**CSD 1133 – 2021S**

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Assignment #2 ---------------------------------------------------------------------------------------------------------**

Design a **Flowchart and Pseudocode** for the following Problem Late Assignments will not be accepted or marked!

**Tip, Tax, and Total:**

Design a program that calculates the total amount of a meal purchased at a restaurant. The program should ask the user to enter the charge for the food, and then calculate the amount of a 15 percent tip and 7 percent sales tax. Display each of these amounts and the total.

**Pseudocode:**

// Declare global constant for tip and sales tax rate

Constant Real tip\_rate = 0.15

Constant Real sales\_tax\_rate = 0.07

// Main module

Module main()

// Declare local variables for charge amount, tip amount, sales tax amount and total amount

Declare Real charge\_amount

Declare Real tip\_amount

Declare Real sales\_tax\_amount

// Get the charge amount

Call getChargeAmountModule(charge\_amount)

// Calculate the tip amount

Call calculateTipModule(charge\_amount, tip\_amount)

// Calculate the sales tax amount

Call calculateSalesTaxModule(charge\_amount, sales\_tax\_amount)

// Calculate and display total amount

Call calculateDisplayTotal(charge\_amount, tip\_amount, sales\_tax\_amount)

End Module

// The getChargeAmountModule asks user input for charge amount for the food and stores in

// the reference variable charge\_amount

Module getChargeAmountModule(Real Ref charge\_amount)

Display "Enter the charge amount for food: "

Input charge\_amount

End Module

// The calculateTipModule calculates tip amount and store the value in reference variable

// tip\_amount

Module calculateTipModule(Real charge\_amount, Real Ref tip\_amount)

Set tip\_amount = charge\_amount \* tip\_rate

End Module

// The calculateSalesTaxModule calculates the sales tax amount and stores the value in reference variable sales\_tax\_amount

Module calculateSalesTaxModule(Real charge\_amount, Real Ref sales\_tax\_amount )

Set sales\_tax\_amount = charge\_amount \* sales\_tax\_rate

End Module

// The calculateDisplayTotal calculates and display the total amount along with charge amount, tip amount and sales tax amount

Module calculateDisplayTotal(Real charge\_amount, Real tip\_amount, Real sales\_tax\_amount)

Declare Real total\_amount

Set total\_amount = charge\_amount + tip\_amount + sales\_tax\_amount

Display "The charge amount for food is: " + charge\_amount

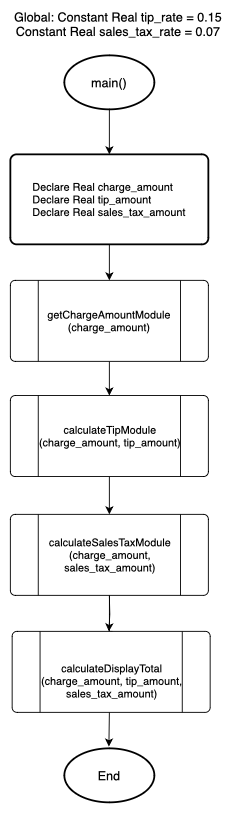
Display "The tip amount for food is: " + tip\_amount

Display "The sales tax amount for food is: " + sales\_tax\_amount

Display "The total amount for food is: " + total\_amount

End Module

**Flowchart:**



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Figure 1: Main module

A diagram of a flowchart

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Figure 3: Tip calculation module

Figure 2: Get charge amount module.

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Description automatically generated

Figure 5: Total calculation and display all values module.

Figure 4: Sales Tax calculation module