

EGBI 122 Pair Project - healthtracker_final.py

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Overview

This project is a health tracking website which has BMI, BMR, TDEE calculator and can collect calories data for last 7 days. Using Gradio as a library to build the website, which pandas and plotly are also included in this project.

Technologies

- python : main language
- gradio : create interface
- pandas : analyze data
- plotly : plot and design graph

Code explanation and steps

1. Collect data

Create lists for BMI history and calories data which input from user. When close the website, all list data will be deleted. So this code is good only at calculating but not suitable for long term data.

2. BMI calculator and history

Use BMI formula which is $BMI = \frac{weight(kg)}{height(m)^2}$ to calculate user data. There are four categories

of BMI which are

$BMI < 18.5$	= Underweight
$18.5 \leq BMI \leq 24.9$	= Normal
$25 \leq BMI \leq 29.9$	= Overweight
$30 > BMI$	= Obese

BMI tracker lets user track their data overtime. It displays progress on a line graph and lists entries in a history table. If data is entered for a date that already exists, the old entry is automatically replaced.

3. BMR and TDEE calculator

BMR or Basal Metabolic Rate is a number of calories your body needs, divided into female formula and male formula

$$BMR_{female} = (10 \times weight) + (6.25 \times height) - (5 \times age) + 5$$
$$BMR_{male} = (10 \times weight) + (6.25 \times height) - (5 \times age) - 161$$

TDEE, or Total Daily Energy Expenditure, is the total number of calories your body burns in a 24-hour period, including calories burned at rest (Basal Metabolic Rate or BMR), during daily physical activities, and through the thermic effect of food.

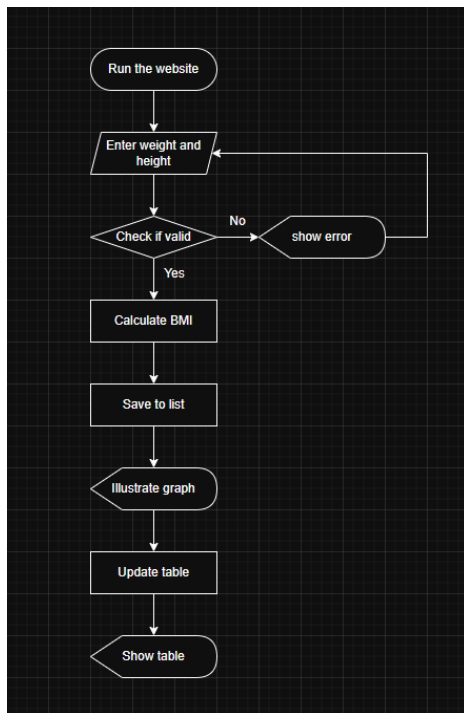
$$TDEE = BMR \times Activity\ factor$$

4. Calories Tracker

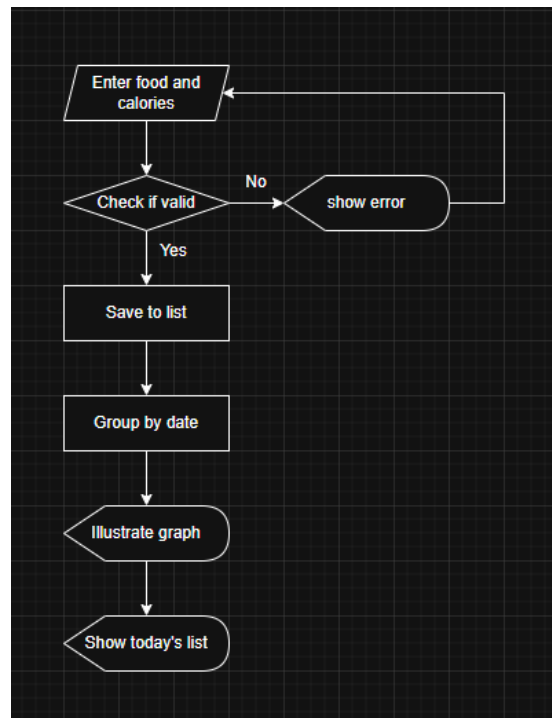
Calorie Tracker helps users log their food intake and visualize calorie consumption. To use it, simply enter a food name, the number of calories, and a date (or leave it blank to use today's date), then click "Add Entry." The app displays a bar graph showing daily calorie totals for the past 7 days, along with a list of foods eaten today and the total calories consumed.

Flow charts show how data run through the web

BMI flow chart



Food tracker flow chart



Advantage of this web

The app is designed to be easy to use, featuring a simple, clean layout with only three pages, clear buttons, and labels. It works smoothly on both phones and computers. It's also accurate, using real medical formulas for BMI and scientifically backed methods for BMR, along with standard BMI categories. Additionally, calculations happen instantly, and graphs update in real time.

Limitations

The app currently has some limitations in both data storage and features. In terms of data storage, all data is lost when the app is closed, there's no option to save to a file, only one user can use the app at a time, and there is no backup

system. On the feature side, the app lacks a login system, does not allow data sharing, cannot export entries to Excel, and does not provide meal suggestions.