SOLUTION LAP 1

-SWT301

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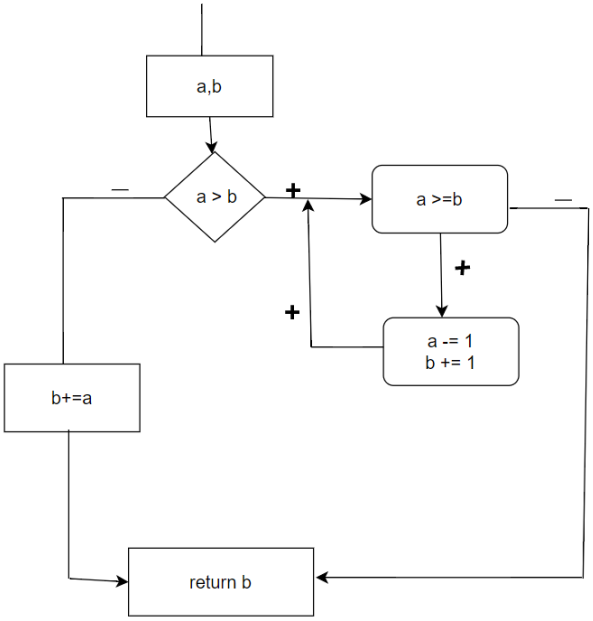
Lớp: SE1701

Question 1:

1, function in python and run test cases

```
1   def func1(a, b):
2       if a > b:
3           while a >= b:
4               a -= 1
5               b += 1
6       else:
7           b += a
8       return b
```

2,



3, TWO test cases and calculate statement coverage and decision coverage for each test case is :

- (a,b) = (2,0) Statement Coverage = 6/8 Decision Coverage = 50%
- (a, b) = (0,1) Statement Coverage = 5/8 Decision Coverage = 50%

4, test cases in order to get 100% decision coverage is :

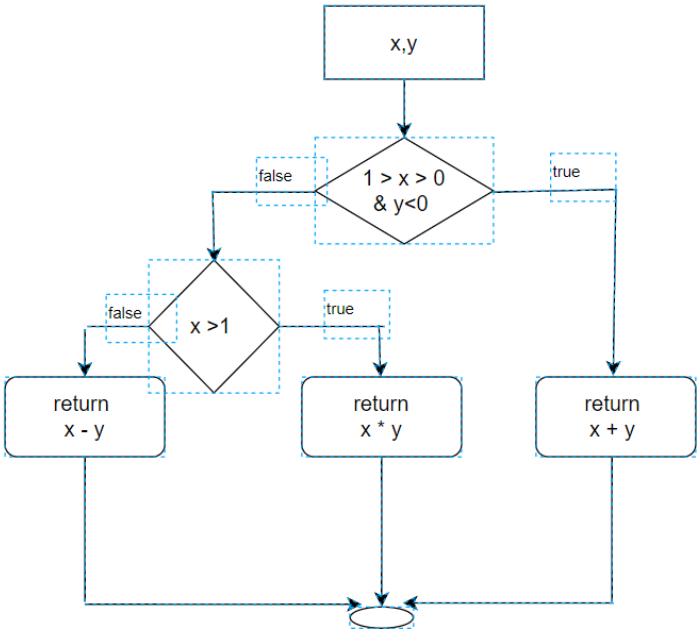
Test case (a,b)	Decision Coverage
(2,0)	50%
(0,1)	50%
	= 100%

Question 2:

1,

```
1  def func2(x,y):
2      if (1 > x > 0) and y < 0:
3          return x+y
4      elif x > 1:
5          return x*y
6      else:
7          return x-y
```

2,



3, TWO test cases and calculate statement coverage and decision coverage for each test case is :

- (x, y) = (0.5 , -1) Statement Coverage = 3/7 Decision Coverage = 33,33%
- (x, y) = (2, 1) Statement Coverage = 4/7 Decision Coverage = 33,33%

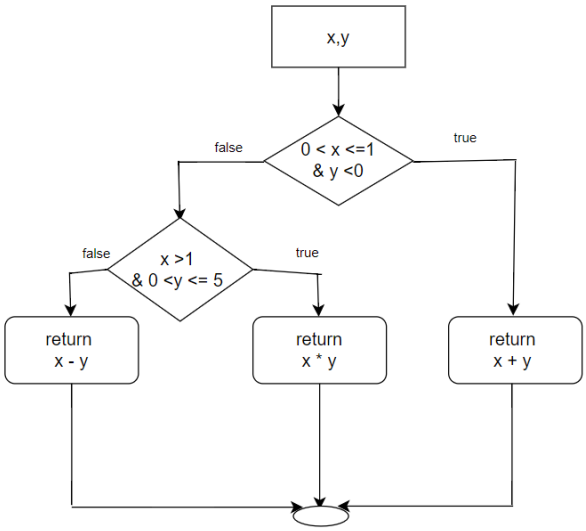
4, test cases in order to get 100% decision coverage is :

Test case (x,y)	Statement Coverage	Decision Coverage
(0.5 , -1)	3/7	≈33,333…%
(2, 1)	4/7	≈33,333….%
(-1, 0)	5/7	≈33,333….%
		100%

Question 3:

1,

1.
```
1  def funct(x,y):
2      if 0 < x <= 1 and y < 0:
3          return x+y
4      elif x > 1 and 0 < y <= 5:
5          return x*y
6      else:
7          return x-y
```
2,



3, TWO test cases and calculate statement coverage and decision coverage for each test case is :

- (x,y) = (1 , -1) Statement Coverage = 3/7 Decision Coverage = 33,33%
- (x,y) = (2, 3) Statement Coverage =5/7 Decision Coverage = 33,33%

4, test cases in order to get 100% decision coverage is :

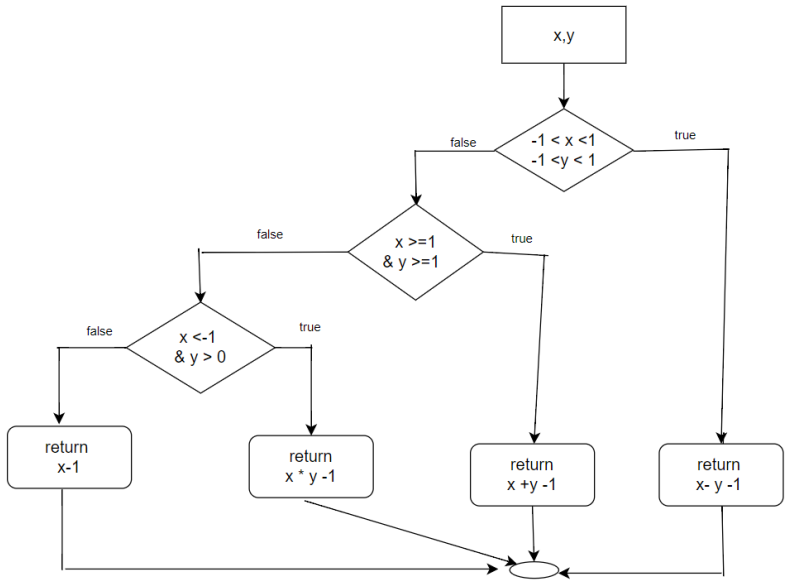
(x,y)	Decision Coverage
(1 , -1)	≈33,33…%
(2, 3)	≈33,33..%
(-2, 6)	≈33,33..%
	100%

Question 4:

1,

```
1  def f(x,y):
2      if -1< x < 1 and -1<y<1 :
3          return  x-y-1
4      elif x >=1 and y>=1 :
5          return x+y-1
6      elif x < -1 and y>0 :
7          return x*y-1
8      else:
9          return x-1
```

2,



3, TWO test cases and calculate statement coverage and decision coverage for each test case is :

- (x,y) = (0 , 0.5) Statement Coverage = 3/9 Decision Coverage = 25%
- (x,y) = (-2,2) Statement Coverage = 5/9 Decision Coverage = 25%

4, test cases in order to get 100% decision coverage is :

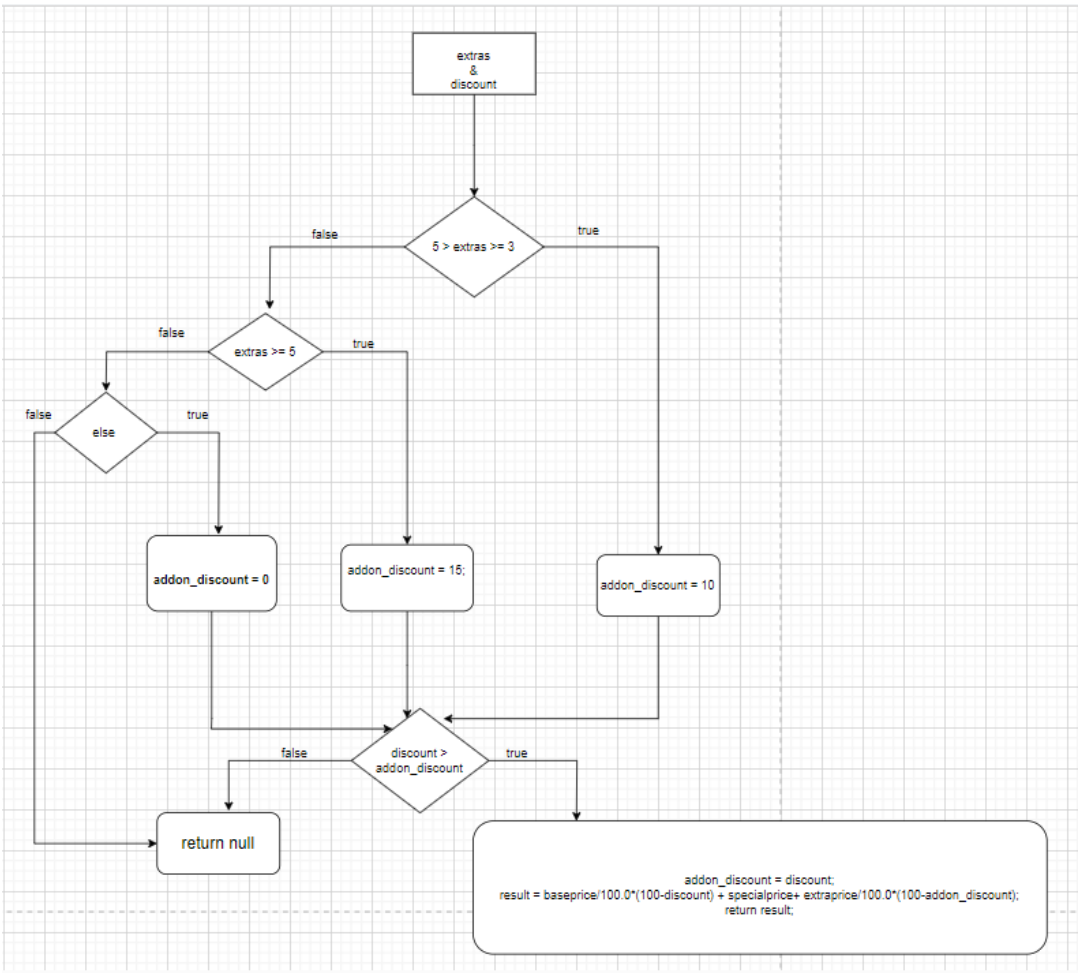
Test case (x, y)	Return value	Decision Coverage
(0 , 0.5)	= -1.5	25%
(-2 , 2)	= -5	25%
(3 , 3)	= 5	25%
(6, -5)	= 5	25%
		= 100%

Question 5:

1,

```python
def calculate_price (baseprice, specialprice, extraprice, discount, addon_discount):
    if extras >=3 and extras < 5:
        addon_discount = 10
    elif extras >= 5:
        addon_discount = 15
    else:
        addon_discount = 0
    if discount > addon_discount:
        addon_discount = discount
        return (baseprice/(100*(100-discount)) + specialprice + extraprice/(100*(100-addon_discount)))
    else:
        return 0
```

2,



(Extras, discount) = (x , y)

3, TWO test cases and calculate statement coverage and decision coverage for each test case is :

- (x,y) = (4, 11) Statement Coverage = 6/12 Decision Coverage = 1/6
- (x,y) = (5, 11) Statement Coverage =7/12 Decision Coverage = 1/6

4, test cases in order to get 100% decision coverage is :

Test case (x, y)	Decision Coverage
4, 11	13,67%
4,9	13,67%
6, 16	13,67%
6,11	13,67%
2, 3	13,67%
2, -1	13,67%
	=100%

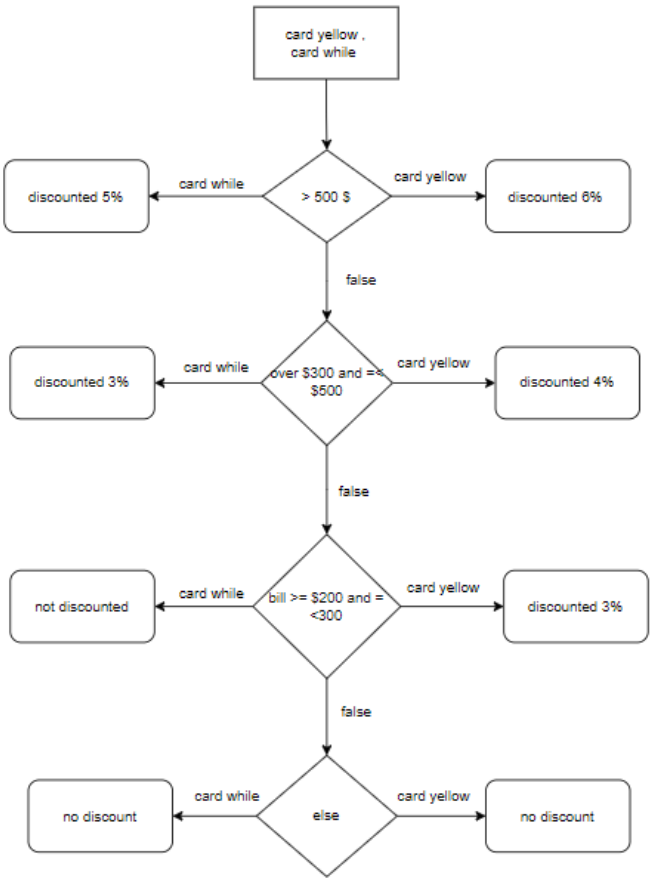
Question 6:

1, y==0 : thẻ vàng

Y == 1 là thẻ trắng

```python
def Card(x, y):
    if x > 500 and y == 0:
        return x - (x * (6 / 100))
    elif x > 500 and y == 1:
        return x - (x * (5 / 100))
    elif 300 < x < 500 and y == 0:
        return x - (x * (4 / 100))
    elif 300 < x < 500 and y == 1:
        return x - (x * (3 / 100))
    elif 200 <= x < 300 and y == 0:
        return x - (x * (3 / 100))
    elif 200 <= x < 300 and y == 1:
        return x
    else:
        return x
```

2,



3, TWO test cases and calculate statement coverage and decision coverage for each test case is :

- (x, y) = (600,0) Statement Coverage = 3/15 Decision Coverage = 1/8 = 12,50%
- (x, y) = (250, 1) Statement Coverage = 8/15 Decision Coverage = 1/8 = 12,50%
- 4, test cases in order to get 100% decision coverage is :

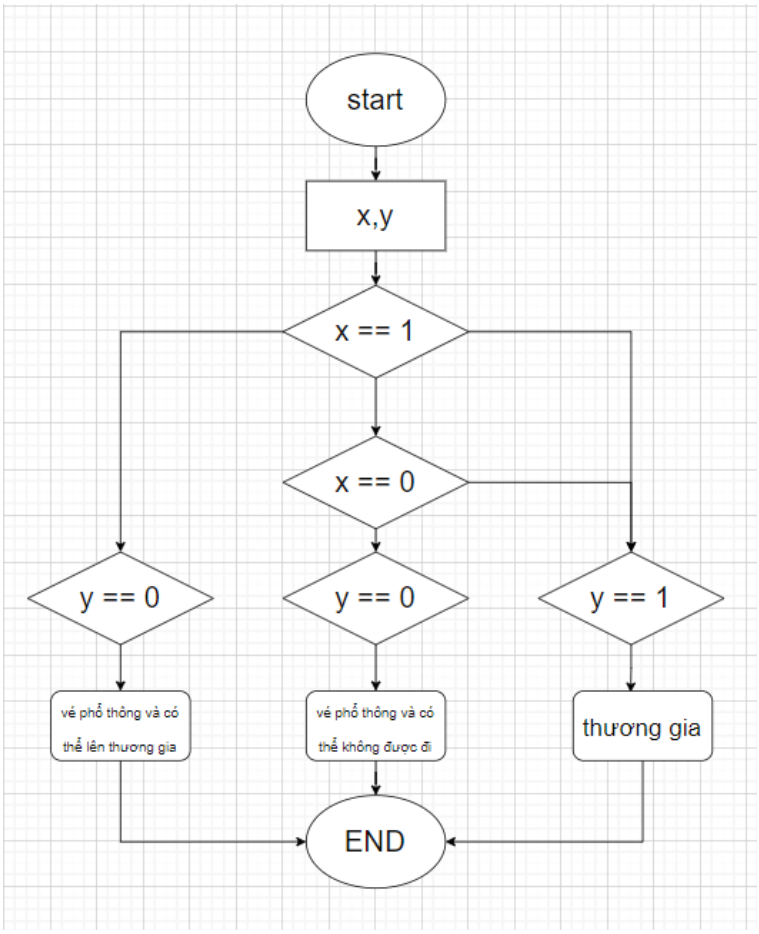
Test cases (x , y)	Return value	Decision Coverage
600,0	Discount 6%	12,50%
600,1	Discount 5%	12,50%
400, 0	Discount 4%	12,50%
400, 1	Discount 3%	12,50%
250 , 0	Discount 3%	12,50%
250, 1	Not Discount	12,50%
100 ,0	Not Discount	12,50%
100,1	Not Discount	12,50%
		=100%

Question 7:

1,

```python
def defind(x, y):
    if x == 0:
        if y == 1:
            print("thuong gia")
        if y == 0:
            print("ve pho thong va co the khong duoc di")
    if x == 1:
        if y == 1:
            print("thuong gia")
        if y == 0:
            print("ve pho thong va co the len thuong gia")
```

2,



3, TWO test cases and calculate statement coverage and decision coverage for each test case is :

- (x,y) = (1,1) Statement Coverage = 5/11
  Decision Coverage =25%
- (x,y) = (0,1) Statement Coverage = 4/11
  Decision Coverage = 25%

-

4, test cases in order to get 100% decision coverage is :

Test case	Value	Decision Coverage
1,1	Vé thương gia	25%
1,0	Vé phổ thông và có thể lên thương gia	25%
0,1	Vé thương gia	25%
0,0	Vé phổ thông và có thể không được đi	25%
		= 100%