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.

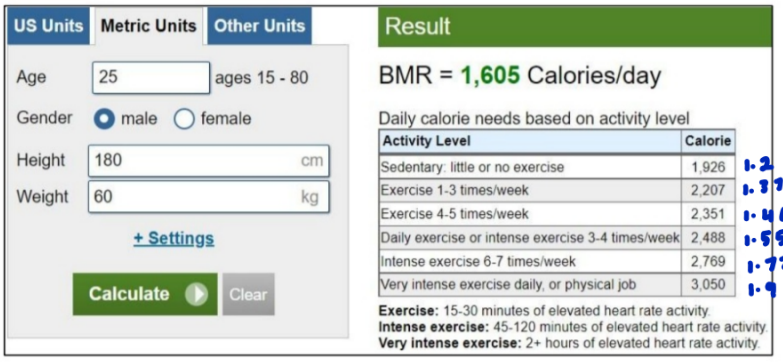


Figure 1: BMR calculator application
(***Source:*** *https://www.calculator.net/bmr-calculator.html*)

🧮 1. Formula Mifflin-St Jeor (paling tepat & moden)

Untuk lelaki:

$$\text{BMR} = (10 \times \text{berat(kg)}) + (6.25 \times \text{tinggi(cm)}) - (5 \times \text{umur}) + 5$$

Untuk perempuan:

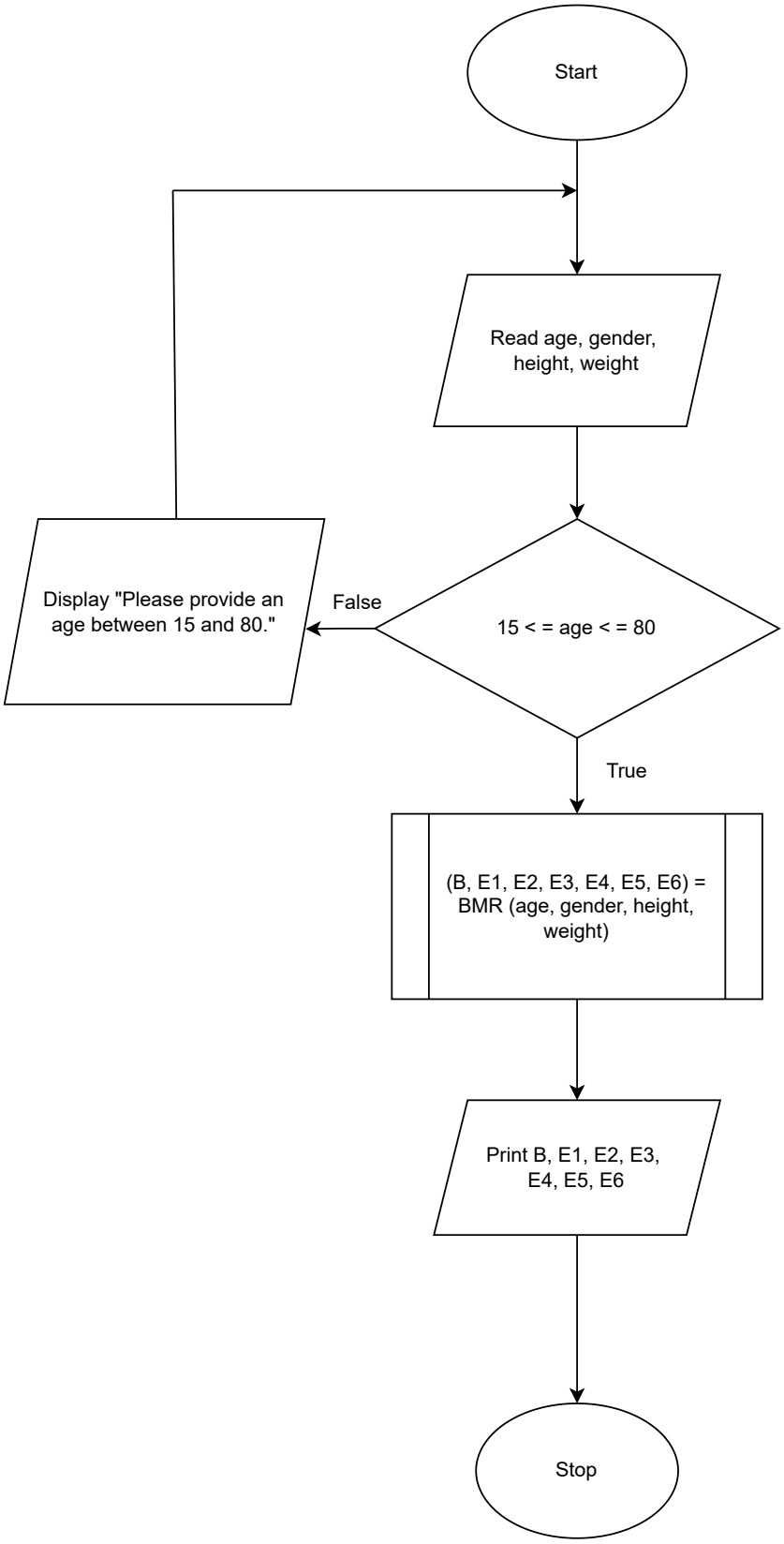
$$\text{BMR} = (10 \times \text{berat(kg)}) + (6.25 \times \text{tinggi(cm)}) - (5 \times \text{umur}) - 161$$

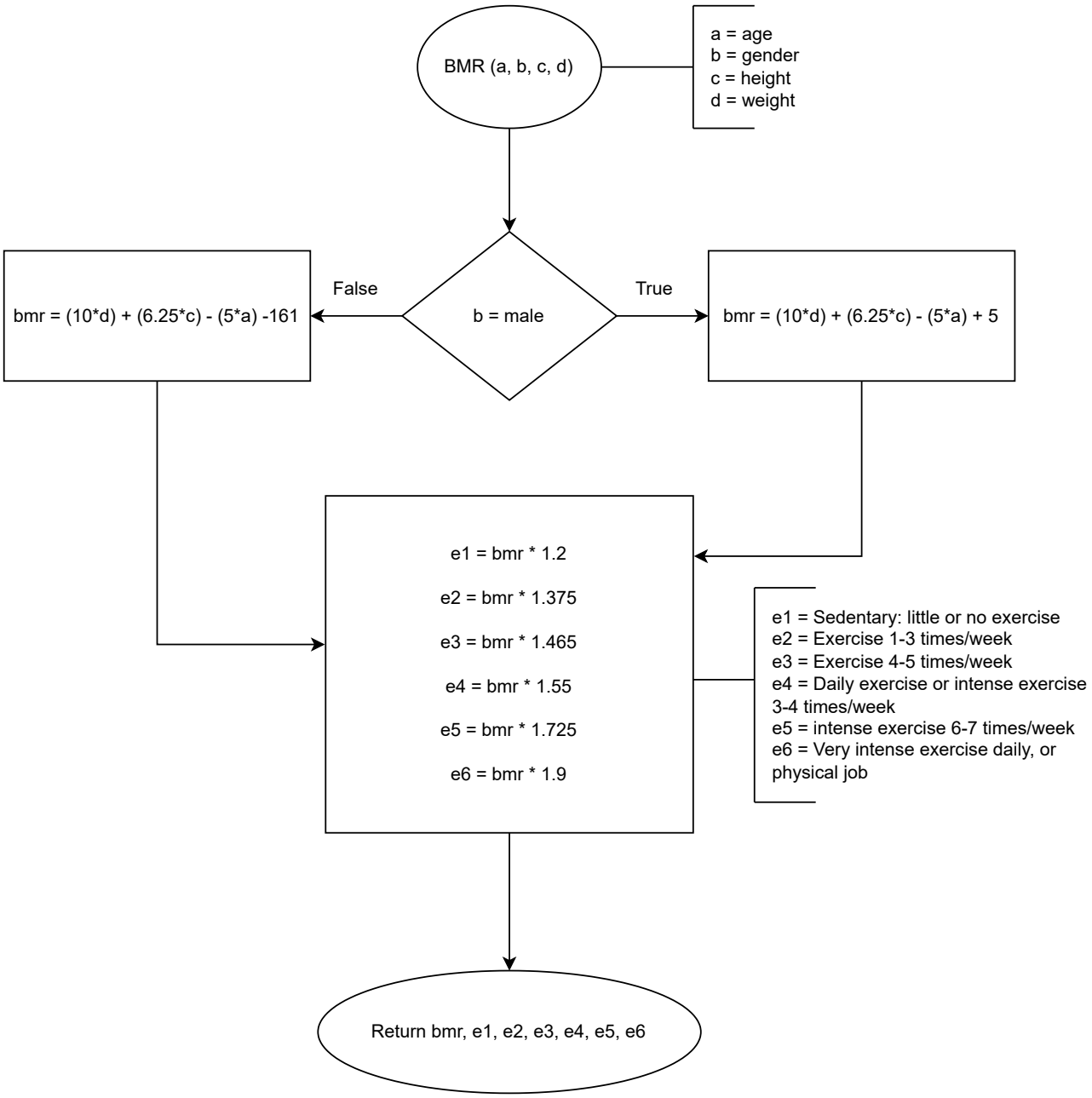
⚡ Untuk kira Total Kalori Harian (TDEE):

Selepas dapat BMR, darab dengan faktor aktiviti:

Tahap Aktiviti	Faktor	Keterangan
Tidak aktif	1.2	Duduk saja, tiada senaman
Aktiviti ringan	1.375	Senaman ringan 1–3 kali/minggu
Sederhana	1.55	Senaman sederhana 3–5 kali/minggu
Aktif	1.725	Senaman berat 6–7 kali/minggu
Sangat aktif	1.9	Senaman harian atau kerja fizikal berat

3 NOVEMBER 2025
1. MURSYIDAH BINTI JAHIDI (A25CS0286)
2. BALQIS BATRISYA BINTI JALALUDDIN (A25CS0196)




BMR (a, b, c, d)
a = age
b = gender
c = height
d = weight
b = male
False
True
bmr = (10*d) + (6.25*c) - (5*a) -161
bmr = (10*d) + (6.25*c) - (5*a) + 5
e1 = bmr * 1.2
e2 = bmr * 1.375
e3 = bmr * 1.465
e4 = bmr * 1.55
e5 = bmr * 1.725
e6 = bmr * 1.9
e1 = Sedentary: little or no exercise
e2 = Exercise 1-3 times/week
e3 = Exercise 4-5 times/week
e4 = Daily exercise or intense exercise 3-4 times/week
e5 = intense exercise 6-7 times/week
e6 = Very intense exercise daily, or physical job
Return bmr, e1, e2, e3, e4, e5, e6