

## CSD 1133 – 2021S

Student ID: 901142

Student Name: Roshan Shrestha

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:

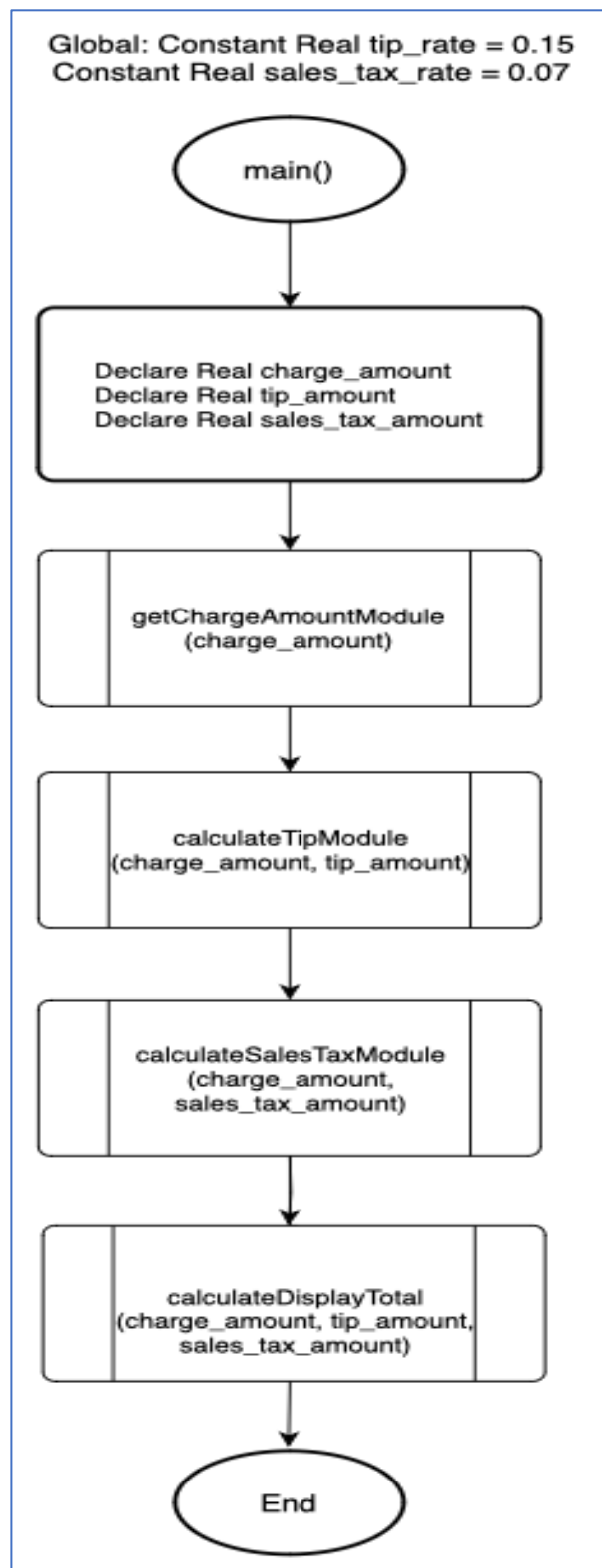


Figure 1: Main module

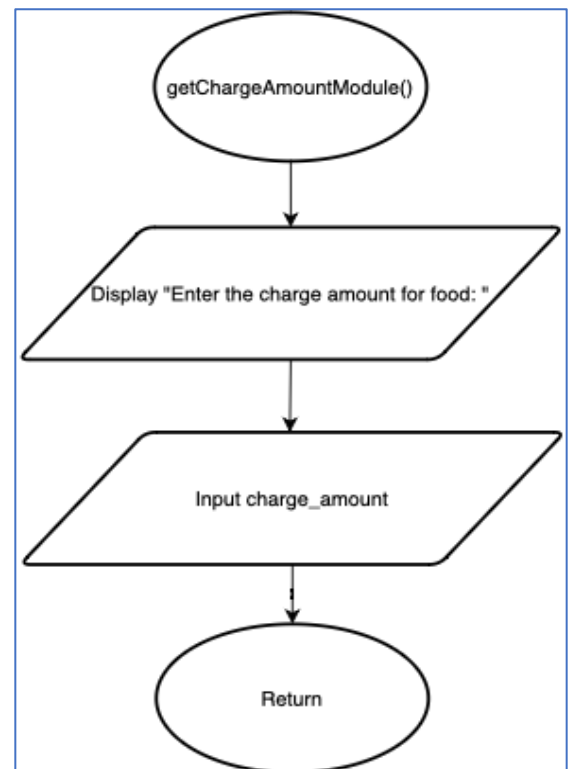


Figure 2: Get charge amount module.

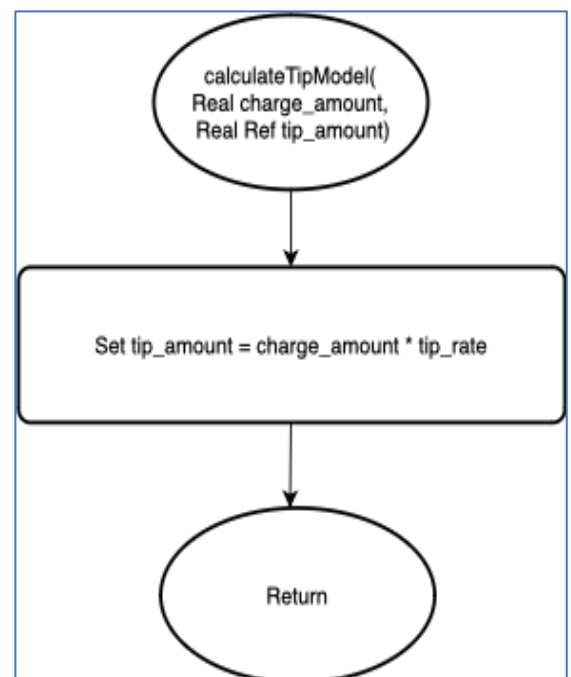


Figure 3: Tip calculation module

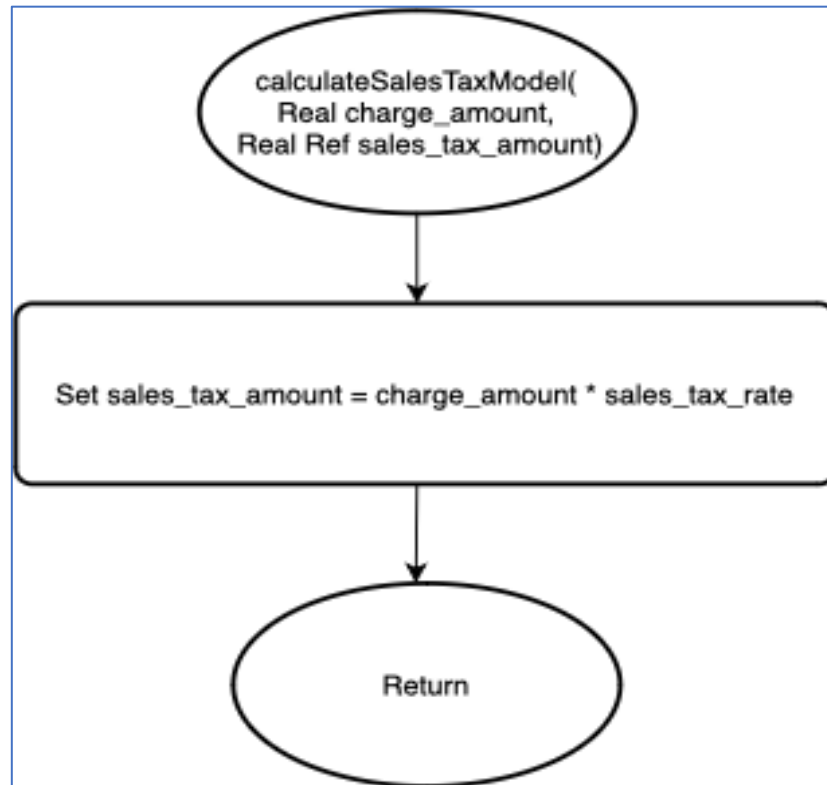


Figure 4: Sales Tax calculation module

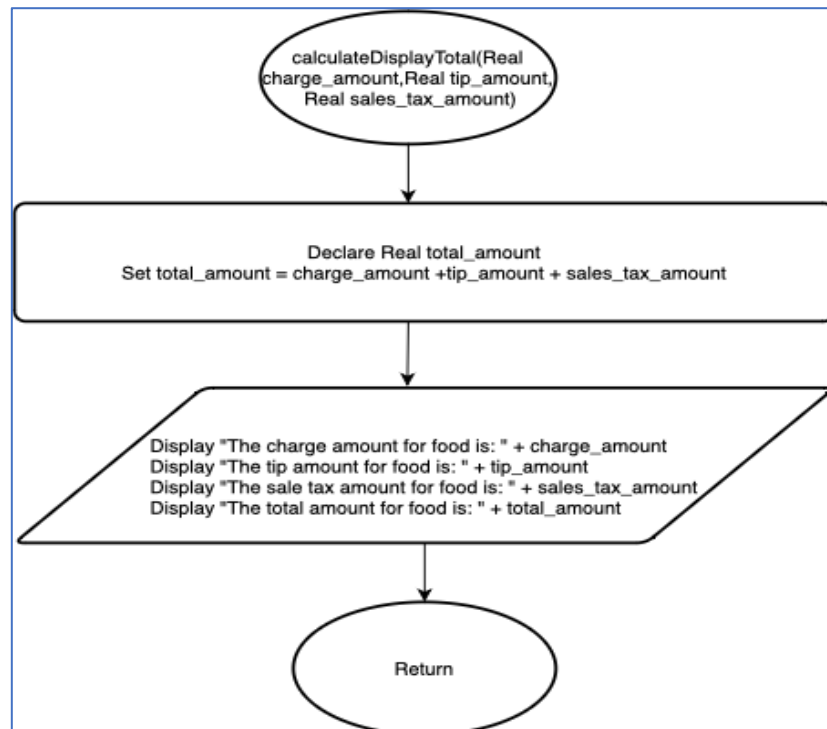


Figure 5: Total calculation and display all values module.