

Name : Sohaib Sarosh Shamsi

Class : BCS 1-E

Roll No. : 21K-3278

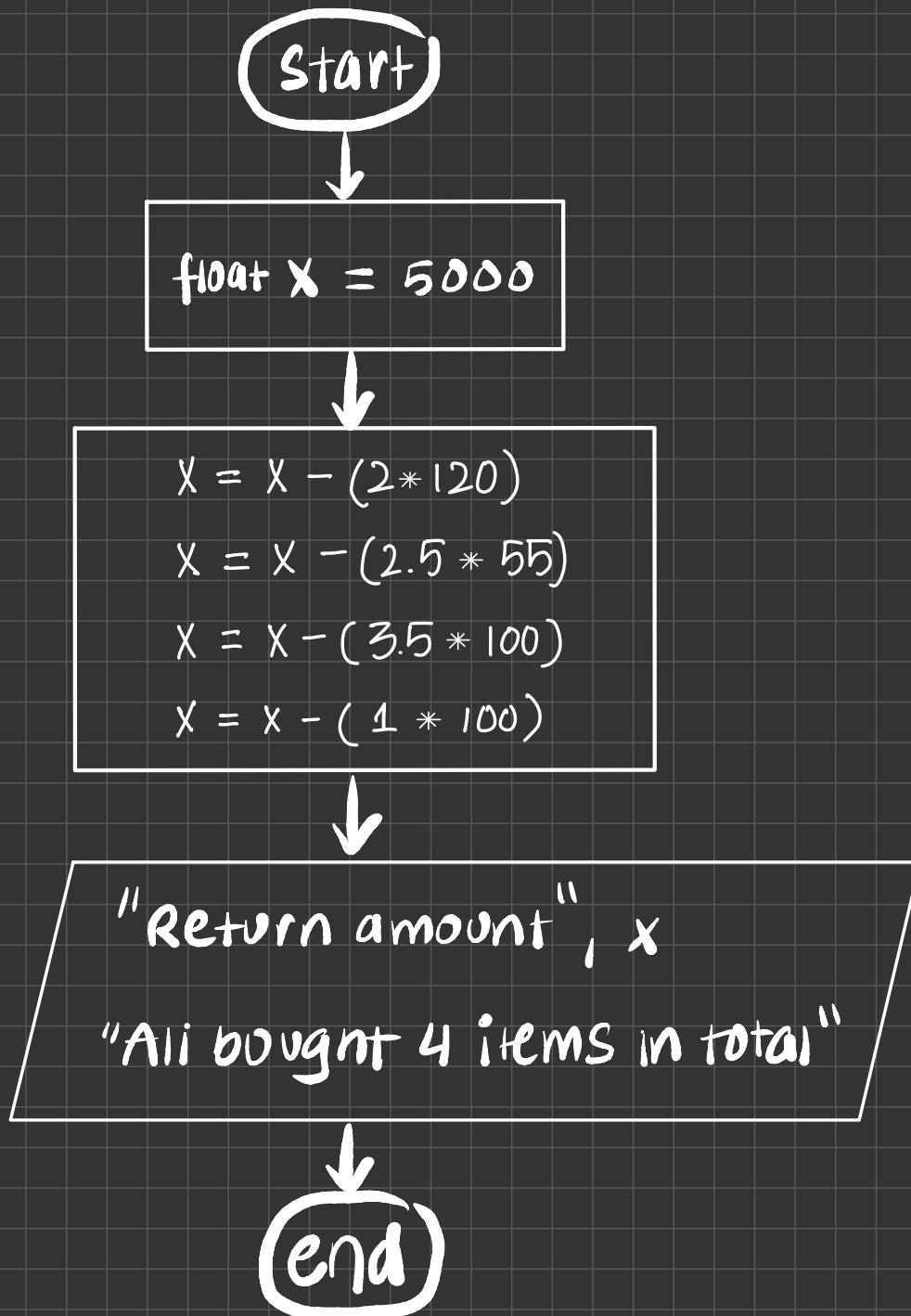
Problem: 1

A sheep in a jungle is hungry. He walks into a corn meadow (a kind of field), trying to get the biggest ear of corn. What he would do is to get the first ear, then walk forward. Whenever he sees a bigger ear, he drops the one from his mouth, and gets the bigger one. He keeps on walking, picking, dropping, and snatching, until he is out of the meadow, when he has got the biggest ear. Provide the algorithm/pseudocode concerning the scenario.

1. Pick the first ear.
2. Walk forward.
3. If the sheep is out of meadow, go to line 10
4. Compare the size with the following ear.
5. If the size of following ear is greater, go to line 7.
6. Else go to line 2.
7. Drop the current ear.
8. Pick the following ear.
9. Go to line 2.
10. End

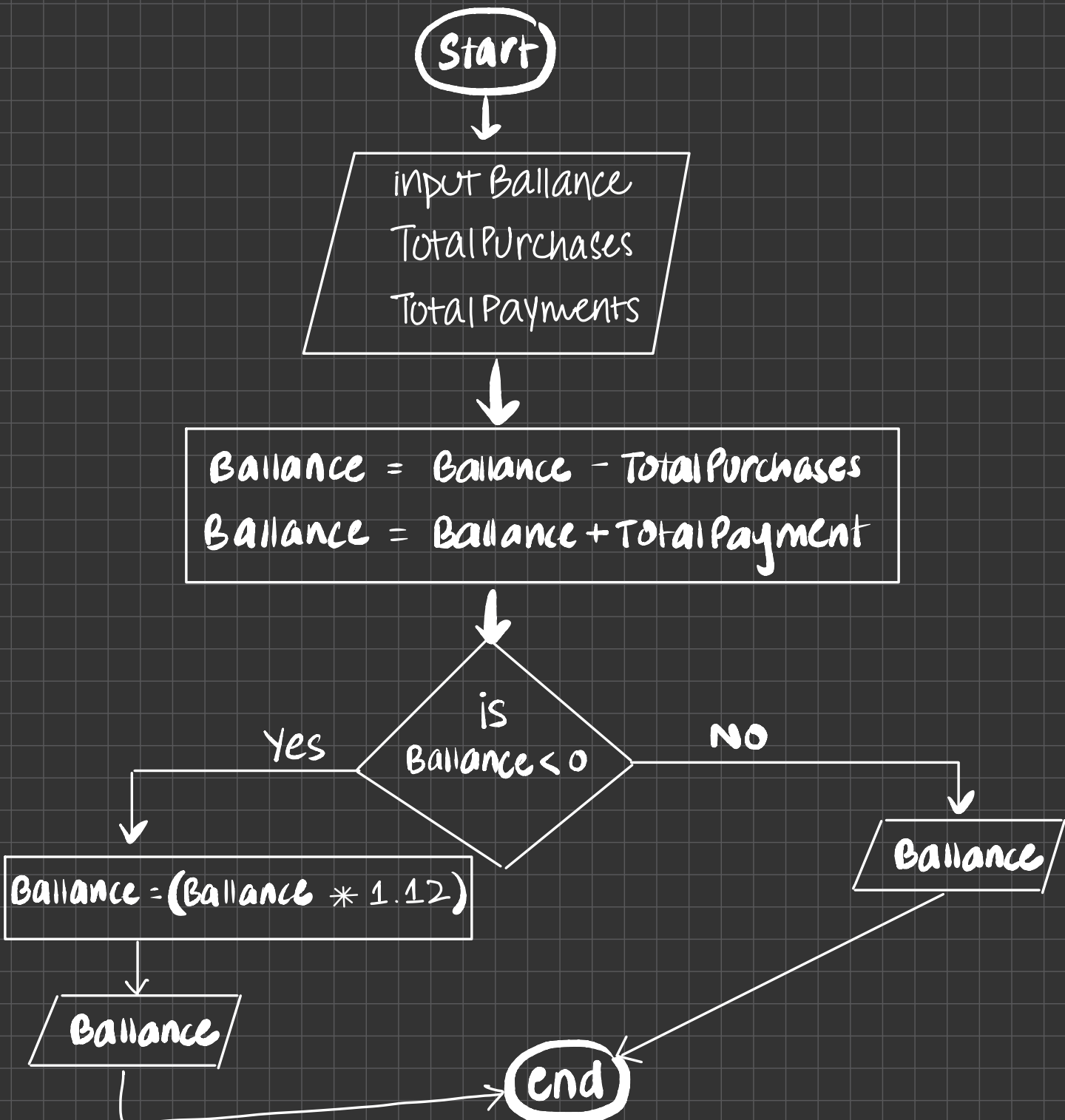
Problem: 2

Ali goes to market for buying milk and fruits. He is having a currency of Rs.5000 with him for marketing. From a shop, he purchases 2.0 kg milk priced Rs.120.0 per kg, 2.5 kg Mango priced Rs.55.0 per kg, 3.5 kg peach priced Rs.100.0 per kg, and 1.0 kg Tomato priced Rs.75 per kg. He gives the currency of Rs.5000 to the shopkeeper. Find out the amount shopkeeper will return to Ali and also tell the total item purchased by drawing the appropriate flowchart.



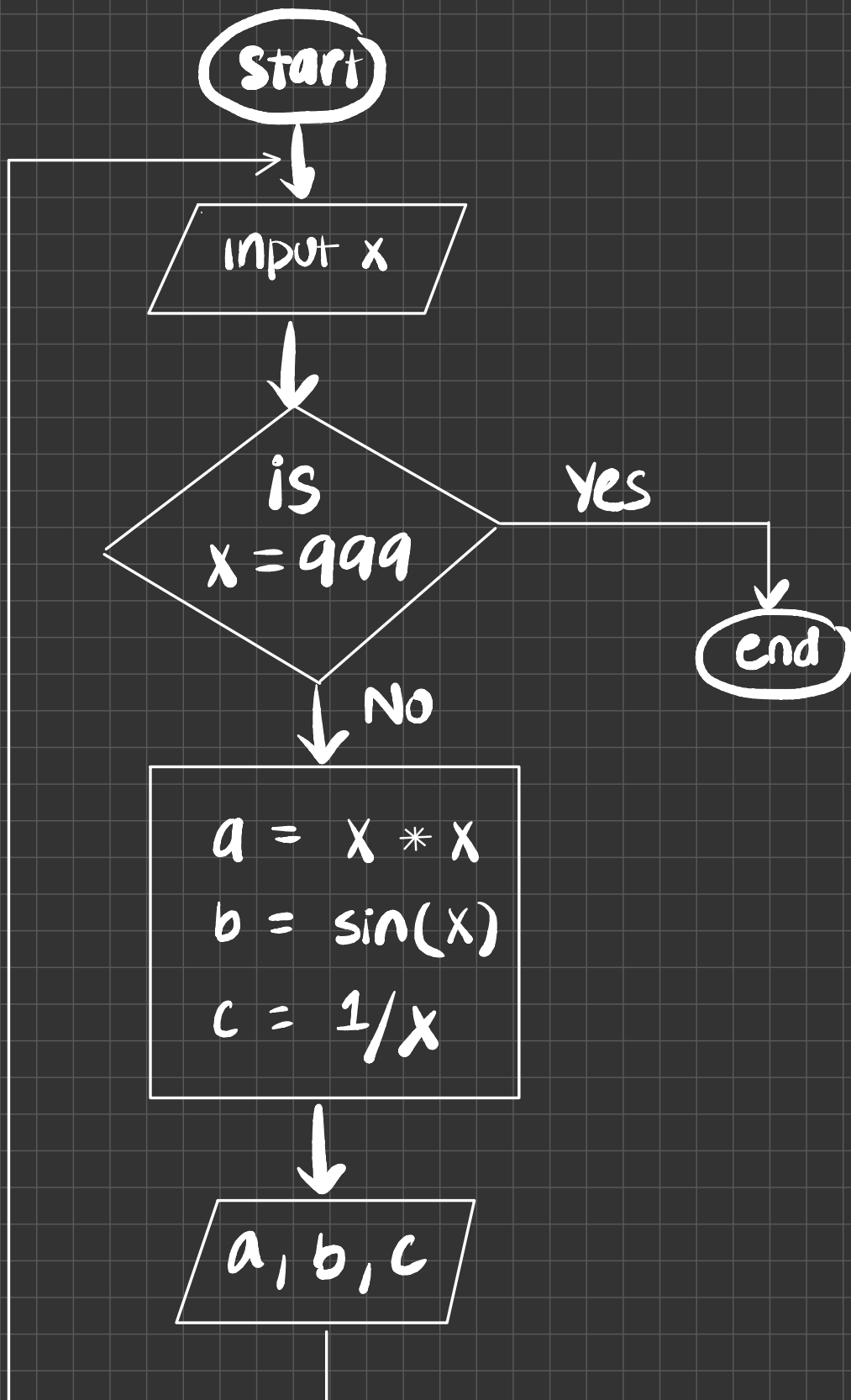
Problem: 3

A system lets you input your current credit card balance, the total dollar amount of new purchases, and the total amount of all payments. The algorithm computes the new balance, including a 12% interest charge on any unpaid balance. You are required to provide a flowchart to compute the new balance.



Problem: 4

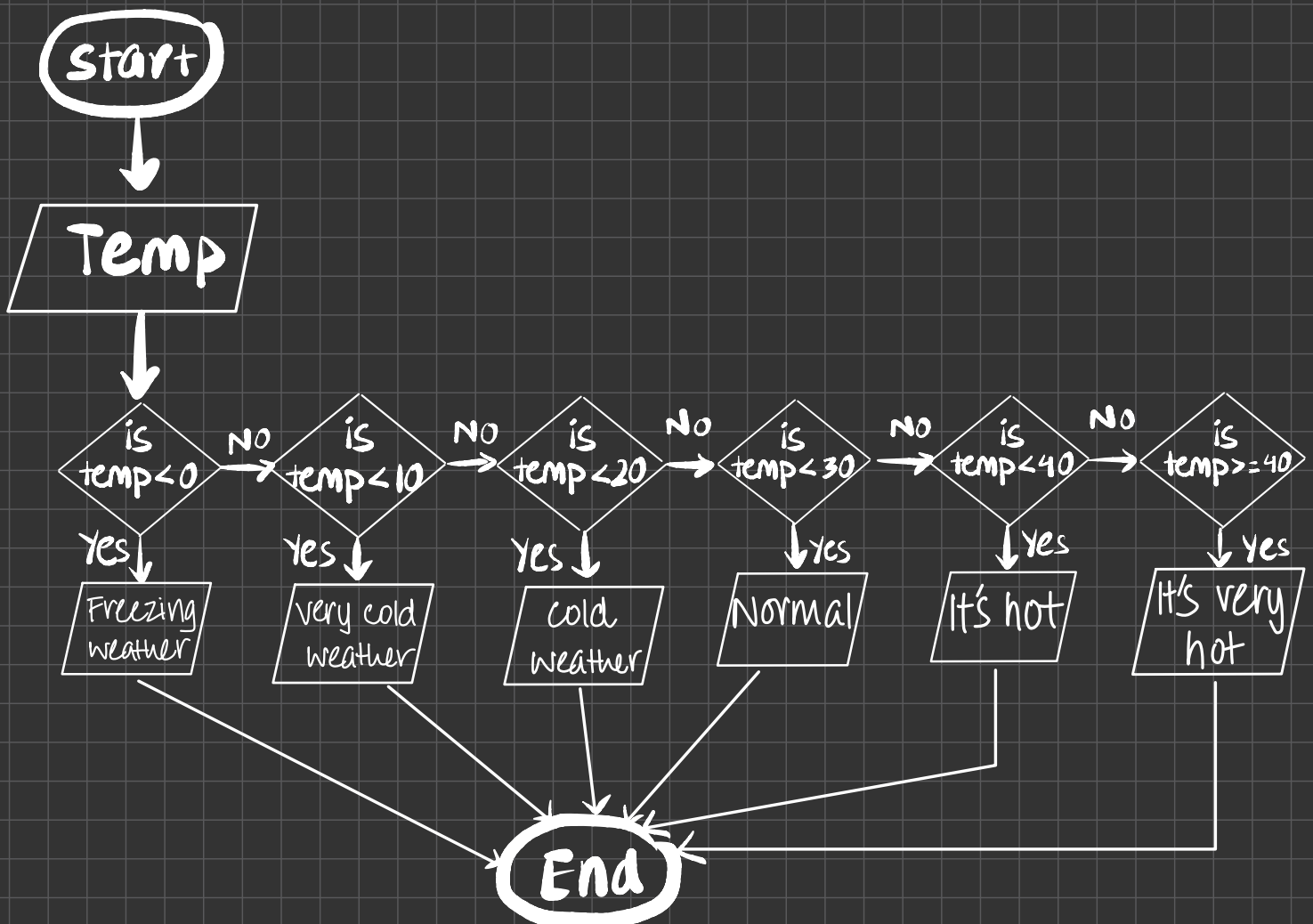
Draw a flowchart in which a calculator gets as an input x and output three values x^2 , $\sin x$, and $1/x$. It keeps on going until the input value of x is equal to 999, when the program terminates.



Problem: 5

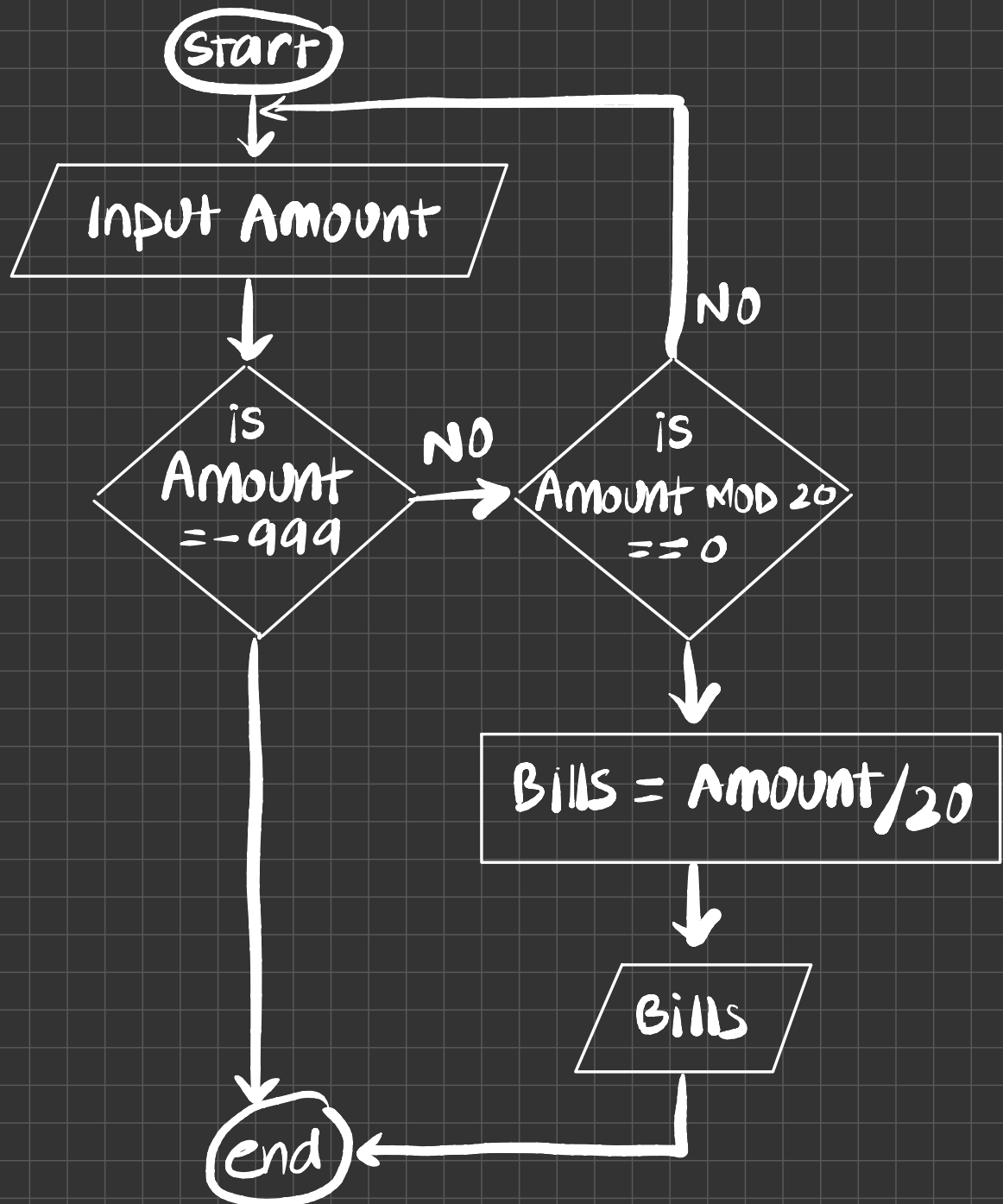
Provide a flowchart of a system that reads temperature in centigrade and display a suitable message according to temperature state below:

- Temp < 0 then Freezing weather
- Temp 0-10 then Very Cold weather
- Temp 10-20 then Cold weather
- Temp 20-30 then Normal in Temp
- Temp 30-40 then It's Hot
- Temp ≥ 40 then Its Very Hot



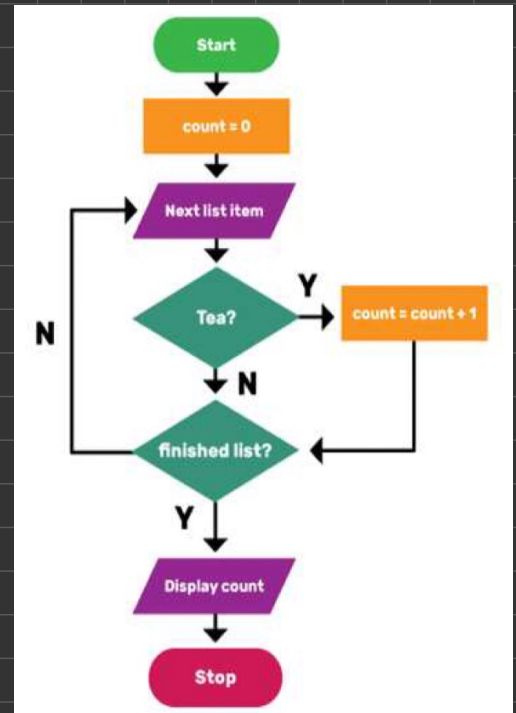
Problem: 6

A program that will dispense money from an ATM machine. Continue to request a withdrawal amount from the user until they enter -999. If the amount entered is not evenly divisible by twenty, output the message "You must enter multiples of twenty only" otherwise calculate and output the number of twenty dollar bills you will be dispensing. List the necessary variables for this program. Also draw PAC, IPO and flowchart.

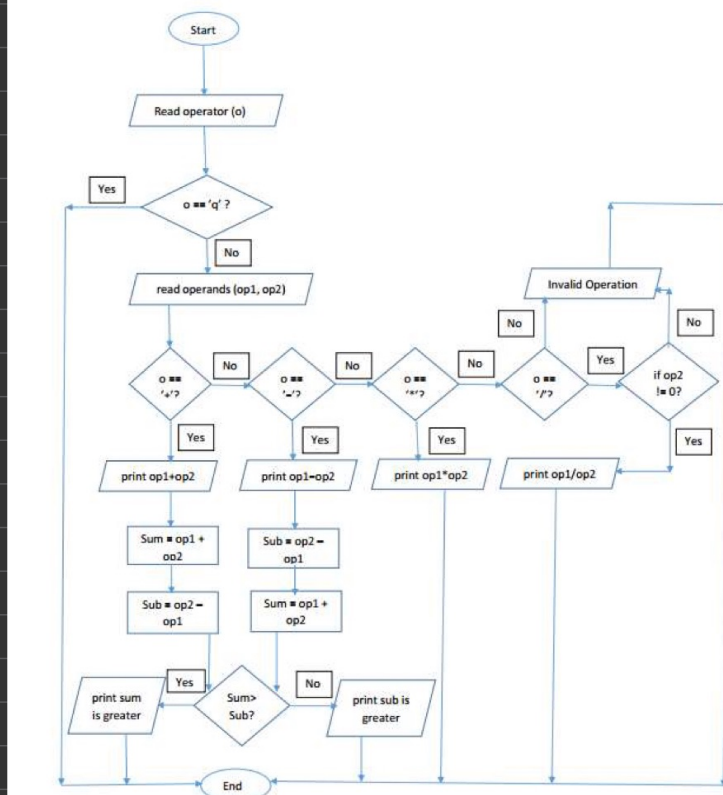


Problem: 7 (Convert the below flow chart into Algorithm/Pseudocode)

1. $count = 0$
2. Input NextListItem
3. If NextListItem == "Tea"
4. $count = count + 1$
5. Else if NextListItem == "Finished line"
6. display count
7. Else go to line 2



Problem: 8 (Convert the below flow chart into Algorithm/Pseudocode)



- 1 Input operator
- 2 If operator == 'q' go to line 17
- 3 Else Input operands (OP1 , OP2)
- 4 If operator == '+' then print OP1 + OP2 and go to line 12
- 5 Elself operator == '-' then print OP1 - OP2 and go to line 12
- 6 Elself operator == '*' then print OP1 * OP2
- 7 Elself operator == '/' the go to line 9
- 8 Elself Print "Invalid operation"
- 9 If OP2 == '0' then Print "Invalid operation"
- 10 Else Print OP1 / OP2
- 11 go to line 1
- 12 SUM = OP1 + OP2
- 13 SUB = OP2 - OP1
- 14 If SUB > SUM print "sum is greater"

15 Else print "sub is greater"

16 Go to line 1

17 End