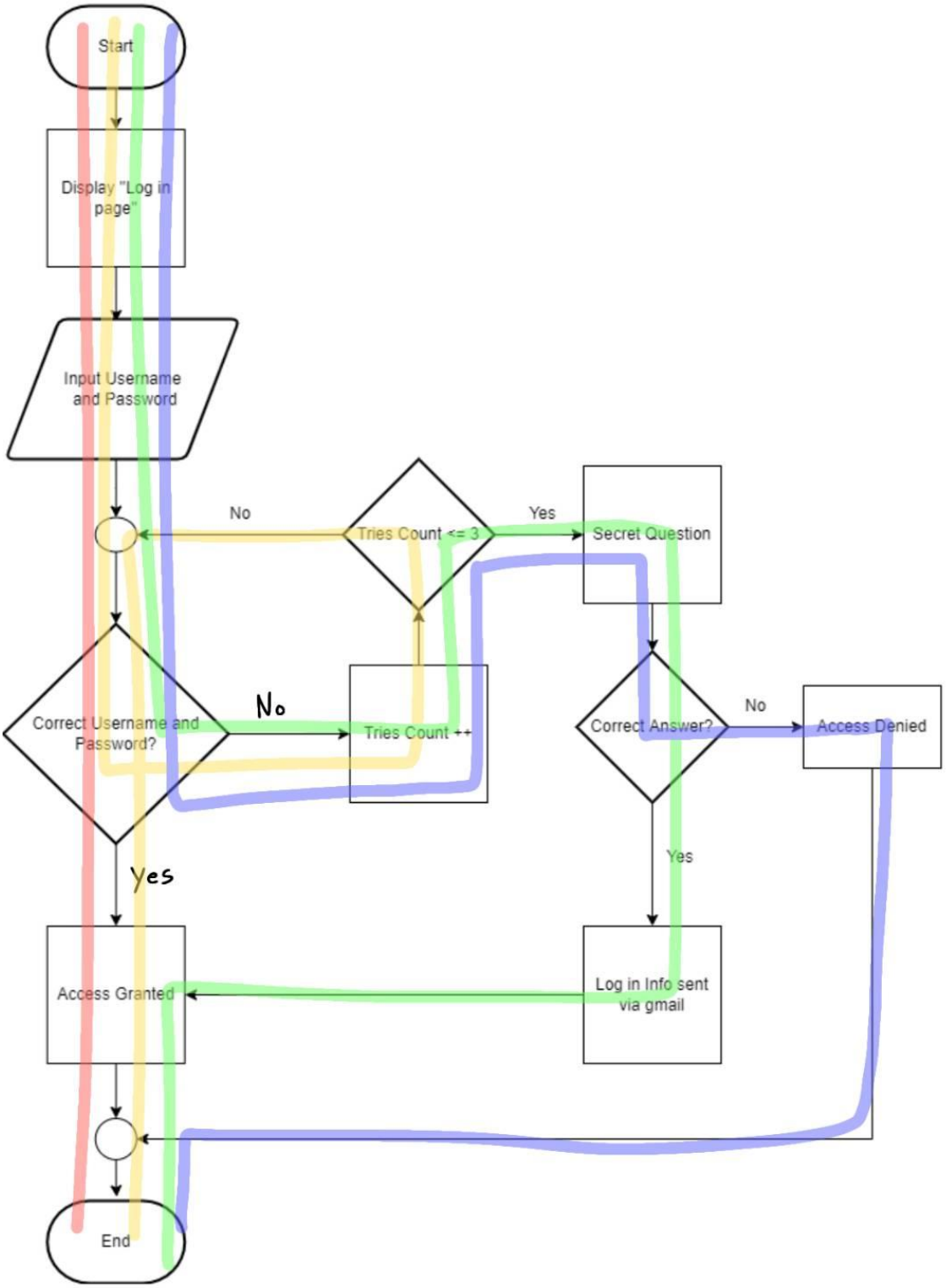
**Scenario 1 - Log in Attempt**

Flowchart:



Pseudocode:

```
        START
1       Display the login page
2       Input username and password
3       If both the username and password are matched
4               Then access is granted
5       Else
6               Try again
7               If trying again and it matches in less than 3 tries
8                       Then access is granted
9               Else
10                      Have to answer the secret question
11                              If the answer the secret question correctly
12                                      Then access is granted
13                              Else
14                                      Access is denied
        END
```

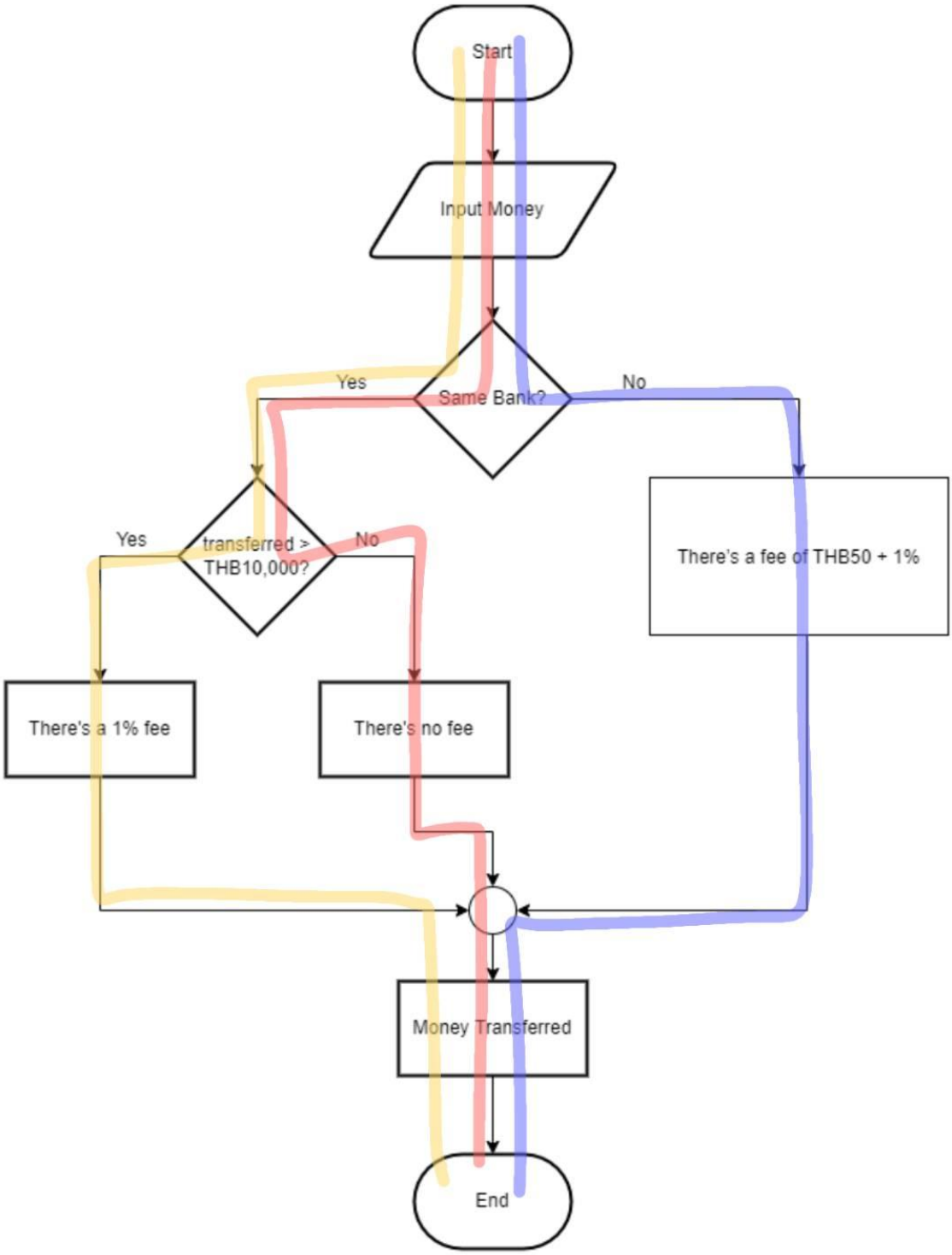
Test Case:

| Test Cases | Inputs | Expected Results | Coverage |
|---|---|---|---|
| 1. When username and password are matched. | - Input the correct username and password | Access Granted | Lines 1 - 4<br>Red Line |
| 2. When username and password don't match but matched within 3 tries. | - Input correct username but wrong password<br>- Input correct password but wrong username<br>- Correct input within 3 tries | Failed to access, but the username and password match within 3 tries. | Lines 1 - 8<br>Yellow Line |
| 3. When username and password | - Input correct username but wrong password | Log in info sent via email, access granted | Lines 1 - 12<br>Green Line |

| | | | |
|---|---|---|---|
| don’t match, but it exceeds 3 tries, and answer the secret question correctly | - Input correct password but wrong username<br>- Incorrect input exceeds 3 tries | | |
| 4. When username and password don’t match, but it exceeds 3 tries, and answer the secret question incorrectly | - Input the correct answer | Access Denied | Lines 1 - 14<br>Blue Line |

**Scenario 2 - Money Transfer**

Flowchart:



Pseudocode:

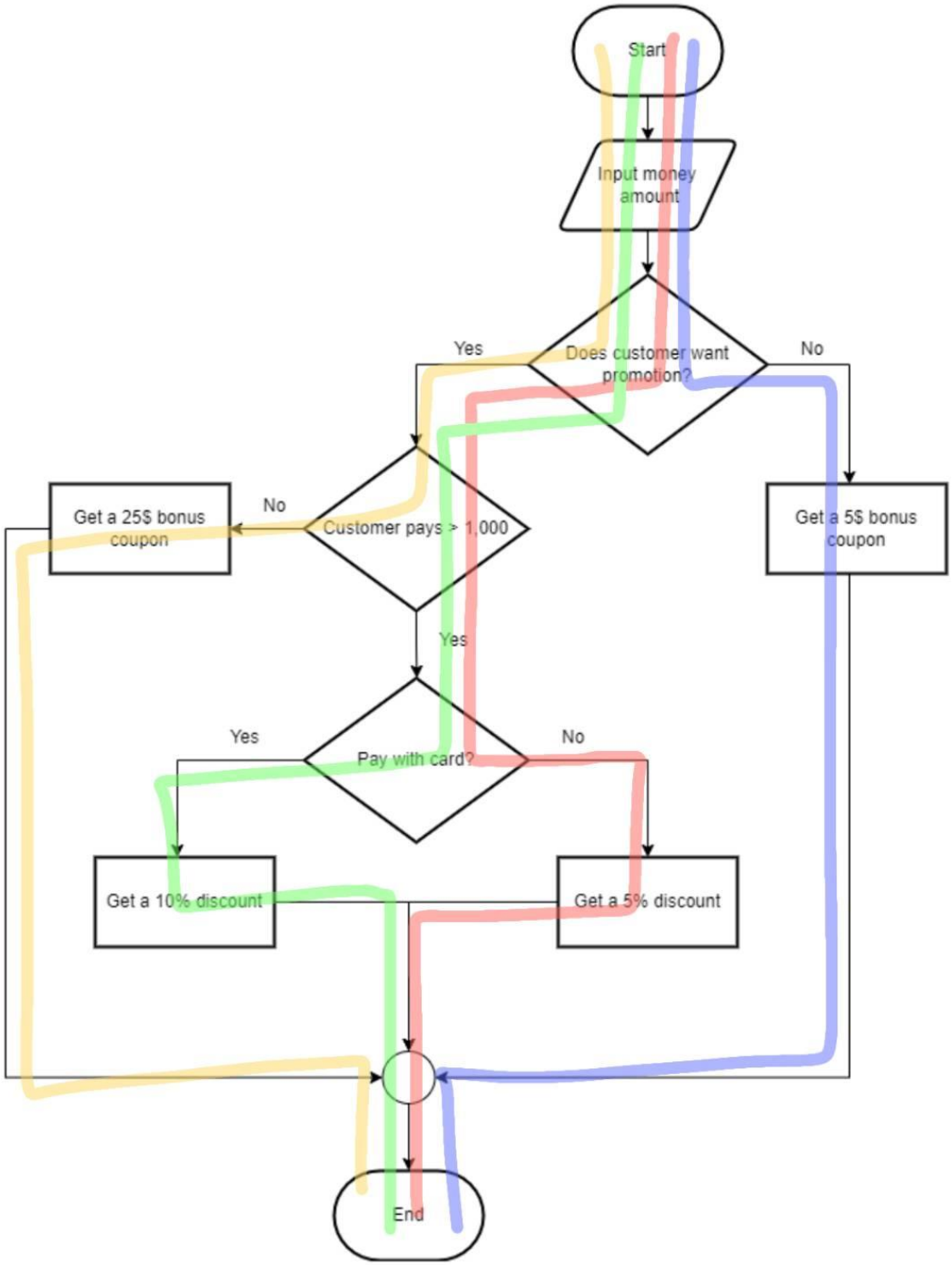
```
        START
1       Input the money
2       If the money is transferred to the same bank
3               If the transferred amount > THB10,000
4                       There's a 1% fee
5               Else
6                       There is no fee
7       Else
8               There's a fee of THB50 + 1%
        END
```

Test Case:

| Test Cases | Inputs | Expected Results | Coverage |
|---|---|---|---|
| 1. When money > THB10,000 is transferred to the same bank | - Input the money<br>- Transferred to the same bank > THB10,000 | - There's a 1% fee | Lines 1 - 4<br>Yellow line |
| 2. When money < THB10,000 is transferred to the same bank | - Input the money<br>- Transferred to the same bank < THB10,000 | - There's no fee | Lines 1 - 6<br>Red line |
| 3. When money is transferred to a different bank | - Input the money<br>- Transferred to a different bank | - There's a fee of THB50 + 1% | Lines 1 - 8<br>Blue line |

**Scenario 3 - Sales promotion**

Flowchart:



Pseudocode:

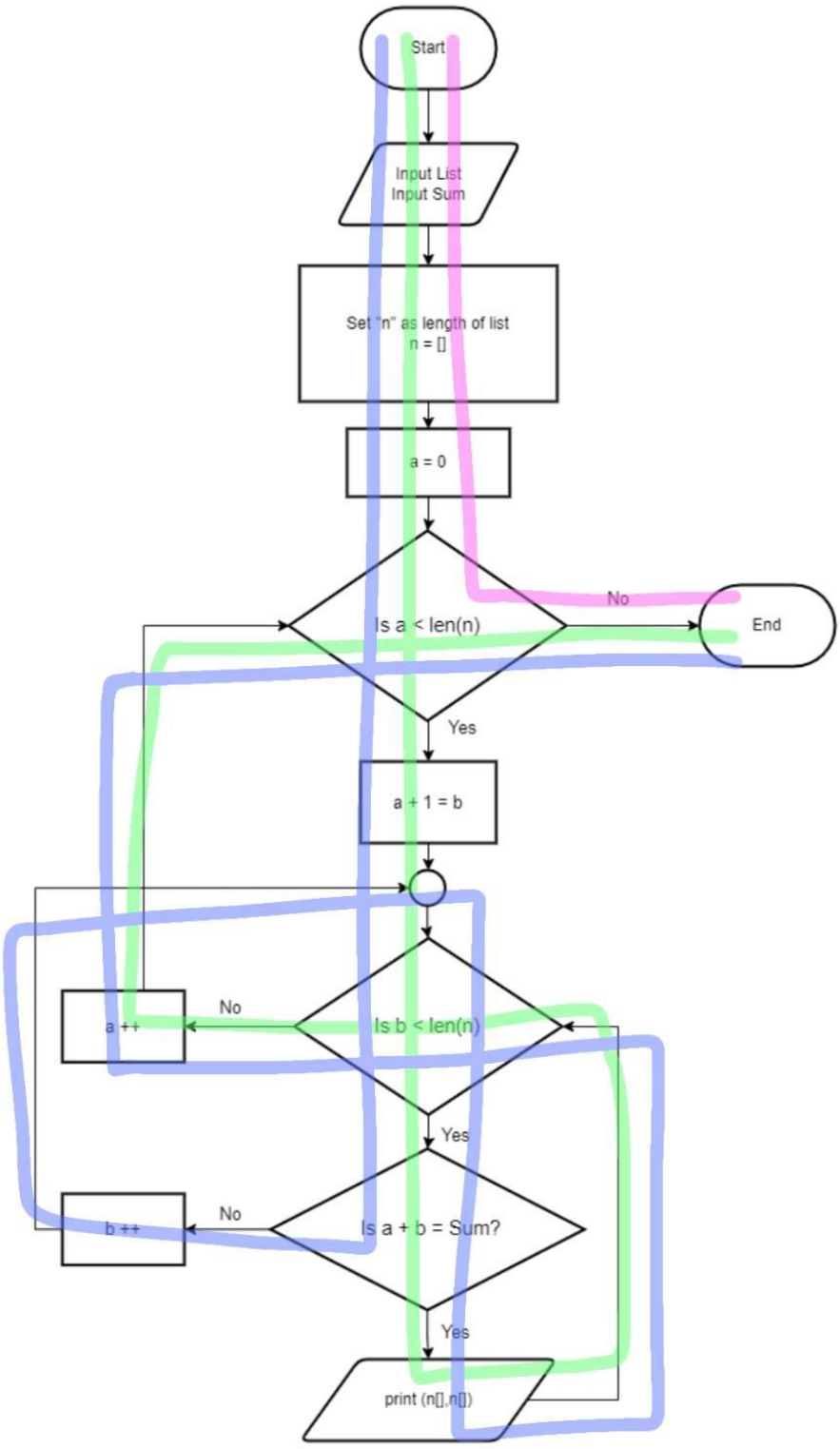
```
        START
1       Input money amount
2       If the customer wants a sales promotion
3               If customer pays > 1,000
4                       If pay with a card
5                               Then they get a 10% discount
6                       Else
7                               They get a 5% discount
8               Else
9                       Then they get a 25$ bonus coupon
10      Else
11              They get a 5$ bonus coupon
        END
```

Test Case:

| Test Cases | Inputs | Expected Results | Coverage |
|---|---|---|---|
| 1. When customer wants a promotion and pays > 1,000 with a card | - Input the money amount<br>- Wants a promotion<br>- Pays > 1,000 and with a card | They get a 10% discount | Lines 1 - 5<br>Green line |
| 2. When customer wants a promotion and pays > 1,000 with no card | - Input the money amount<br>- Wants a promotion<br>- Pays > 1,000 and with no card | They get a 5% discount | Lines 1 - 7<br>Red line |
| 3. When customer wants a promotion and pays < 1,000 | - Input the money amount<br>- Wants a promotion<br>- Pays < 1,000 | They get a 25$ bonus coupon | Lines 1 - 9<br>Yellow line |
| 4. When customer doesn't want a promotion | - Input the money amount<br>- Doesn't want a promotion | They get a 5$ bonus coupon | Lines 1 - 11<br>Blue line |

**Scenario 4 - Find all pairs of numbers in a given list that sum to a given value**

Flowchart:



Pseudocode:

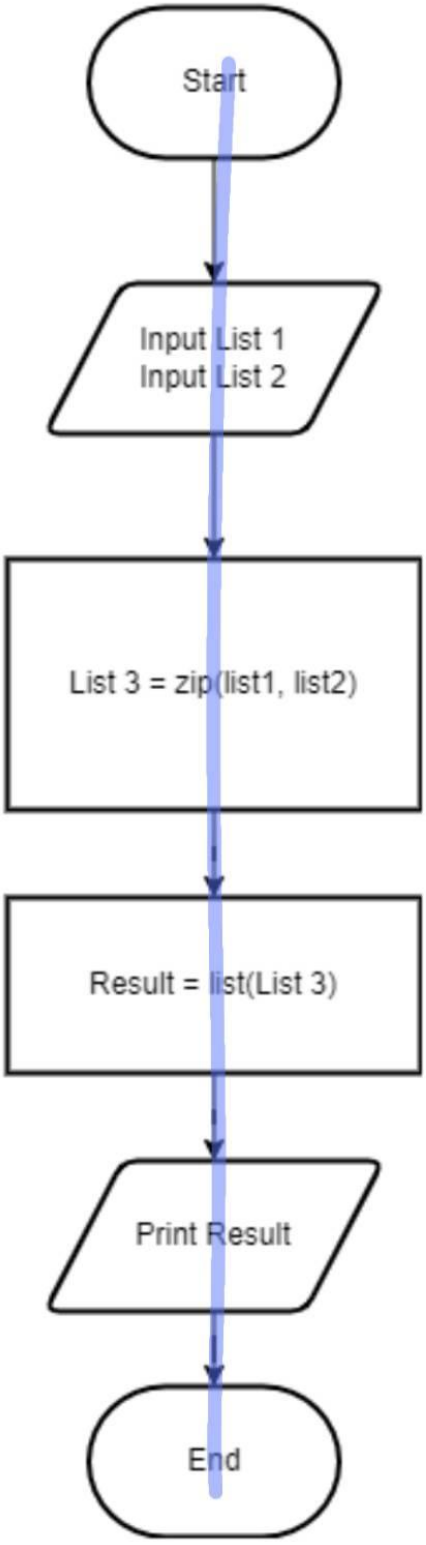
```
START
1       Input the list
2       Input the sum
3       Set "n" as the length of list
4       n = []
5       a = 0
6       For a in range of (0,n)
7               For b in range of (a + 1, n)
8                       If the sum of a and b is equal to the sum
9                               Then print (n[], n[])
END
```

Test case:

| Test Cases | Inputs | Expected Results | Coverage |
|---|---|---|---|
| 1. When it can be paired with duplicate numbers in the list | - Input list and sum<br>- Ex: [1,2,3,4,5,6,7]<br>Sum = 8 | [1,7], [2,6], [3,5] | Lines 1 - 7<br>Green line |
| 2. When it can be paired without duplicate numbers in the list | - Input list and sum<br>- Ex: [1,2,7,7]<br>Sum = 8 | [1,7] | Lines 1 - 7<br>Blue line |
| 3. When it can't be paired | - Input list and sum<br>- Ex: [2,4,5]<br>Sum = 8 | Empty set [] | Lines 1 - 7<br>Pink line |

**Scenario 5 - Combine two lists by alternatingly taking elements**

Flowchart:



Pseudocode:

START
1 Input list 1
2 Input list 2
3 List 3 = zip(list1, list2)
4 Result = list(List 3)
5 print(List 3)
END

Test Case:

| Test Cases | Inputs | Expected Results | Coverage |
|---|---|---|---|
| 1. When both the lists have the same length | - List 1 = [1,2,3]<br>- List 2 = [a,b,c] | List 3 = [1,a,2,b,3,c] | Lines 1 - 5<br>Blue line |
| 2. When list 1 is longer than list 2 | - List 1 = [1,2,3,4]<br>- List 2 = [a,b,c] | List 3 = [1,a,2,b,3,c,4] | Lines 1 - 5<br>Blue line |
| 3. When list 2 is longer than list 1 | - List 1 = [1,2,3]<br>- List 2 = [a,b,c,d] | List 3 = [a,1,b,2,c,3,d] | Lines 1 - 5<br>Blue line |