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UNIVERSITI
TEKNOLOGI
MARA

SCHOOL OF INFORMATION SCIENCE

COLLEGE OF COMPUTING, INFORMATICS AND MATHEMATICS

UNIVERSITI TEKNOLOGI MARA (UiTM)

CAWANGAN KRDAH, KAMPUS SUNGAI PETANI

DIPLOMA IN LIBRARY INFORMATICS (CDIM 144)

PROGRAMMING FOR LIBRARIES

(IML 208)

ASSIGNMENT I:

BMI CALCULATOR & HEALTH INDICATOR

BY:

DAYANA BATRISYIA BINTI MOHD RABIEE (2022896288)

CLASS:

KIM1443E

PREPARED FOR:

SIR AIRUL SHAZWAN BIN NORSHAHIMI

SUBMISSION DATE:

4 JANUARY 2023

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Bismillahirrahmanirrahim, I am grateful to god because I simplified my assignment and delivered it on time to my lecturer. Completing my assignment is very challenging and complicated but grateful to god all things get easier and I have ideas for my assignment.

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TABLE OF CONTENT

	PAGES
ACKNOWLEDGEMENT	
1.0 INTRODUCTION	1
2.0 FLOW CHART	2
3.0 CODING	3
4.0 DATABASE	5
5.0 GUI	6

1.0 INTRODUCTION

The topic that was chosen is calculating the Body Mass Index (BMI) to check if the body is healthy or not by inserting the weight and height of the user. This system will calculate the BMI when the user inserts the data in this system and the system is user-friendly to use it. The system also gives the result of the BMI such as BMI category and gives tips based on the BMI. This system will calculate the BMI of the user based on the information of the user. For instance, height, weight, and date of birthday, month, and year. This information will result out about the user and give the result of BMI and the user can see the result in this system. The system functions when the user fills in the information in the system and the system will be used for all students.

This system is useful for an approach when the student inserts the short name or full name and inserts the date of birthday, month, and year. Moreover, insert the truth weight(kg) and insert the height(m). Then, click the calculate BMI to know the result of the user. The result will be shown the BMI, tips, and age.

In conclusion, this system can be used for students to check their BMI and can be used anytime when want to try this system.

2.0 FLOW CHART

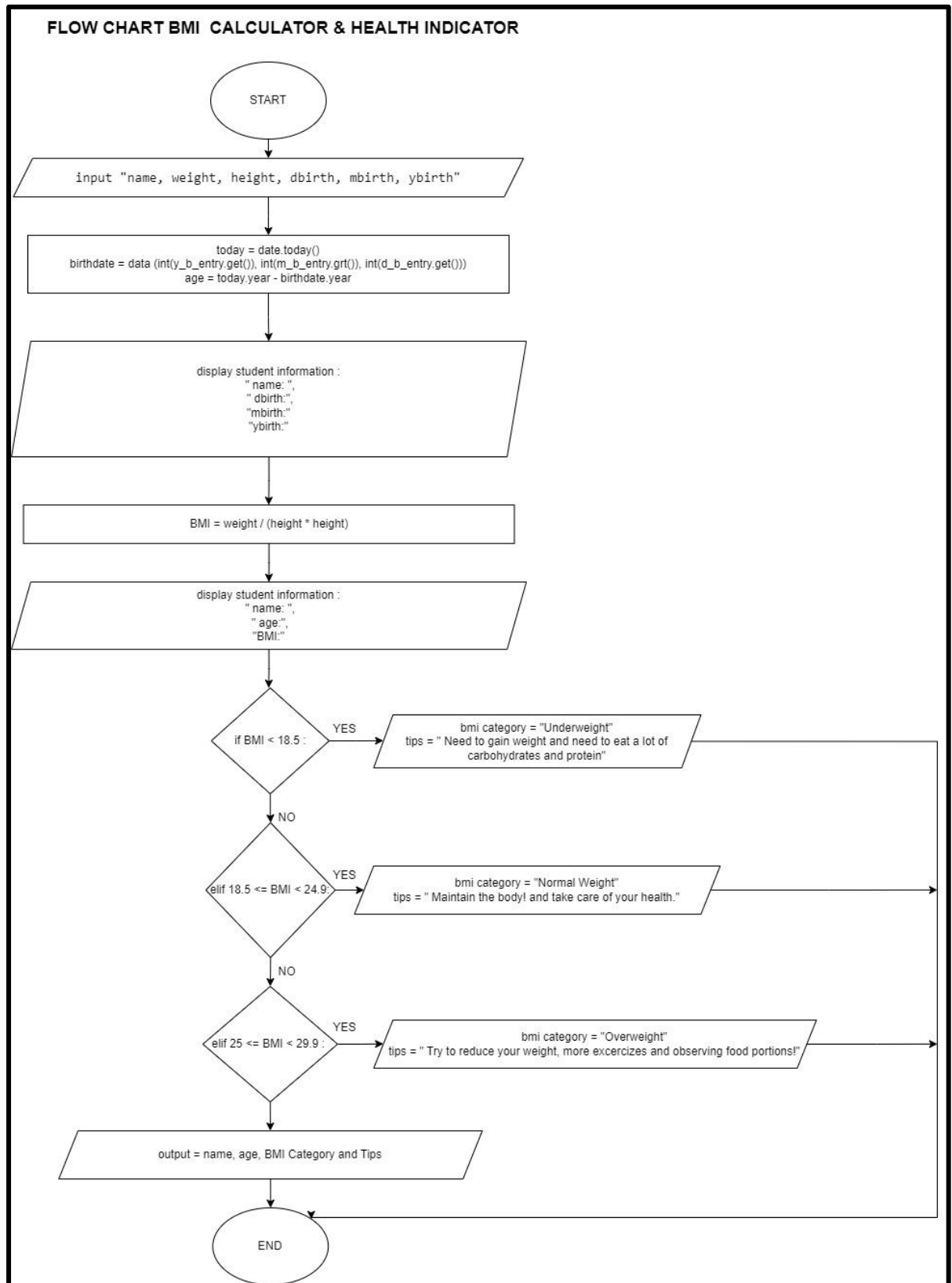


Figure 2.0: Flow chart for BMI

3.0 CODING

```
C: > Users > User > Music > student_information.py > ...
1  import tkinter as tk
2  import mysql.connector
3  from datetime import date
4
5  # Connect to your MySQL database
6  mydb = mysql.connector.connect(
7      host="localhost",
8      user="root",
9      password="",
10     database="bmi_calculator_health_indicator"
11 )
12
13 # Create a cursor object to execute SQL queries
14 mycursor = mydb.cursor()
15
16
17 # Function
18 def calculate_bmi():
19     global name_entry, weight_entry, height_entry, age, result_text, output_label
20
21     # Get values from entry fields
22     name = name_entry.get()
23     weight = float(weight_entry.get())
24     height = float(height_entry.get())
25     dbirth = d_b_entry.get()
26     mbirth = m_b_entry.get()
27     ybirth = y_b_entry.get()
28
29     today = date.today()
30     birthdate = date(int(y_b_entry.get()), int(m_b_entry.get()), int(d_b_entry.get()))
31     age = today.year - birthdate.year #- ((today.month, today.day) < (birthdate.month, birthdate.day))
32
33     print("Student Name:", name)
34     print("Student Age:", age )
35     print("Student Weight:", weight)
36     print("Student Height:", height)
37     print("Birth Date:", dbirth, "/", mbirth, "/", ybirth)
38
39     # Calculate BMI
40     BMI = weight / (height * height)
41
42     # Display student information
43     result_text.set(f"Student: {name}\n"
44                    f"Age: {age} years\n"
45                    f"BMI: {BMI:.2f}")
46
47     # BMI category
48     if BMI < 18.5:
49         bmi_category = "Underweight"
50         tips = "Need to gain weight and need to eat a lot of carbohydrates and protein."
51     elif 18.5 <= BMI < 24.9:
52         bmi_category = "Normal Weight"
53         tips = "Maintain the body! and take care of your health."
54     elif 25 <= BMI < 29.9:
55         bmi_category = "Overweight"
56         tips = "Try to reduce your weight, more excercises and observing food portions!."
57     else:
58         bmi_category = "Obesity"
59         tips = "Please go to consultation expert to reduce your weight and please be more excercise!."
60
61     # Update with BMI category and tips
62     output_label.config(text=f"BMI Category: {bmi_category}, \n\nTips: {tips}")
63
64     # Insert data into the database
65     sql = "INSERT INTO student_information (Stu_Name, Stu_Age, Stu_Weight, Stu_Height) VALUES (%s, %s, %s, %s)"
66     val = (name, age, weight, height)
67     mycursor.execute(sql, val)
68     mydb.commit()
69
70     # GUI code
71     root = tk.Tk()
72     root.title("BMI Calculator & Health Indicator")
73     root.geometry('800x600')
```

```

74 root.configure(bg="pink")
75
76 frame = tk.Frame(root)
77 frame.pack()
78
79 user_info_frame = tk.LabelFrame(frame, text="Student Information")
80 user_info_frame.grid(row=0, column=0, ipadx=28, ipady=28)
81 user_info_frame.configure(bg="white", fg="deep pink", font=("Arial",20, "bold"))
82
83 name_label = tk.Label(user_info_frame, text="Name")
84 name_label.grid(row=0, column=0)
85 name_label.configure(fg="dark blue", font=("Arial",12, "bold"))
86
87 name_entry = tk.Entry(user_info_frame)
88 name_entry.grid(row=1, column=0)
89
90 weight_label = tk.Label(user_info_frame, text="Weight (kg)")
91 weight_label.grid(row=2, column=0)
92 weight_label.configure(fg="dark blue", font=("Arial",12, "bold"))
93
94 weight_entry = tk.Entry(user_info_frame)
95 weight_entry.grid(row=3, column=0)
96
97 height_label = tk.Label(user_info_frame, text="Height (m)")
98 height_label.grid(row=4, column=0)
99 height_label.configure(fg="dark blue", font=("Arial",12, "bold"))
100
101 height_entry = tk.Entry(user_info_frame)
102 height_entry.grid(row=5, column=0)
103
104 birth_date = tk.Label(user_info_frame, text="Birth Date")
105 birth_date.grid(row=0, column=1)
106 birth_date.configure(fg="dark blue", font=("Arial",12, "bold"))
107
108 d_b_entry = tk.Entry(user_info_frame)
109 d_b_entry.grid(row=1, column=1)
110 d_b_entry.insert(2,'00')
111
112 m_b_entry = tk.Entry(user_info_frame)
113 m_b_entry.grid(row=2, column=1)
114 m_b_entry.insert(2,'00')
115
116 y_b_entry = tk.Entry(user_info_frame)
117 y_b_entry.grid(row=3, column=1)
118 y_b_entry.insert(4,'0000')
119
120 #age_label = tk.Label(user_info_frame, text="Age")
121 #age_label.grid(row=4, column=1)
122
123 calculate_button = tk.Button(frame, text="Calculate BMI", command=calculate_bmi)
124 calculate_button.grid(row=16, column=0)
125 calculate_button.configure(bg="pink", fg="dark blue", font=("Arial", 12, "bold"))
126
127 result_text = tk.StringVar()
128 result_label = tk.Label(frame, textvariable=result_text)
129 result_label.grid(row=14, column=0)
130
131 # Output Label & result
132 label = tk.Label(root, text='BMI Category', font=("Times New Roman", 12))
133 label.pack(ipadx=10, ipady=10)
134 output_label = tk.Label(root, text="")
135 output_label.pack()
136
137 root.mainloop()

```

3.0: Coding

4.0 DATABASE

Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> student_information	★ Browse Structure Search Insert Empty Drop	16	InnoDB	utf8mb4_general_ci	16.0 KiB	-
1 table	Sum	16	InnoDB	utf8mb4_general_ci	16.0 KiB	0 B
↑	<input type="checkbox"/> Check all With selected: ▾					

4.0.1: Table of databases bmi_calculator_health_indicator

Databases

 **Create database** 

☐ Check all

Database	Collation	Action
<input type="checkbox"/> bmi_calculator_health_indicator	utf8mb4_general_ci	 Check privileges
<input type="checkbox"/> information_schema	utf8_general_ci	 Check privileges
<input type="checkbox"/> mysql	utf8mb4_general_ci	 Check privileges
<input type="checkbox"/> mysqlphoton	utf8mb4_general_ci	 Check privileges
<input type="checkbox"/> performance_schema	utf8_general_ci	 Check privileges
<input type="checkbox"/> phpmyadmin	utf8_bin	 Check privileges
<input type="checkbox"/> test	latin1_swedish_ci	 Check privileges

Total: 7

4.0.2: Databases

5.0 GUI

BMI Calculator & Health Indicator

Student Information

Name	Birth Date
Weight (kg)	00
Height (m)	00
	0000

Calculate BMI

BMI Category

Figure 5.0: GUI