Assignment 2 – Instructions

Study Unit 2 – Input, Processing, and Output

Practical 2.1

John Doe, a first year University student, recently moved into his new apartment. It's his first time managing his utility bills, and he's noticed that some appliances, like his electric kettle and laptop charger, use a lot of electricity. To better manage his expenses, John wants to calculate the energy consumption in kilowatt-hours (kWh) of these devices.

Objective: Write a Python program to calculate the energy consumption in kilowatt-hours (kWh) given the power in watts (W) and the duration the power is used in hours.

Formula: Energy in kilowatt-hours is calculated using the formula: $kWh = \frac{Power\ (W) \times Time\ (hours)}{1000}$

Output

```
Enter the appliance power in watts (W): 280
Enter the duration the appliance is used in hours: 1
Energy Consumption: 0.28 kWh
```

Practical 2.2

Emily Clark is starting her health studies and wants to track her fitness progress. She's curious about her Body Mass Index (BMI) as a starting point to understand her health better. Emily decides to calculate her BMI using her weight and height.

Objective: Help Emily calculate her BMI by writing a simple Python program using the following formula:

$$BMI = \frac{weight\ (kg)}{height\ (m)^2}$$

TAKE NOTE:
Receive the height in Centimetres (cm) and convert it to meters using the following formula:

$$Meters = Centimetres\ \div 100$$

Submit your Python file(*.py) here on eFundi, under this assignment, and make sure you attach and submit your file successfully.

Output

```
Enter your weight in kilograms (kg): 86
Enter your height in centimetres (cm): 178
BMI: 27.143037495265748
```

Practical 2.3

Tanjiro Kamado is hosting a braai for his friends and family to celebrate a successful rugby match. He's bought several packs of boerewors and wants to ensure that every guest gets an equal share, with no wastage. Tanjiro needs to calculate if there are any pieces of boerewors left after dividing them among his guests

Objective: Help Tanjiro determine how many pieces of boerewors are left over after distributing them evenly among the guests.

Tips: Ask the user for the number of boerewors pieces and how many guests will be attending.

Output

```
Enter the total number of boerewors pieces: 53
Enter the number of guests: 9
Pieces of boerewors left over: 8
```