ASSIGNMENT 1

PROGRAMMING TECHNIQUE 1 (SECJ1013)

SEM 1 (2024/2025)

INSTRUCTIONS TO THE STUDENTS

- *This assignment must be done **in pairs** (a group consisting of 2 members).*
- *The application examples given in the figure in the question 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** in the submitted document.*

SUBMISSION PROCEDURE

- *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.*

QUESTION

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 Figma, Microsoft Visio, draw.io or Lucid chart. 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.

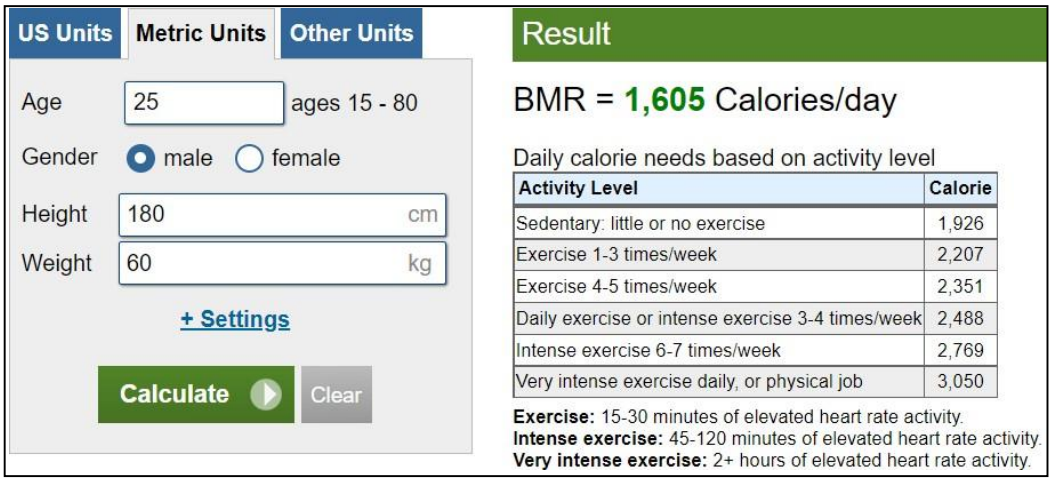
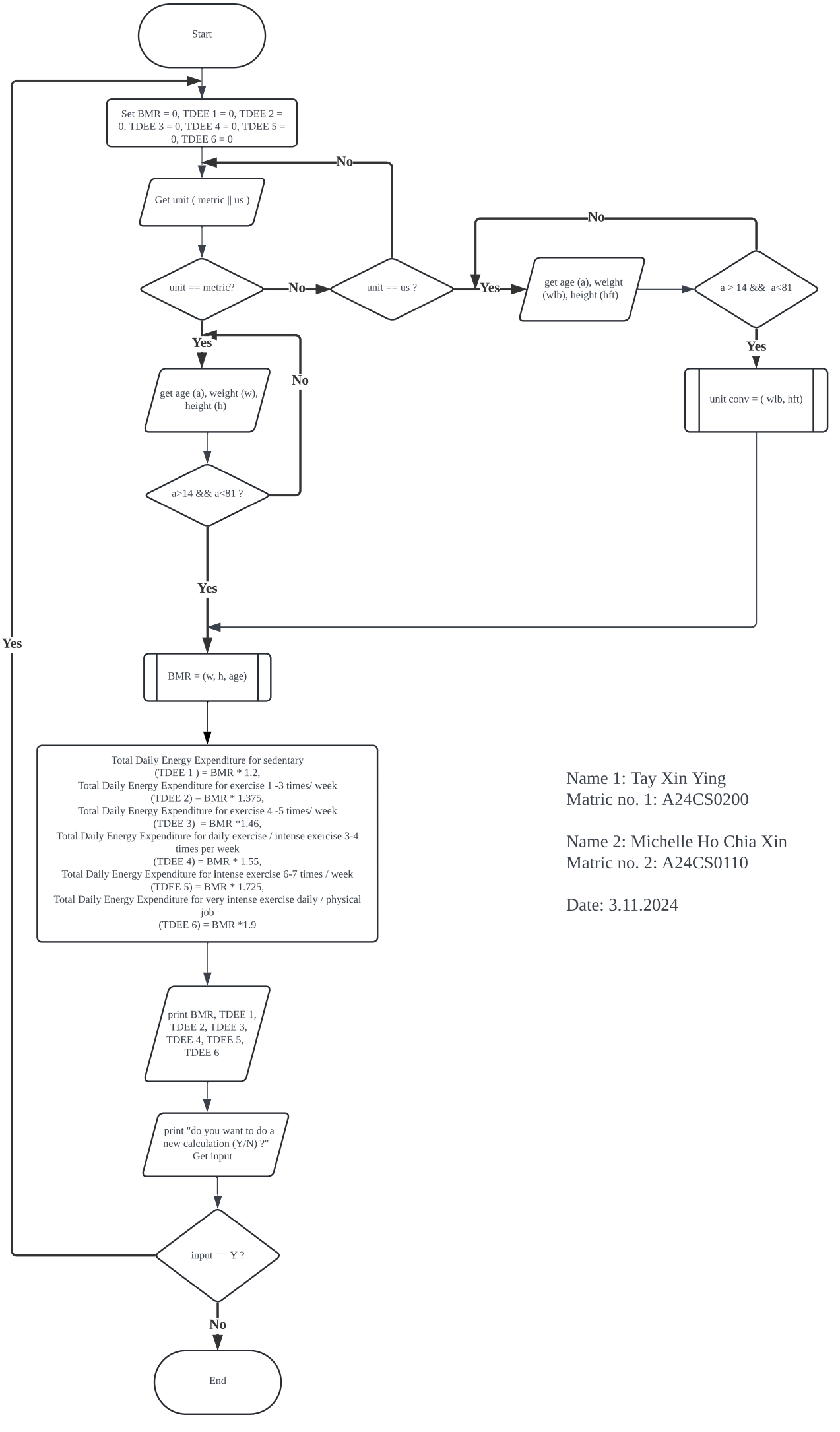


Figure 1: BMR calculator application
(***Source:*** *https://www.calculator.net/bmr-calculator.html*)

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

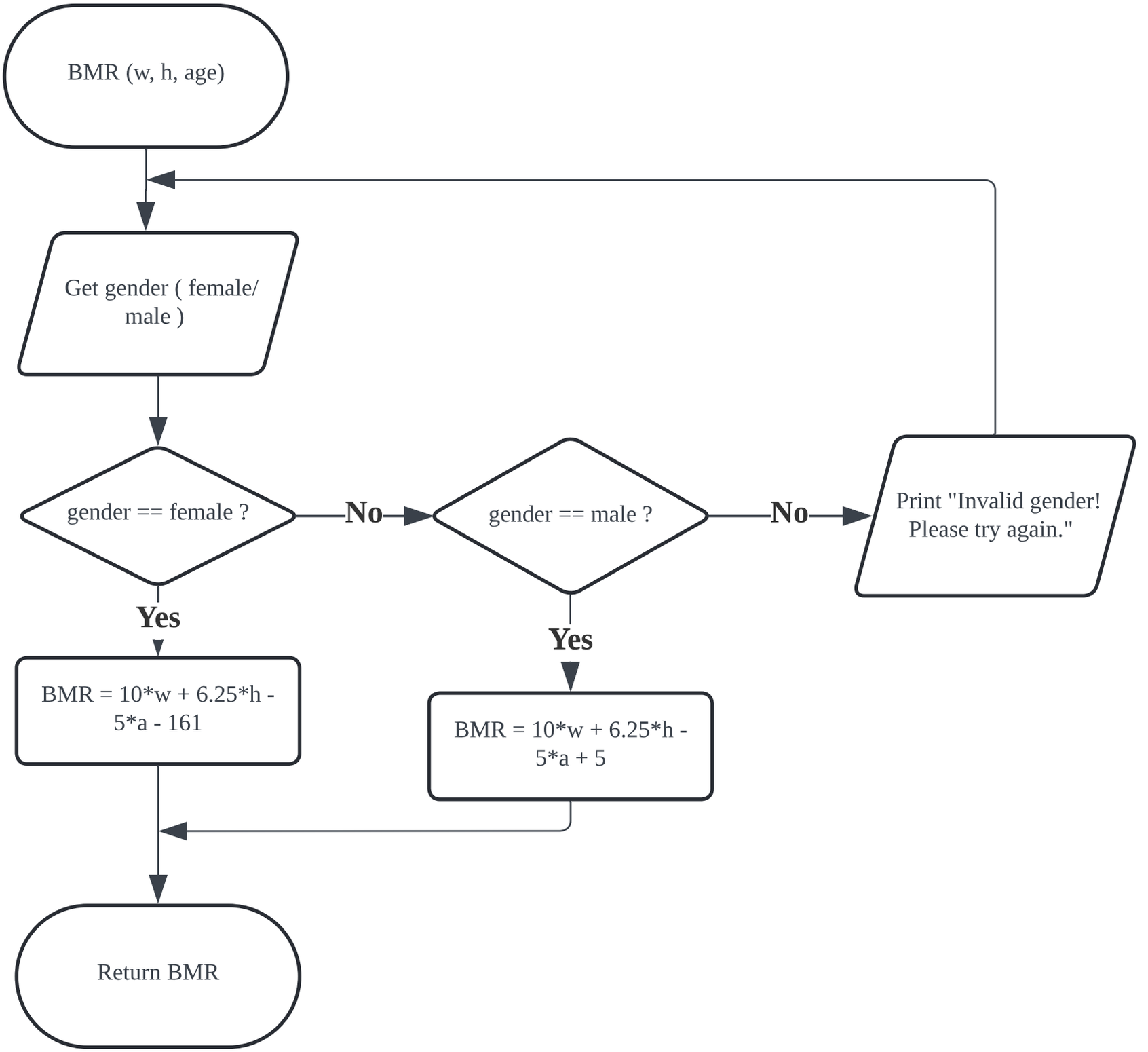
a) Branching/ selection (if..else)
b) Loop/ repetition (repeat..until/ do..while)
c) User-defined function flow chart. Besides the **main** function flow chart, your solution needs to design at least **ONE** or more other function (subroutine) flow chart. Use appropriate arguments for the function.

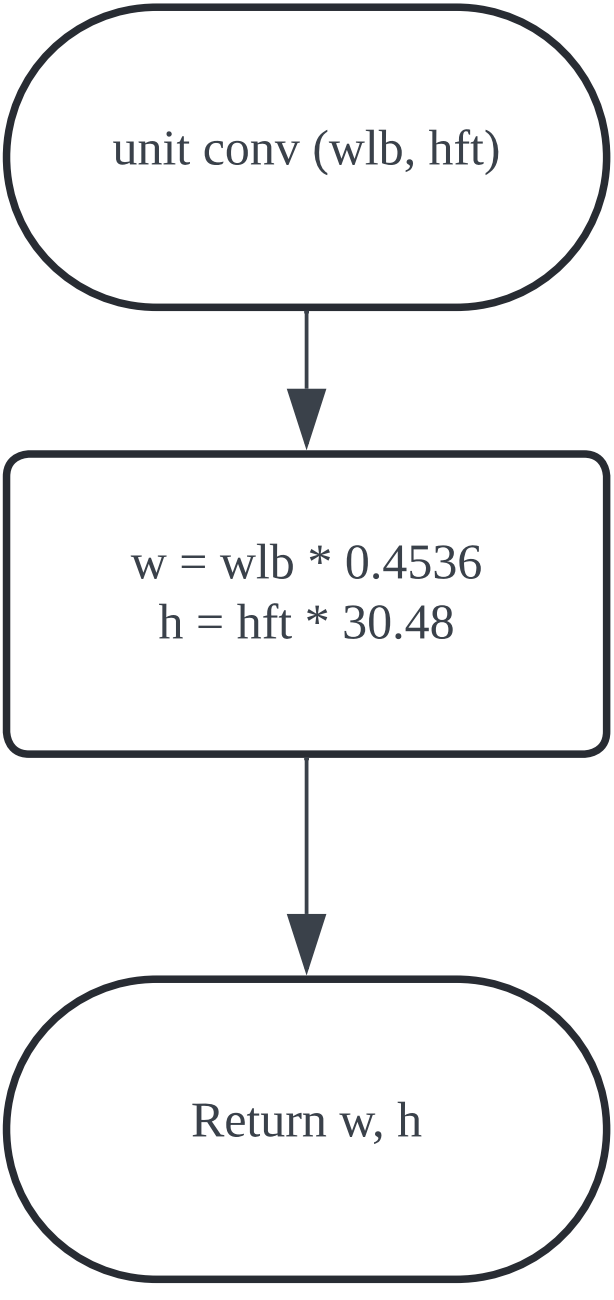


Name 1: Tay Xin Ying
Matric no. 1: A24CS0200

Name 2: Michelle Ho Chia Xin
Matric no. 2: A24CS0110

Date: 3.11.2024


BMR (w, h, age)
Get gender (female/ male)
gender == female ?
No
gender == male ?
No
Print "Invalid gender! Please try again."
Yes
Yes
BMR = 10*w + 6.25*h - 5*a - 161
BMR = 10*w + 6.25*h - 5*a + 5
Return BMR


unit conv (wlb, hft)
w = wlb * 0.4536
h = hft * 30.48
Return w, h