FIT PREDICT

PREDICT . PLAN . PROGRESS

Who We Are?

- **Devanshi Dadwal**
  2210990262
- **Bhumi Garg**
  2210990226
- **Dikshant Sohal**
  2210990283
- **Dipanker Sethi**
  2210990287

Overview

THIS PROJECT AIMS TO DEVELOP A MACHINE LEARNING MODEL THAT CAN ANALYSE VARIOUS HEALTH PARAMETERS TO DETECT OBESITY AND ADVICES WEIGHT MANAGEMENT TECHNIQUES.

AIM OF EACH MODEL

MODEL 1

IESTIMATE BODY FAT THAT DO NOT REQUIRE THE INCONVENIENT OR EXPENSIVE ACQUISITION OF AN ACCURATE SCALE.

MODEL 2

EXAMINE THE CORRELATION BETWEEN A VARIETY OF LIFESTYLE FACTORS AND INDIVIDUAL OBESITY LEVELS.

MODEL #3

DELIVER PERSONALIZED EXERCISE PLANS BASED ON INDIVIDUALS' PHYSICAL ATTRIBUTES, AND GENDER TO HELP THEM EFFICIENTLY AND SAFELY REACH THEIR FITNESS GOALS.

Tech Stack

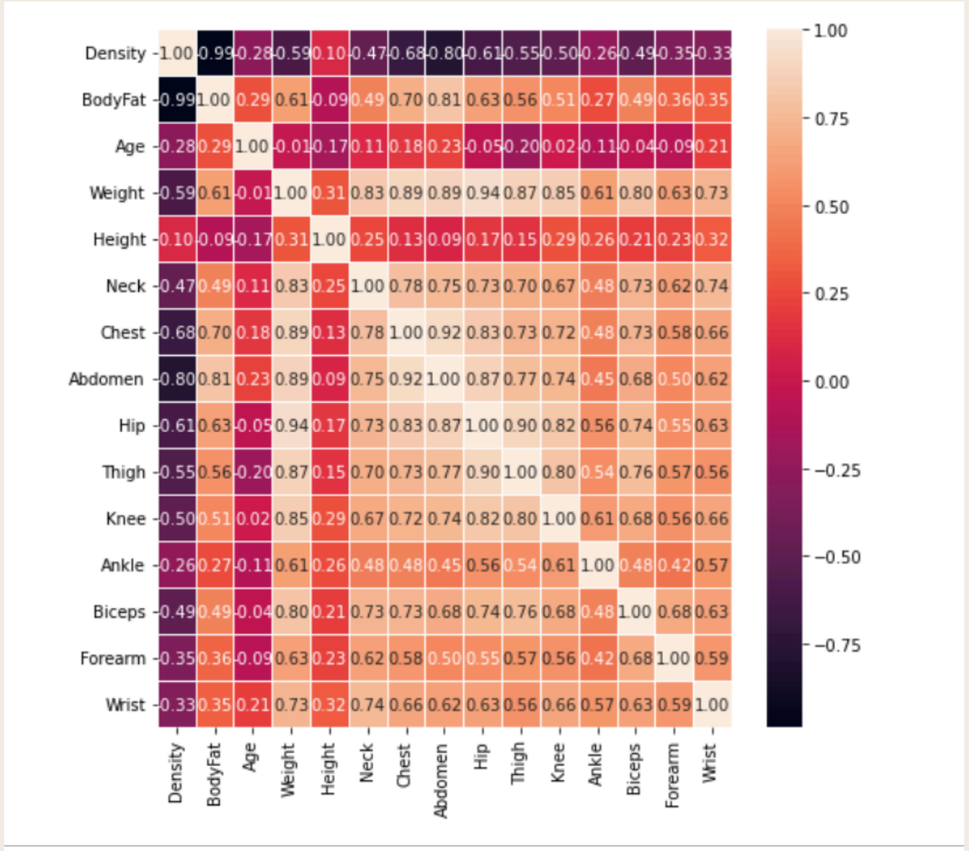
- PYTHON
- STREAMLIT

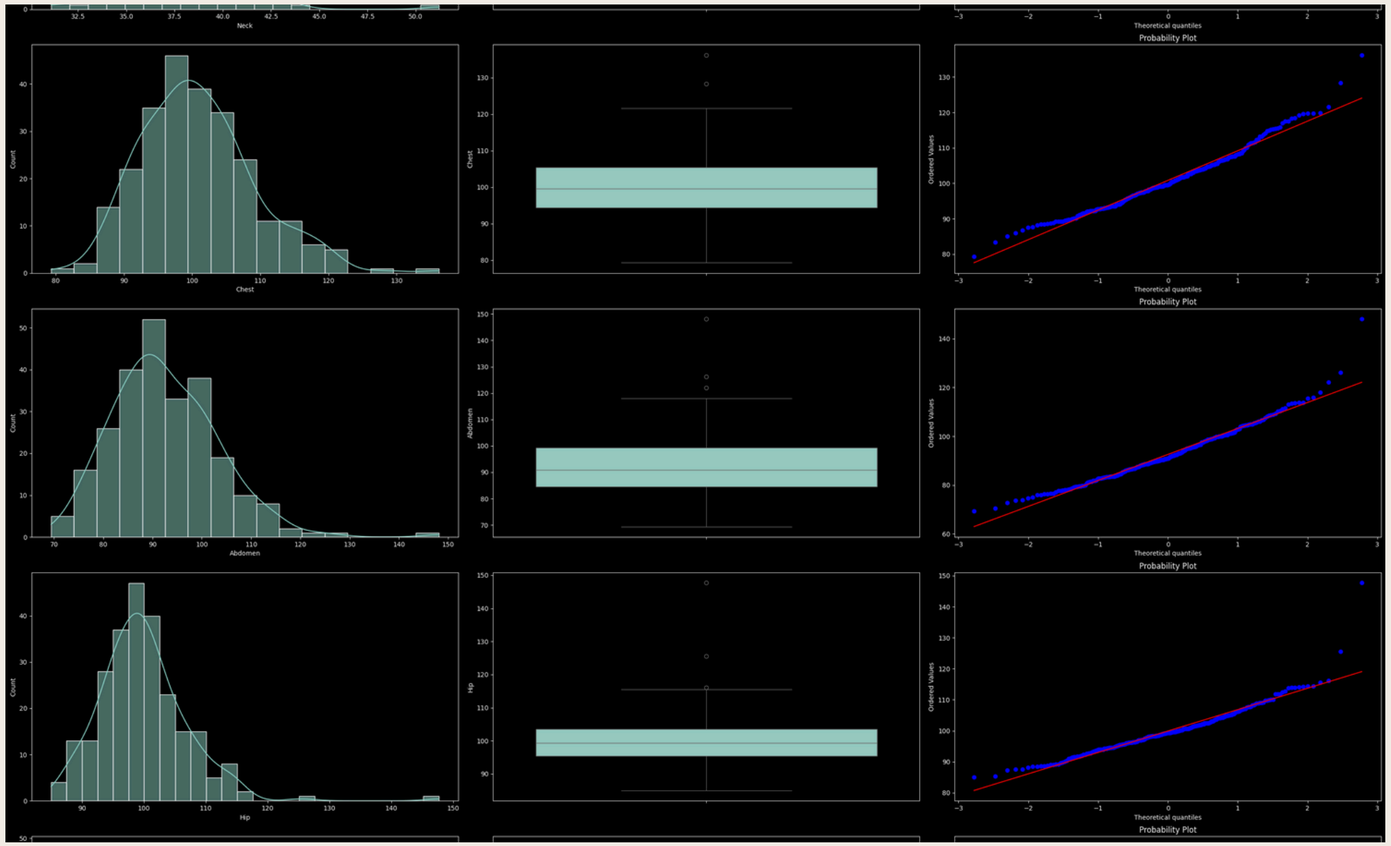
Model 1

Body Fat Percentage Prediction

MODEL USED: LINEAR REGRESSION

DATA DISTRIBUTION:

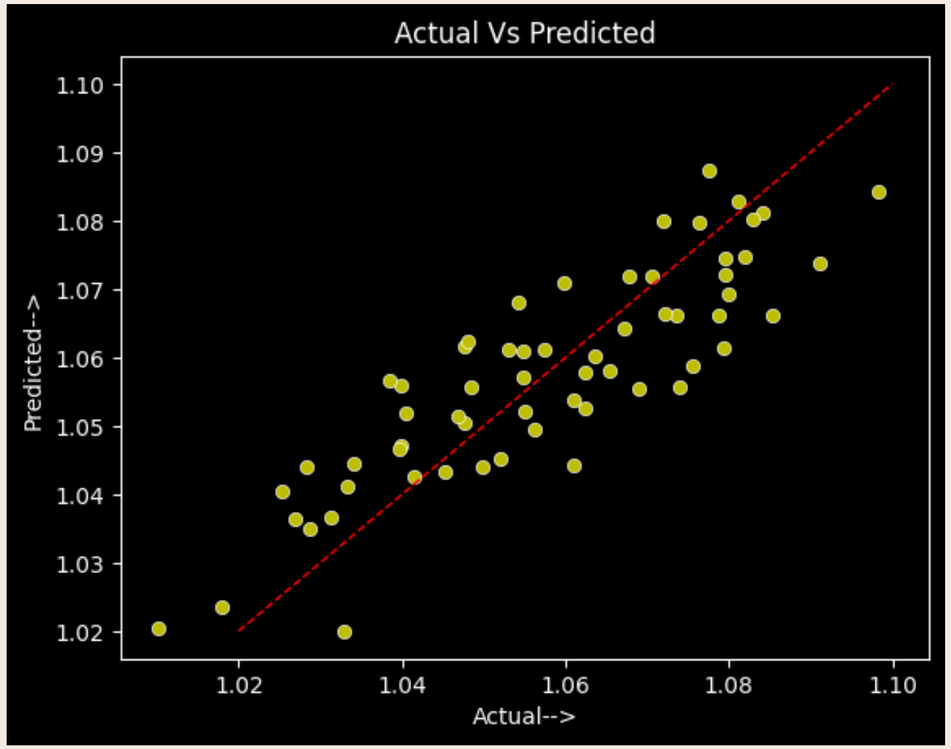




RESULTS

```
0.7384666193188041
0.010085459553433821
```

R2 AND RMSE VALUES



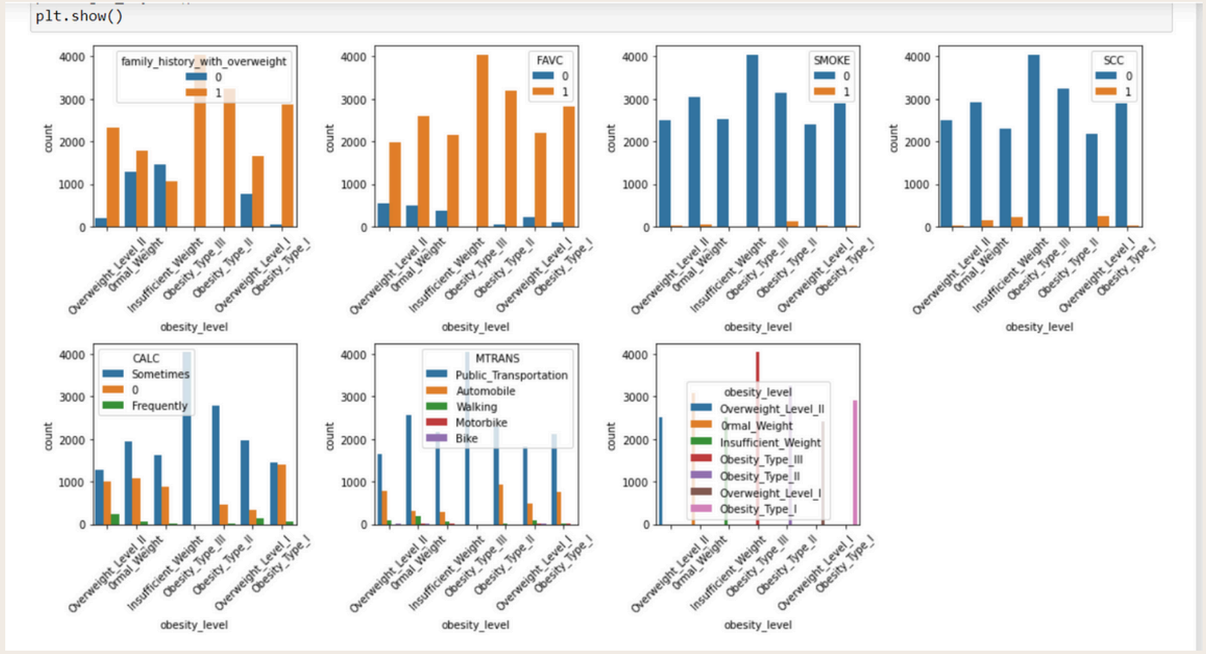
REGRESSION PLOT

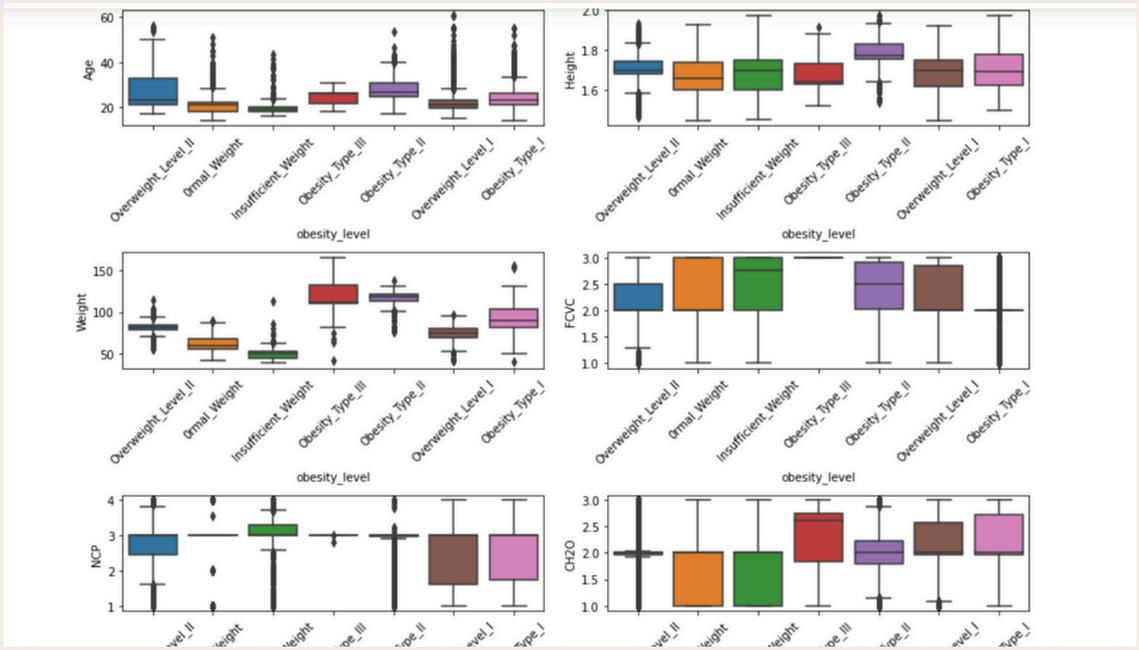
Model 2

Obesity Level Prediction

MODEL USED: RANDOM FOREST

DATA DISTRIBUTION:





RESULTS

Accuracy: 0.99884

	precision	recall	f1-score	support
0rmal_Weight	1.00	1.00	1.00	780
Insufficient_Weight	1.00	1.00	1.00	640
Obesity_Type_I	1.00	1.00	1.00	685
Obesity_Type_II	1.00	1.00	1.00	825
Obesity_Type_III	1.00	1.00	1.00	1017
Overweight_Level_I	1.00	1.00	1.00	611
Overweight_Level_II	1.00	1.00	1.00	632
accuracy			1.00	5190
macro avg	1.00	1.00	1.00	5190
weighted avg	1.00	1.00	1.00	5190

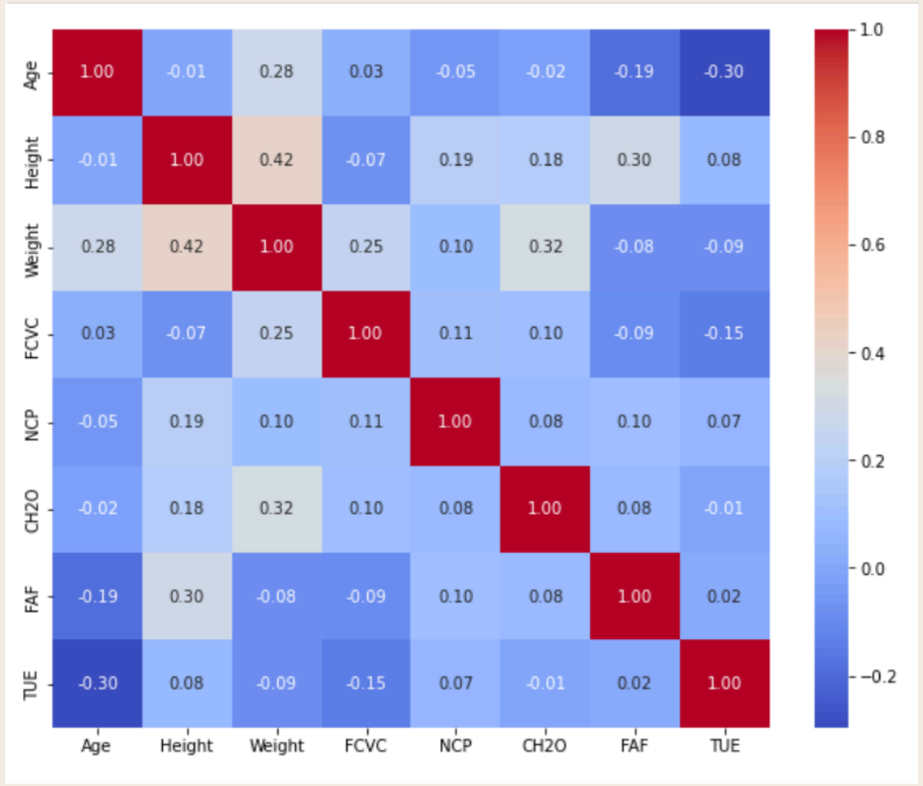
Accuracy = 99.88%

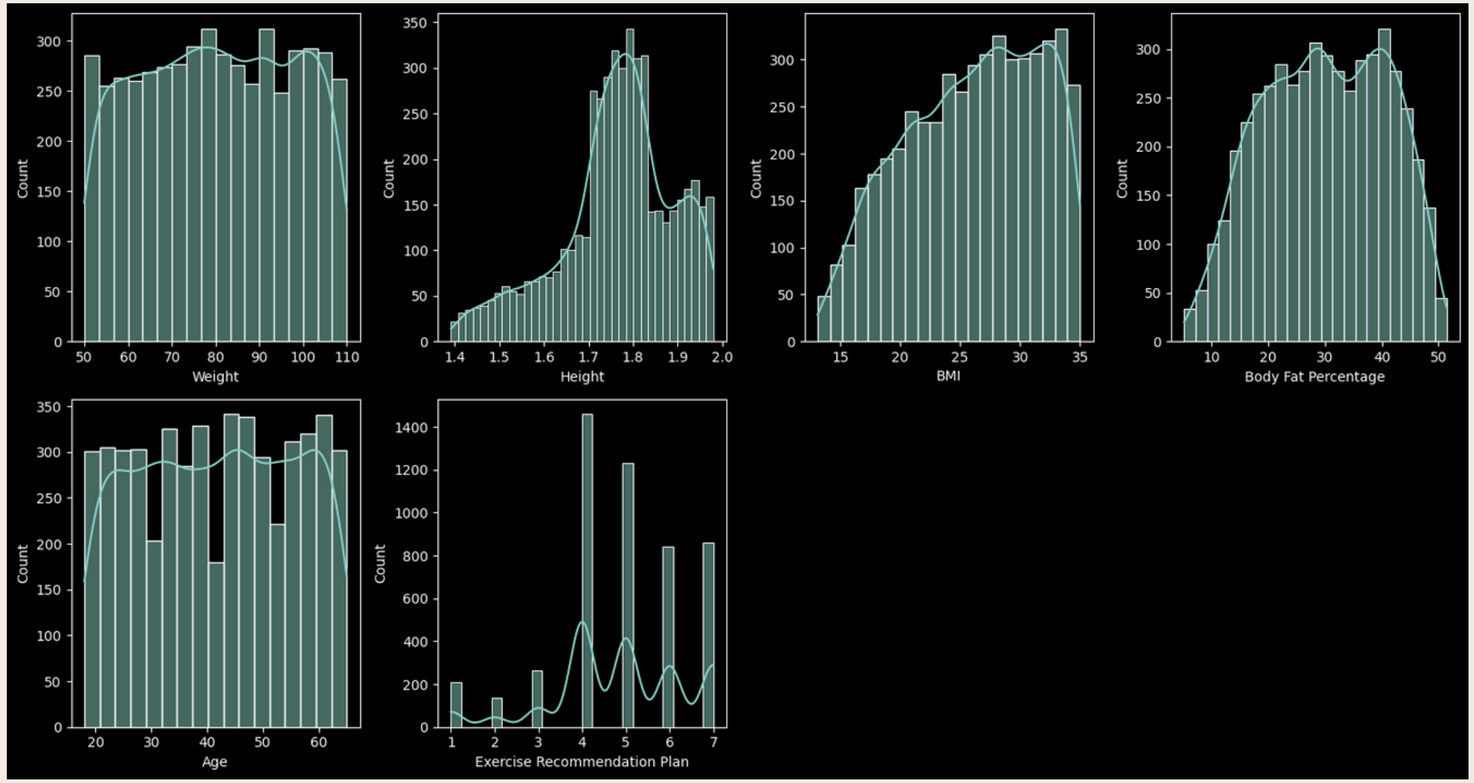
Model 3

Personalized Exercise Plan Recommendation

MODEL USED: DECISION TREE

DATA DISTRIBUTION:



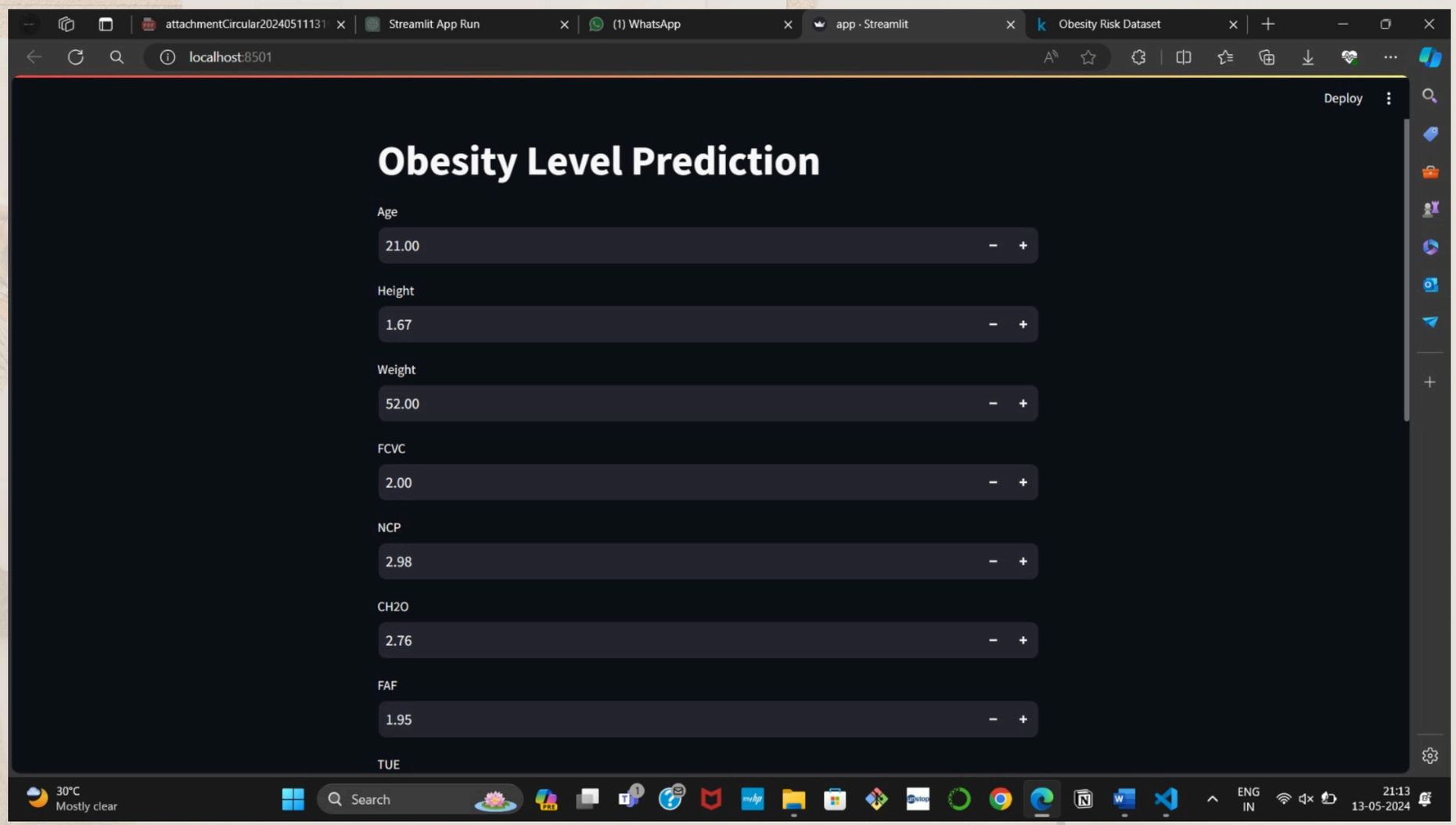


RESULTS

```
Accuracy: 0.998

Classification Report:
              precision    recall  f1-score   support

           1       1.00      1.00      1.00        55
           2       1.00      0.94      0.97        31
           3       0.96      1.00      0.98        48
           4       1.00      1.00      1.00       309
           5       1.00      1.00      1.00       237
           6       1.00      1.00      1.00       161
           7       1.00      1.00      1.00       159

    accuracy                           1.00      1000
   macro avg       0.99      0.99      0.99      1000
weighted avg       1.00      1.00      1.00      1000
```

Accuracy = 99.8%

INTERFACE


attachmentCircular20240511131
Streamlit App Run
(1) WhatsApp
app · Streamlit
Obesity Risk Dataset
localhost:8501
Deploy
Obesity Level Prediction
Age
21.00
Height
1.67
Weight
52.00
FCVC
2.00
NCP
2.98
CH2O
2.76
FAF
1.95
TUE
30°C
Mostly clear
Search
ENG
IN
21:13
13-05-2024


thank
you!