



CODE / COURSE	DFN40323 PROGRAMMING ESSENTIALS IN PYTHON	PRACTICAL TASK	1
PROGRAM CLASS	DDT4	DURATION	3 HOURS
STUDENT'S NAME	1) TIVIYAEN ELANGO 2) MUHAMMAD AFIQ MUHAJMIN BIN MOHD ZAINI	CLO 1	P3
REG. NO.	1) 32DDT20F2015 2) 32DDT20F2029	TOTAL MARKS	/75
LECTURER'S NAME	SHARIZAN BINTI ABDUL JAMIL		

Learning Outcome:

By the end of this practical, student will able to:

Construct a software application using the Python programming language (CLO1, P3, PLO3).

Instructions:

Answer ALL the questions. Students are asked to discuss and upload the findings of the discussion in report and .py file through CIDOS. Discussions should be done in groups of 2 (two). Students will be assessed according to the Rubric included along with the questions.

Question 1

Write a program to display Body Mass Index (BMI) category as shown in **Table A1**. The calculation of BMI is based on the formula given. You need to get an input name, age, weight (in Kilogram) and height (in Meter) from the user.

Table A1

Category	BMI Range
Underweight	< 18.5
Normal	18.5 – 24.9
Overweight	25 – 30
Obese	> 30

****Formula:**

$$\text{BMI} = \frac{\text{weight (Kg)}}{\text{height(Meter)}^2}$$

Example Output:

```
Enter your name: sharizan
Enter your age: 32
Enter your weight in KG: 58
Enter your height in Meter: 1.53
*****
Hi sharizan. Your age is 32 years old. Your BMI is 24.78 and the category is normal
***Repl Closed***
```

(25 marks)

SOURCE CODE & OUTPUT:

```
#Ask user for name age weight and height
name = str(input("Enter your name:"))
age = float(input("Enter your age:"))
weight = float(input("Enter your weight in KG:"))
height = float(input("Enter your height in Meter:"))

#BMI formula
BMI = weight / (height*height)

print("Hi",name,".""Your age is",int(age),"years old""."" Your BMI is",float(BMI),"and the category is")

#Start of if statement
if (BMI < 18.5):
    print("Underweight")
elif (BMI >= 18.5) & (BMI <= 24.9):
    print("Normal")
elif (BMI >= 25) & (BMI <= 30):
    print("Overweight")
elif (BMI > 30):
    print("Obese")
else:
    print("Please Try Again")
```

Underweight

```
Enter your name:bob
Enter your age:19
Enter your weight in KG:30
Enter your height in Meter:1.7
Hi bob .Your age is 19 years old. Your BMI is 10.380622837370243 and the category is
Underweight
```

Normal

```
Enter your name:Aida
Enter your age:21
Enter your weight in KG:60
Enter your height in Meter:1.57
Hi Aida .Your age is 21 years old. Your BMI is 24.341758286340216 and the category is
Normal
```

Overweight

```
Enter your name:Zul
Enter your age:21
Enter your weight in KG:50
Enter your height in Meter:1.4
Hi Zul .Your age is 21 years old. Your BMI is 25.510204081632658 and the category is
Overweight
```

Obese

```
Enter your name:Afiq
Enter your age:21
Enter your weight in KG:150
Enter your height in Meter:1.7
Hi Afiq .Your age is 21 years old. Your BMI is 51.90311418685122 and the category is
Obese
```

Question 2

Write a program to calculate electricity bill based on the information given in **Table A2**. **Table A2**

Tariff Block (kWh)	Prorated Block (kWh)	Rate (RM)	Amount (RM)
200	200	0.218	43.60
100	100	0.334	33.40
300	300	0.516	154.80
300	130	0.546	70.98

Example Output:

```
Please enter number of units you consumed: 730

Total Consumption (kWh) = 730
Amount to Pay = RM 302.78

***Repl Closed***
```

(25 marks)

SOURCE CODE & OUTPUT:

```
totalunit = int(input("Please enter number of units you consumed:"))
#if else statement to calculate totalprice
if (totalunit <= 200):
    totalprice = totalunit * 0.218
elif (totalunit > 200) & (totalunit <= 300):
    tariff1 = 200 * 0.218
    unit1 = totalunit - 200
    tariff2 = unit1 * 0.334
    totalprice = tariff1 + tariff2
elif (totalunit > 300) & (totalunit <= 600):
    tariff1 = 200 * 0.218
    unit1 = totalunit - 200
    tariff2 = 100 * 0.334
    unit2 = unit1 - 100
    tariff3 = unit2 * 0.516
    totalprice = tariff1 + tariff2 + tariff3
elif (totalunit > 600) & (totalunit <= 900):
    tariff1 = 200 * 0.218
    unit1 = totalunit - 200
    tariff2 = 100 * 0.334
    unit2 = unit1 - 100
    tariff3 = 300 * 0.516
    unit3 = unit2 - 300
    tariff4 = unit3 * 0.546
    totalprice = tariff1 + tariff2 + tariff3 + tariff4
else:
    print("The allocated block is not suitable for your usage")

print("Total Consumption (kWh)=", totalunit)
print("Amount to pay = RM", float(totalprice))
```

730 units

```
Please enter number of units you consumed:730
Total Consumption (kWh)= 730
Amount to pay = RM 302.78000000000003
```

900 units

```
Please enter number of units you consumed:900
Total Consumption (kWh)= 900
Amount to pay = RM 395.6
```

Question 3

Write a program to compute the car rental price. The program takes the input of days and selection of VIP membership. The program calculates and displays the rental price, discount, and final price of the car rental. The basic price of car rental is RM50 per day. The silver member gets 5% discount and gold member gets 10% discount of the total price. If the car is rented 3 days or more, 10% discount will apply. Display the receipt. (*Show the output for different membership*)

Example Output:

```
Number of days to rent the car: 6
Select the membership (1:Silver, 2:Gold, 3:Non-member): 3

    RECEIPT OF CAR RENTAL SHOP!

=====
Rental Price : RM 300
Discount: RM 30.00
Final Price of Car Rental: RM 270.00

***Repl Closed***
```

(25 marks)

SOURCE CODE & OUTPUT:

```
days = int(input("Number of days to rent the car: "))
membershiptype = int(
    input("Select the membership (1.Silver, 2.Gold, 3.Non-Member) : "))
print("      RECEIPT OF CAR RENTAL SHOP      ")
print("-----")

if membershiptype == 1:
    price = 50 * 0.05
    rentprice = price * days
    print("Rental Price : RM ", rentprice)
elif membershiptype == 2:
    price = 50 * 0.10
    rentprice = price * days
    print("Rental Price : RM ", rentprice)
elif membershiptype == 3:
    price = 50
    rentprice = price * days
    print("Rental Price : RM ", rentprice)
else:
    print("The membership you entered not found. Please try again.")

if days >= 3:
    discount = rentprice * 0.10
    print("Discount : RM ", discount)
    final = rentprice - discount
    print("Final Price of Car Rental : RM ", final)

else:
    print("Error!")
```

Output

```
Number of days to rent the car: 6
Select the membership (1.Silver, 2.Gold, 3.Non-Member) : 3
      RECEIPT OF CAR RENTAL SHOP
-----
Rental Price : RM 300
Discount : RM 30.0
Final Price of Car Rental : RM 270.0
```

CONCLUSION:

This exercise teaches us on how to use if statement properly and calculate multiple thing that we use in our daily life such as BMI, electric and car rental price

This also teaches us on how to properly think and solve the problem and implement it properly in code