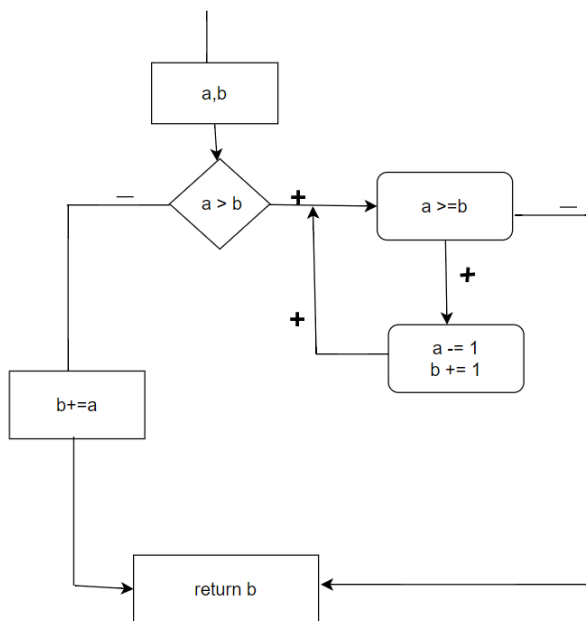


Question 1:

1, function in python and run test cases

```
1      Def func1 (int a, int b):
2          if (a > b) :
3              while (a >= b) :
4                  a -= 1 and b += 1
5          else :
6              b += a
7          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 = 4/7 | Decision Coverage = 50% |
| - (a, b) = (0,1) | Statement Coverage = 5/7 | Decision Coverage = 50% |

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

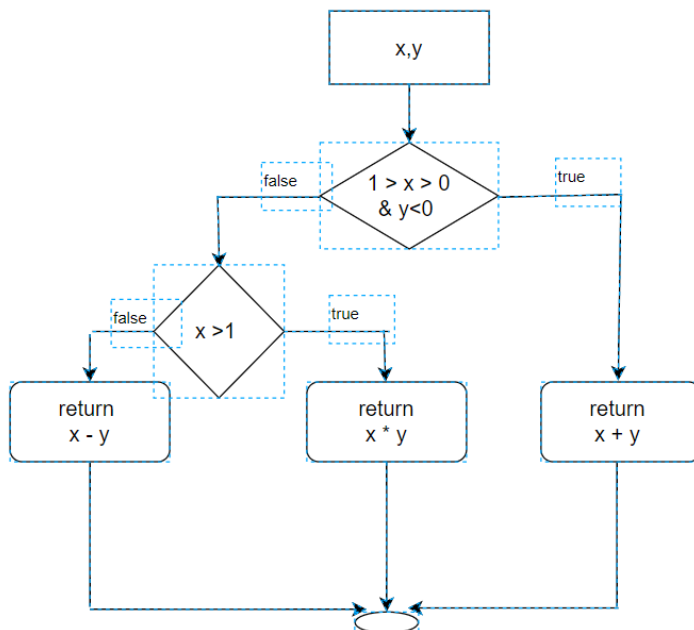
- | | |
|------------------|-------------------------|
| - (a,b) = (2,0) | Decision Coverage = 50% |
| - (a, b) = (0,1) | Decision Coverage = 50% |

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 :

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

- $(x, y) = (2, 1)$
- $(x, y) = (-1, 0)$

Statement Coverage = 4/7
Statement Coverage = 5/7

Decision Coverage = 33,33%
Decision Coverage = 33,33%

Question 3:

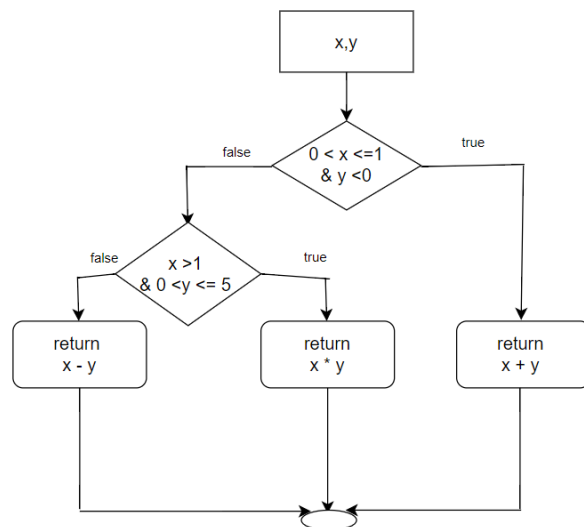
1,

```

1.      Def funct(x,y):
2.          If  $0 < x \leq 1$  and  $y < 0$ :
3.              returns  $x+y$ 
4.          elif  $x > 1$  and  $0 < y \leq 5$ :
5.              returns  $x*y$ 
6.          else:
7.              returns  $x-y$ 

```

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% |

Question 4:

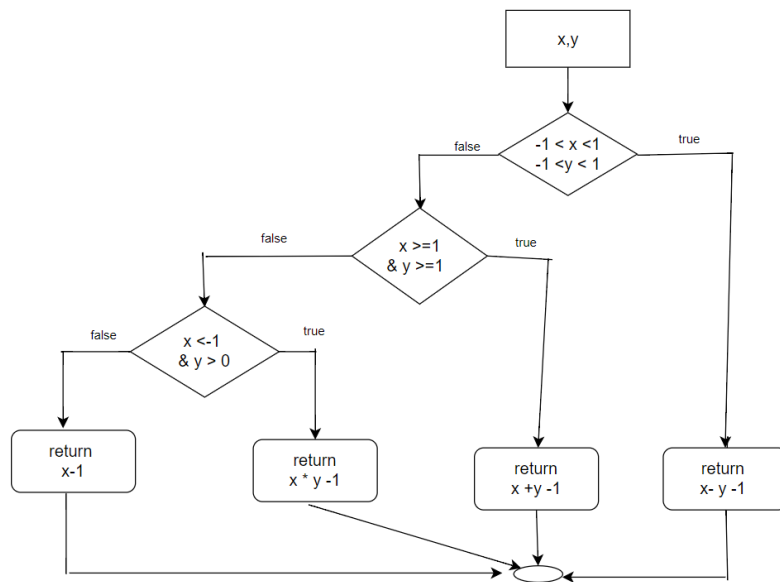
1,

```

1.      Def f(x,y):
2.          If  $-1 < x < 1$  and  $-1 < y < 1$  :
3.              Return  $x-y-1$ 
4.          elif  $x \geq 1$  and  $y \geq 1$  :
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 :

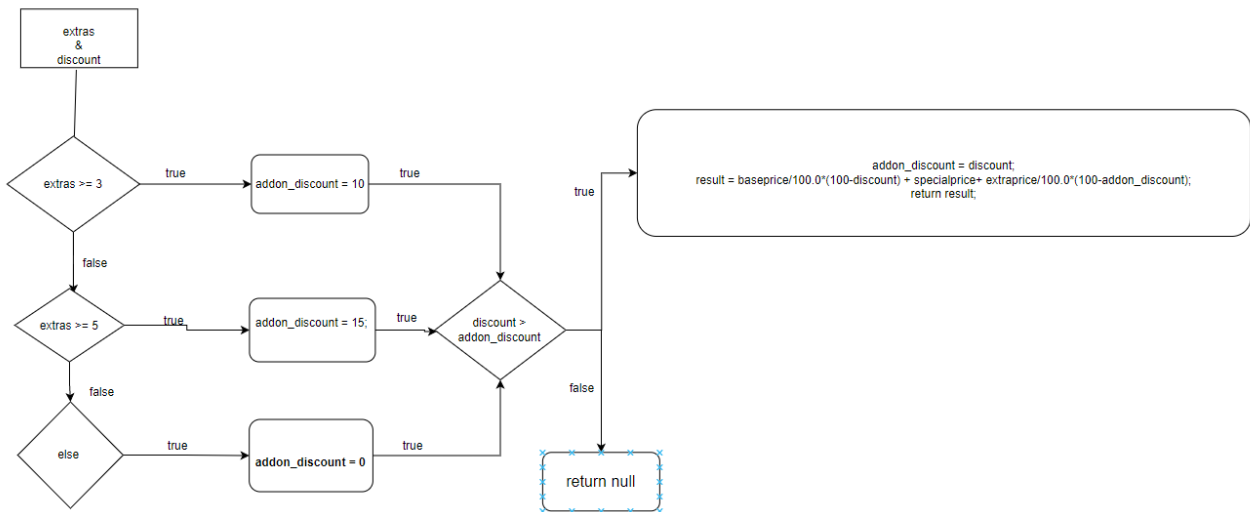
| Test case (x, y) | Return value | Decision Coverage |
|-----------------------|--------------|-------------------|
| (0 , 0.5) | = -1.5 | 25% |
| (-2 , 2) | = -5 | 25% |
| (3 , 3) | = 5 | 25% |
| (6, -5) | = 5 | 25% |

Question 5:

1,

1. Def calculate_price(double baseprice, double specialprice, double extraprice, int extras, double discount):
2. If extras >= 3 :
3. addon_discount = 10
4. elif extras >= 5:
5. addon_discount = 15
6. else :
7. addon_discount = 0
8. if(discount > addon_discount):
9. addon_discount = discount
10. result = baseprice/100.0*(100-discount) + specialprice + extraprice/100.0*(100-addon_discount)
11. return result
12. Else:
13. Return null

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 = 7/13 Decision Coverage = 1/6
- (x,y) = (5, 11) Statement Coverage = 7/13 Decision Coverage = 1/6

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

| Test case (x, y) | Statement Coverage | Decision Coverage |
|-------------------|--------------------|-------------------|
| 4, 11 | 7/13 | 13,67% |

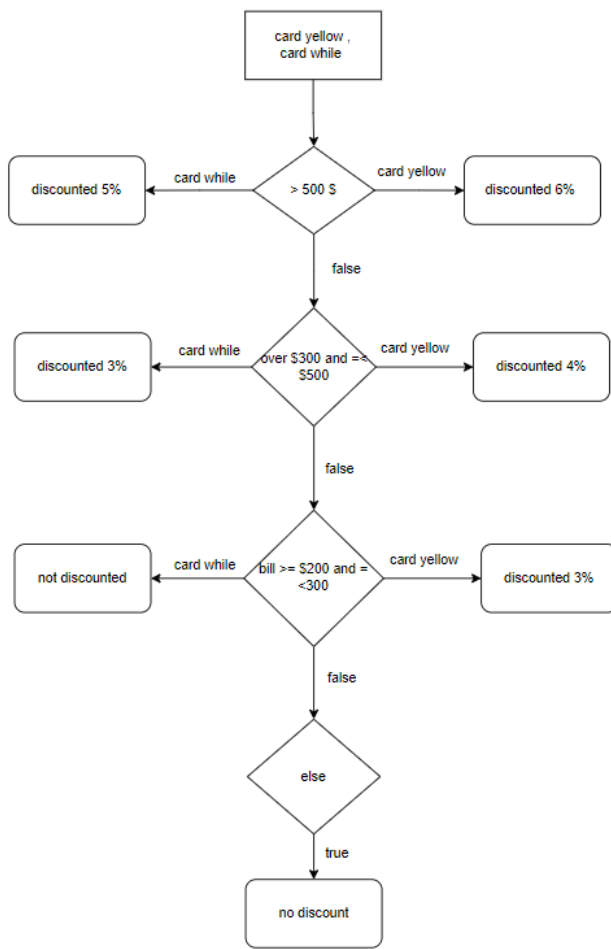
| | | |
|-------|------|--------|
| 4,9 | 6/13 | 13,67% |
| 6, 16 | 8/13 | 13,67% |
| 6,11 | 7/13 | 13,67% |
| 2, 3 | 9/13 | 13,67% |
| 2, -1 | 8/13 | 13,67% |

Question 6:

1,

1. Def Card(x,y):
2. Double resultf
3. Double price
4. If x >500 and y = 0:
5. Resultf = price * 6%
6. Elif x >500 and y = 1
7. Resultf = price * 5%
8. Elif 300<x <500 and y = 0
9. Resultf = price * 4%
10. Elif 300<x <500 and y = 1
11. Resultf = price * 3%
12. Elif 200<x <300 and y = 0
13. Resultf = price * 3%
14. Elif 200<x <300 and y = 1
15. Resultf = price
16. Else
17. Resultf = price

2,



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

- (x, y) = (600\$, yellow) Statement Coverage = 5/17 Decision Coverage = 1/7 = 14,29%
- (x, y) = (250\$, while) Statement Coverage = 10/17 Decision Coverage = 1/7 = 14,29%

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

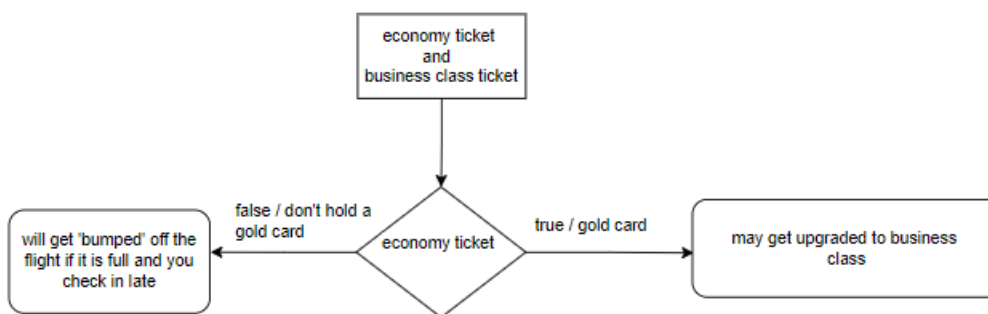
| Test cases (x , y) | Return value | Decision Coverage |
|---------------------|--------------|-------------------|
| 600\$, yellow | Discount 6% | 14,29% |
| 600\$, while | Discount 5% | 14,29% |
| 400 \$, yellow | Discount 4% | 14,29% |
| 400 \$, while | Discount 3% | 14,29% |
| 250 \$, yellow | Discount 3% | 14,29% |
| 250 \$, while | Not Discount | 14,29% |
| 100\$ | Not Discount | 14,29% |

Question 7:

1,

```
1.      Def fun(x):
2.          If x = 0 :
3.              Print (may get upgraded to business class)
4.          Else
5.              Print (will get 'bumped' off the flight if it is full and you check in late)
```

2,



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

- (x,y) = (economy ticket, gold card) Statement Coverage = 3/5
Decision Coverage =50%
- (x,y) = (economy ticket,don't gold card) Statement Coverage = 4/5
Decision Coverage = 50%
-

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

| Test case | Value | Decision Coverage |
|--------------------------------|--|-------------------|
| economy ticket, gold card | may get upgraded to business class | 50% |
| economy ticket,don't gold card | will get 'bumped' off the flight if it is full and you check in late | 50% |