



CS1002 – Programming Fundamentals

Assignment # 1

Max Points: 80

Due Date: Sunday, Sep 26, 2021, 11:59 p.m.

Carefully read the following instructions!

- It should be clear that your assignment would not get any credit if the assignment is submitted after the due date.
- Strict actions will be taken if submitted solution is copied from any other student.
- For any query, feel free to email at: sobia.iftikhar@nu.edu.pk
- If you find any confusion in assignment (Question statement), please consult before the deadline. After the deadline no queries will be entertained in this regard.
- **Submission:** Submission will only be accepted through GOOGLE CLASSROOM. You can scan or even take pictures of all your paper work. You are required to submit a doc. file containing all your paper work. Before submission, rename your doc. file as your ID “**KXX-XXXX**”.

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.

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

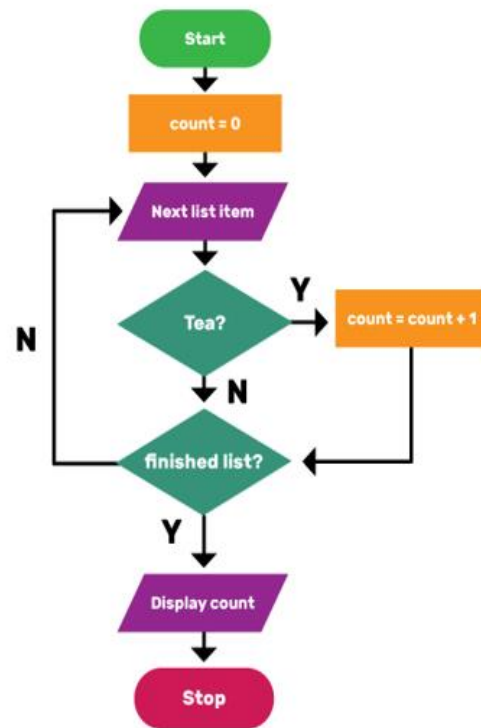
Provide a flowchart of a system that reads temperature in centigrade and display a suitable message according to temperature state below:

- 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

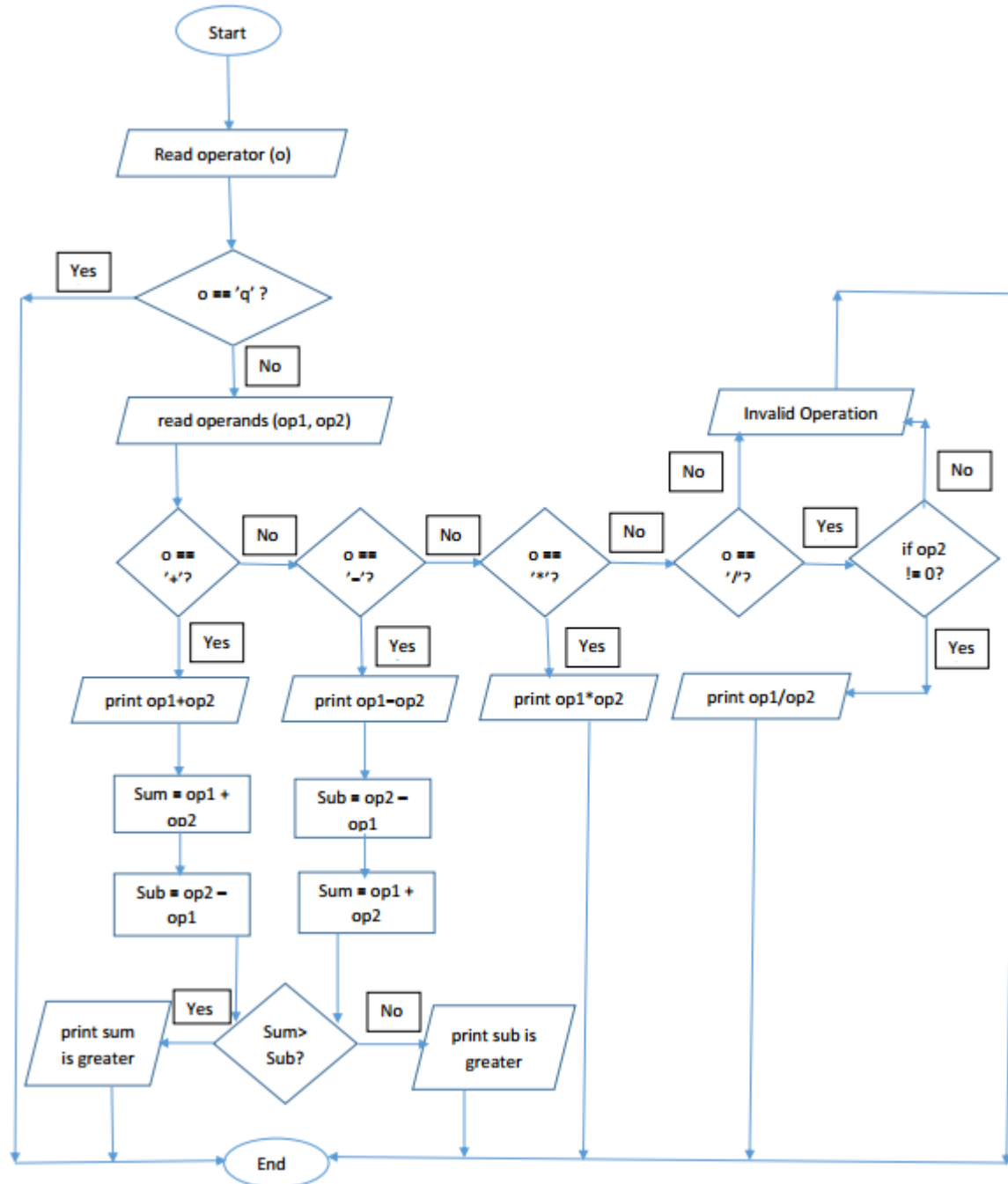
Problem: 6

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)



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



XXXXX Good Luck XXXXX