**CSD 1133 – 2023S**

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Assignment #3 -------------------------------------------------------------------------------------------------**

Design a **Flowchart and Pseudocode** for the following Problem.

Design a Modular Program!

Write a program which takes the patient's weight and height as input, calculates the BMI using module, and displays the corresponding message from the table below.

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**Pseudocode :**

// Main module

Module main()

// Declare local variables to store patient's weight and height

Declare Real p\_weight

Declare Real p\_height

// Ask user input for patient's weight and store in p\_weight

Display "Enter patient's weight in kilograms: "

Input p\_weight

// Ask user input for patient's height and store in p\_height

Display "Enter patient's height in meters: "

Input p\_height

// Calculate BMI with patient's weight and height

Call calculateBmi(p\_weight,p\_height)

End Module

// Module that calculates bmi index value using provided weight and height

Module calculateBmi(Real p\_weight, Real p\_height)

// Declare local variable to store the message based on bmi category

Declare String message

// Declare local variable to store the calculated bmi index value

Declare Real bmi\_index

// Compute bmi value and store in bmi\_index

Set bmi\_index = p\_weight / (p\_height \* p\_height)

// Determine bmi catehory and generate message

Call determineCategory(message)

//Display the generated message to user

Display "According to your bmi, you have" + message

End Module

// Check the bmi value and update message by passing it through reference variable

Module determineCategory(Real bmi\_index, Real Ref message)

// Set message if bmi > 25 to overweight

If bmi\_index > 25 Then

Set message = "Overweight"

// Set message if bmi >= 18.5 AND bmi <=25 to Normal weight

Else If bmi\_index >= 18.5 AND bmi\_index <=25 Then

Set message = "Normal Weight"

// Set message if bmi < 18.5 to Underweight

Else

Set message = "Underweight"

End If

End Module

A screenshot of a cell phone

Description automatically generated with low confidence**Flow-chart :**

Figure : Main module

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Figure : calculate Bmi module.

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Figure : Determine bmi category.