



VIRGINIA COMMONWEALTH UNIVERSITY

Statistical analysis and modelling (SCMA 632)

A8: APP DEVELOPMENT

USING STREAMLIT

Daniel Joe Gasper

V01151514

Date of Submission: 30/07/2025

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INTRODUCTION

Maintaining good health requires understanding key indicators such as **Body Mass Index (BMI)**, **blood pressure**, **cholesterol levels**, physical activity, and diet habits. These metrics provide valuable insights into a person's overall well-being and help identify potential health risks early.

The **Health Status Predictor** is a simple yet powerful web application designed to assess an individual's overall health profile. By combining essential health inputs such as **height**, **weight**, **BMI**, **blood pressure**, **cholesterol**, **activity level**, and **diet type**, the app uses a trained **machine learning model** to predict whether a person is “**Healthy and Fit**” or “**Unhealthy and Not Fit**.”

This tool is especially useful for:

- **Individuals** looking to track their wellness status.
- **Healthcare professionals** for quick health risk screening.
- **Fitness coaches** to guide clients toward healthier lifestyle choices.

Objectives

- **To build a machine-learning-powered health assessment tool** that predicts whether an individual is “Healthy and Fit” or “Unhealthy and Not Fit.”
- **To combine key health indicators** like BMI, blood pressure, cholesterol levels, physical activity, and diet type for a comprehensive evaluation.
- **To provide an easy-to-use web interface** (using Streamlit) for both single user input and bulk (batch) predictions via CSV uploads.

WHAT THIS APP IS

- A machine learning-powered web application built using Streamlit.
- Designed to assess a person's overall health status.
- Uses multiple health indicators: **BMI, blood pressure, cholesterol, activity level, and diet type.**
- Provides an **interactive and user-friendly interface** for single or bulk predictions.

WHAT IT DOES

- Predicts health status as either "Healthy and Fit" or "Unhealthy and Not Fit."
- Gives a confidence score for each prediction.
- Visualizes health insights with tools like a color-coded BMI gauge and distribution charts.
- Helps users and health professionals identify risks and make informed lifestyle choices.
 - Shows a graph with most contributing factors for Unhealthy and Healthy Lifestyle.

Link to Website: <https://healthpredictorstatus12.streamlit.app/>

Link to Github: <https://github.com/daniel12joe/A8-Real/blob/main/app.py>

<https://github.com/daniel12joe/A8-Real/blob/main/requirements.txt>

https://github.com/daniel12joe/A8-Real/blob/main/health_tracker_500.csv Synthetic Sample Data

Health Status Predictor

This app predicts whether a person is **Healthy and Fit** or **Unhealthy and Not Fit** using BMI, blood pressure, cholesterol, activity, and diet.

Input health details:

Height (cm)
170

Weight (kg)
70

BP Systolic
120

BP Diastolic
80

Cholesterol (mg/dL)
180

Activity Level
Sedentary

Diet Type
Balanced

Prediction: Unhealthy and Not Fit

Confidence: 89.00%

Your BMI: 24.2

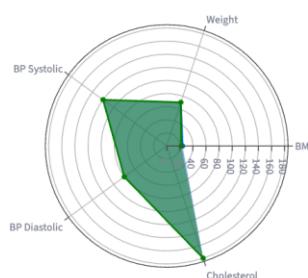
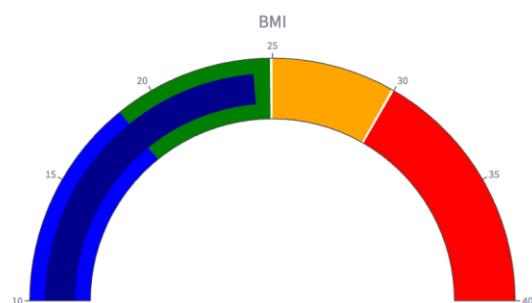
Why this prediction?

Contributing factors: Low Activity Level

Personalized Health Tips

- Incorporate at least 30 minutes of exercise 5 days a week.

Visual Analysis



LINKEDIN: <https://www.linkedin.com/feed/update/urn:li:activity:7356386472955990017/>



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Can machine learning help you understand your health in seconds? I'm thrilled to share my latest project – the Health Status Predictor App! This machine learning-powered web app, built using Streamlit, predicts whether a person is Healthy and Fit or Unhealthy and Not Fit based on key parameters like BMI, Blood Pressure, Cholesterol, Activity Level, and Diet. It doesn't just stop at predictions – the app provides personalized health tips, explains which parameters influenced your status (e.g., high BMI, elevated BP), and includes interactive visualizations like BMI gauges, radar charts, and distribution plots for deeper insights. It even supports batch predictions via CSV uploads, making it powerful for analyzing multiple records quickly. Through this project, I honed my skills in building end-to-end ML pipelines, creating intuitive Streamlit interfaces, and using Plotly and Seaborn for impactful data visualization.

Try the app: <https://lnkd.in/g7eAwxUe>

Explore the code: <https://lnkd.in/gN4fbHcJ>

#MachineLearning #Streamlit #HealthTech #DataScience #Python
#Visualization #AI #HealthcareInnovation

Health Status Predictor

This app predicts whether a person is Healthy and Fit or Unhealthy and Not Fit.

Put health details:

(Name)

(Age)

(Weight)

(Height)

(Activity Level)

(Diet)

Blood Pressure (mm Hg)

Cholesterol (mg/dL)

Exercise (min/week)

Smoking (yes/no)

Alcohol (yes/no)

Diet (vegan/vegetarian)

Prediction: Unhealthy and Not Fit

Accuracy: 85.0%

Confidence: 0.9999999999999999

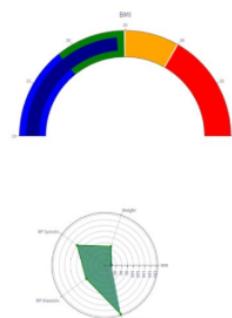
Why this prediction?

Contributing factors: Low Activity Level

Personalized Health Tips

Incorporate at least 30 minutes of exercise 3 days a week.

Visual Analysis



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