ASSIGNMENT 1

PROGRAMMING TECHNIQUE 1 (SECJ1013)

SECTION 02, SEM 1 (2025/2026)

INSTRUCTIONS TO THE STUDENTS

- *This assignment must be done **in pairs** (a group consisting of 2 members).*
- *Please refer to the group list to find out your group members/ partner and your set of assignments.*
- *The application examples given in the figure in the question set can be used as a guide to design your solution (flow chart).*
- *Any form of plagiarisms is **NOT ALLOWED**. Students who copied other students' assignments will get **ZERO** marks (both parties, students who copied, and students that share their work).*
- *Please insert your **name and partner's name, matrics number, and date** as a comment in your program.*

SUBMISSION PROCEDURE

- *Please submit this assignment according to the due date in e-learning.*
- *Only one submission per pair (group) that includes one file is required for the submission which is the flow chart (the file with the extension .pdf).*
- *Submit the assignment via the UTM's e-learning system.*

SET 1

Based on the problem given below, analyze the problem and design its solution using a **flow chart**. The flow chart must be drawn by using any appropriate drawing tools such as Microsoft Visio, draw.io (https://app.diagrams.net/), and Lucid chart (https://www.lucidchart.com/pages/examples/flowchart-maker). You need to develop a Basal Metabolic Rate (BMR) Calculator to estimate a basal metabolic rate: the amount of energy expended while at rest in a neutrally temperate environment, and in a post-absorptive state (meaning that the digestive system is inactive, which requires about 12 hours of fasting) (***Source:*** https://www.calculator.net/bmr-calculator.html). **Figure 1** shows the example of the BMR calculator application as a guide to developing your own BMR calculator.

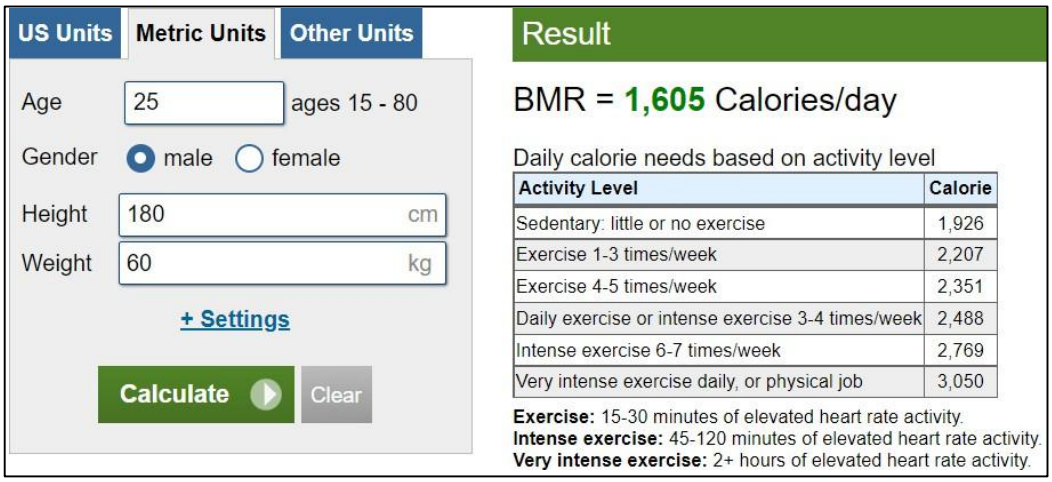

Figure 1: BMR calculator application
(***Source:*** *https://www.calculator.net/bmr-calculator.html*)

Please take note that in your solution (flow chart), you **MUST** apply:

a) Branching/ selection (if..else)
b) Loop/ repetition (repeat..until/ do..while)
c) User-defined function flow chart. Besides the **main** function flow chart, your solution needs to design at least **ONE** more other function flow chart. Use appropriate arguments for the function.

SET 2

Based on the problem given below, analyze the problem and design its solution using a **flow chart**. The flow chart must be drawn by using any appropriate drawing tools such as Microsoft Visio, draw.io (https://app.diagrams.net/), and Lucid chart (https://www.lucidchart.com/pages/examples/flowchart-maker). You need to develop a Loan Calculator to estimate a monthly installment and to help you to plan your finances. **Figure 2** shows the example of car loan calculator applications as a guide to develop your own loan calculator.

Figure 2: Car loan calculator application
(***Source:*** *https://www.calculator.com.my/car-loan)*

Please take note that in your solution (flow chart), you **MUST** apply:

a) Branching/ selection (if..else)
b) Loop/ repetition (repeat..until/ do..while)
c) User-defined function flow chart. Besides the **main** function flow chart, your solution needs to design at least **ONE** more other function flow chart. Use appropriate arguments for the function.