



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

SEMESTER I SESSION 2025/2026
SECJ1013 PROGRAMMING TECHNIQUE 1

ASSIGNMENT 1

GROUP MEMBERS : 1. YONG SEE EN (A25CS0168)
2. MUHAMMAD HAFIZ BIN SUHAILI (A25CS0106)

GROUP NUMBER : 5

SECTION : 02

LECTURER NAME : DR. MUHAMMAD LUQMAN BIN MOHD SHAFIE

SET NUMBER : 1

DATE : 2 November 2025

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.

The screenshot shows a BMR calculator application with a green header bar. On the left, there are tabs for 'US Units', 'Metric Units', and 'Other Units'. Below these are input fields for Age (25), Gender (male selected), Height (180 cm), and Weight (60 kg). A '+ Settings' link and 'Calculate' and 'Clear' buttons are at the bottom of the input section. On the right, the 'Result' section shows 'BMR = 1,605 Calories/day'. Below this is a table titled 'Daily calorie needs based on activity level' with columns 'Activity Level' and 'Calorie'. The table lists seven activity levels with their corresponding calorie needs. At the bottom of the result section, there are definitions for 'Exercise', 'Intense exercise', and 'Very intense exercise'.

| Activity Level | Calorie |
|---|---------|
| Sedentary: little or no exercise | 1,926 |
| Exercise 1-3 times/week | 2,207 |
| Exercise 4-5 times/week | 2,351 |
| Daily exercise or intense exercise 3-4 times/week | 2,488 |
| Intense exercise 6-7 times/week | 2,769 |
| Very intense exercise daily, or physical job | 3,050 |

Exercise: 15-30 minutes of elevated heart rate activity.
Intense exercise: 45-120 minutes of elevated heart rate activity.
Very intense exercise: 2+ hours of elevated heart rate activity.

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:

- Branching/ selection (if..else)
- Loop/ repetition (repeat..until/ do..while)
- 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.

Flowchart:

