A = 5, B = 5, C = 5

(e) For the boundary condition  $A = B = C$  case (equilateral triangle), identify test cases to verify the boundary.

1.  $A = 6, B = 6, C = 6$
2.  $A = 0.5, B = 0.5, C = 0.5$
3.  $A = 1000, B = 1000, C = 1000$

(f) For the boundary condition  $A^2 + B^2 = C^2$  case (right-angle triangle), identify test cases to verify the boundary.

1.  $A = 3, B = 4, C = 5$
2.  $A = 5, B = 12, C = 13$
3.  $A = 8, B = 15, C = 17$

(g) For the non-triangle case, identify test cases to explore the boundary.

1.  $A = 1, B = 2, C = 3$
2.  $A = 2, B = 2, C = 5$
3.  $A = 10, B = 2, C = 7$

(h) For non-positive input, identify test points.

1.  $A = 0, B = 5, C = 5$
2.  $A = -1, B = 4, C = 4$
3.  $A = 5, B = 0, C = 7$