



Term Paper
"Weight Trainer Program"

Name:

Cruel, Manuel Carlos H.
Dionisio, Carlo Dominic C.

Email:

manuel_cruel@dlsu.edu.ph
carlo_dionisio@dlsu.edu.ph

Subject & Section: LBYEC2B / EB1

Instructor: Dr. Melvin Cabatuan

Rating: _____

Remark: _____

Abstract

The program was inspired by the covid pandemic we are living in to this day, and we saw the hardships of people going through this tough time in everyone's life. At this moment in time it is difficult for people to go out and workout in public places, whether it is going to the gym, basketball court, tennis court, or even just jogging and biking around; there will always be risk of contracting the covid 19 virus. This project is a weight analysis program that focuses on the body information of its user. The user inputs the information like: weight, height, age, and gender, then the program will calculate the BMI of the user. The program will inform the user if he/she is overweight, underweight, or at a normal body weight. This will be based on the BMI formula provided in the paper. With this the program will give recommendations on if the user should lose, gain, or maintain their current weight. The user will then be asked to provide honest answers, on how active he or she is in their lives right now. After this, the user will be given a recommendation on how many calories they should intake in a day. Lastly, the program will be providing a recommended workout routine that is personalized for the user.

Introduction

2022 marks the 2nd anniversary of the covid virus, and it doesn't look like going away anytime soon. Due to the quarantine protocols, heavy restrictions, and health risks of going to a public area to exercise these past years, and according to a 2021 study by Readers Digest, there has been an increase in weight on average for males and females. It is seen around the world how hard the pandemic has affected us in body and mind. Adapting to the new normal is what we have to do as members of mankind, not only in terms of interaction with one another, but also in health and wellness. As athletes ourselves, we wanted to find a way to get people doing personal exercises, catered to their body specification and health level.

The targeted users are people that want to get fit and healthy, but do not have the knowledge to do their own exercises at home. The program would like to provide a health plan to improve your well being, and appearance. This program is for all age groups, specifically people who are not able to go out of their house due to increased risks of having bad side effects from the virus. These are people with comorbidities, and typically people over the age 65.

Functionalities

Functionality	Description	Benefit
BMI Calculation	Calculates the users BMI by getting the users weight(kg) and height(m), then using the equation $BMI = kg/m^2$	Gives the user an idea and indication if he/she is overweight or underweight.
Lose/Gain/Maintain Weight Option & Recommendation	If the user is overweight or underweight the program will give the user a recommendation to lose or gain weight. If the user is at normal weight it will give the user an option to maintain, or gain weight/muscle.	The recommendations are based on the user's BMI, so the user will be informed of how over/under weight he/she is.
Level of Activity Feature	The program will ask the user the level of activity he/she is currently doing. This generally asks how often or how intense the users' workouts are.	This feature is for gauging how active the user is in his/her life. This is to ensure that the program given is not too intense or tough for the user, since working out is about increasing the level of the intensity and the duration. If a user that does not exercise often does an intense workout in the start of his/her fitness journey, the user could experience injuries or muscle pain, from the sudden use of the body.
Calorie Intake Generator	The recommended calorie intake is also shown to the user. This is obtained by using the REE (Resting Energy Expenditure) Formula, and the Movement expenditure of each individual.	The calorie calculator is for the user to take note of what he/she is putting inside the body. The number that comes out is the amount of calories the user should eat in a day. Calorie counter apps are easily accessible on app

	<p>REE Formula (Resting Energy Expenditure)</p> <p>MALE:</p> $10 \times \text{weight (kg)} + 6.25 \times \text{height (cm)} - 5 \times \text{age (years)} + 5$ <p>FEMALE:</p> $10 \times \text{weight (kg)} + 6.25 \times \text{height (cm)} - 5 \times \text{age (years)} - 16$ <p>TDEE (Movement Expenditure)</p> <p>Sedentary REE x 1.2</p> <p>Light Activity REE x 1.375</p> <p>Moderate Activity REE x 1.55</p> <p>Very Active REE x 1.725</p> <p>TDEE = Calories</p> <p>Eat more than this = weight gain</p> <p>Eat less than this = weight loss</p> <p>Eat this amount = weight maintenance</p>	stores for all devices.
Recommended Workout	A recommended workout is then given to the user based on their given data. These workouts were carefully made for each weight category.	The user will be doing this workout for the coming days, and will be updated each time he/she changes the data on the program, if there is a change in the input of data.

Walkthrough

- The first step is to input your name

A terminal window with a dark background and a light gray title bar. The title bar contains three small icons on the left. The terminal text is in a monospaced font. The first line is "Input your name: Carlo Dionisio".

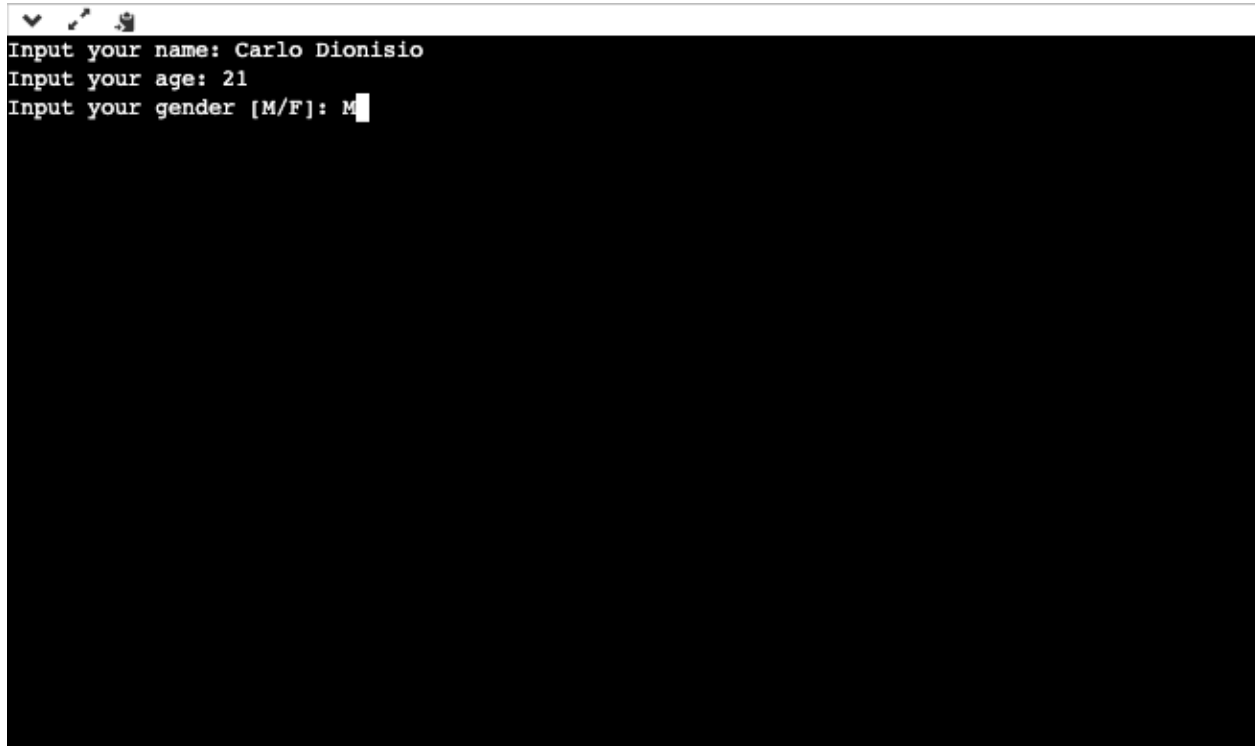
```
Input your name: Carlo Dionisio
```

- After you are done typing in your name, the program will ask for your age

A terminal window with a dark background and a light gray title bar. The title bar contains three small icons on the left. The terminal text is in a monospaced font. The first line is "Input your name: Carlo Dionisio". The second line is "Input your age: 21" followed by a white cursor block.

```
Input your name: Carlo Dionisio
Input your age: 21
```

- The program will now ask for your gender

A terminal window with a black background and white text. The window has a title bar with standard OS icons. The text inside shows the program's progress: it has asked for a name and age, and is now asking for gender. The user has entered 'M' for male.

```
Input your name: Carlo Dionisio
Input your age: 21
Input your gender [M/F]: M
```

- You must now input your height in meters

A terminal window with a black background and white text. The text inside shows the program's progress: it has asked for a name, age, and gender, and is now asking for height. The user has entered '1.80' for height in meters.

```
Input your name: Carlo Dionisio
Input your age: 21
Input your gender [M/F]: M
Input your height(in meters): 1.80
```

- And lastly, the program will now ask you to input your weight in kilograms.

```
Input your name: Carlo Dionisio
Input your age: 21
Input your gender [M/F]: M
Input your height(in meters): 1.80
Input you weight(in kg): 72
```

- The program will display your body mass index (BMI) and it will tell you if you are underweight, normal weight, or overweight. If you are underweight, our program will recommend you to gain weight. If you are normal weight, our program will ask you if you want to gain or maintain weight, and if you are overweight, the program will advise you to lose weight. Choose what you would like to do.

```
Input your name: Carlo Dionisio
Input your age: 21
Input your gender [M/F]: M
Input your height(in meters): 1.80
Input you weight(in kg): 72

Your calculated BMI is 22.22 (Normal Weight)

What would you like to do?
(a) Maintain Weight
(b) Gain Weight
> b
```

- The program will now ask for your level of activity, if you are sedentary, lightly active, moderately active, or very active. Input your answer.

```
Input your name: Carlo Dionisio
Input your age: 21
Input your gender [M/F]: M
Input your height(in meters): 1.80
Input you weight(in kg): 72

Your calculated BMI is 22.22 (Normal Weight)

What would you like to do?
(a) Maintain Weight
(b) Gain Weight
> b
Describe your level of activity?
(a) Sendentary
(b) Light Activity
(c) Moderate Activity
(d) Very Active
> c
```

- The program will now display the recommended amount of calories you should be consuming per day including the macronutrients. Depending on your goal, the program will give you a workout routine that can be easily done at home.

```
You should be consuming more than 2704.750 calories per day
Protein  35%
Carbs    45%
Fat      20%

Push ups      15 reps / 5 sets
Pull ups      10 reps / 5 sets
Squats        15 reps / 5 sets
Sit ups       20 reps / 5 sets
Jogging       30 mins
Plank         2 mins / 5 sets

...Program finished with exit code 0
Press ENTER to exit console.
```