UNIVERSITI TEKNOLOGI MALAYSIA

School of Professional and Continuing Education (SPACE)

UNIVERSITI TEKNOLOGI MALAYSIA

DEPARTMENT OF COMPUTER SCIENCE & SERVICES, UTM

SEMESTER I, SESION 2024/2025

ASSIGNMENT 1

DSPD 1573: PROGRAMMING FUNDAMENTAL

NAME	:	
COURSE	:	DIPLOMA IN COMPUTER SCIENCE
SUBMISSION DATE	:	15 SEPTEMBER 2024
LECTURER'S NAME	:	MUHAMMAD FARIS FAISAL BIN AHMAD RADDI

ASSIGNMENT 1

1. **Write a C++ program to calculate Car parking tickets.**
    a. Draw a flowchart for this program
    b. Allow the user to input the number of hours for multiple customers using a loop.
    c. After calculating the total cost for each customer, ask if the user wants to enter details for another customer.
    d. Use a function calculateParkingFee to calculate the total car parking ticket based on RM 1.20 per hour.

    Example:

    Input: 3 hours

    Output: Total parking ticket: RM 3.60

    Prompt: "Do you want to enter another customer? (y/n)"

2. Write a C++ program to calculate Body Mass Index (BMI) based on weight and height.

a. Draw a flowchart for this program

b. Allow the user to input their weight (in kg) and height (in meters).

c. Display BMI classification status according to the following table:

Classification	BMI
Underweight	<19
Normal	<25
Overweight	>=25
Obese	>=30

d. Use a function calculateBMI to compute the BMI.

e. Calculate BMI using formula:

$$BMI = \frac{Berat(kg)}{Tinggi(m) \times Tinggi(m)}$$

Figure 1: BMI Formula

f. Use a loop to allow multiple BMI calculations for different users.

g. After displaying the BMI classification, ask if the user wants to calculate BMI for another person.

Example:

Input: weight = 70 kg, height = 1.75 m

Output: BMI = 22.86 (Normal)

Prompt: "Do you want to calculate BMI for another person? (y/n)"

3. Write C++ program for COVID 19 detection system

a. Draw a flowchart for this program.

b. This program will allow ask user either

   i. Symptomatic

   ii. Asymptotic

c. If user is symptomatic

   i. Ask user to enter temperature and SPO_2 reading

      1. If temperature >37.5 and SPO_2reading less than 95

         a. Display “Please go to the near Covid Assessment Centre (CAC)”

      2. If temperature >37.5 or SPO_2reading less than 95

         a. Display “Please do Swab test or saliva test

      3. If temperature If temperature <37.5 and SPO_2 reading less than 95

         a. Display “You are normal. Please keep your social distancing and Stay at home”

   ii. Use a function checkSymptoms to display the appropriate message based on the conditions.

d. If user is asymptotic

   i. Display “You are normal. Please keep your social distancing and Stay at home”

e. Repeat the loop for another person.

Example:

Input: Symptomatic, Temperature = 38, SPO2 = 93

Output: Please go to the nearest Covid Assessment Centre (CAC)

Prompt: "Do you want to check another person? (y/n)"