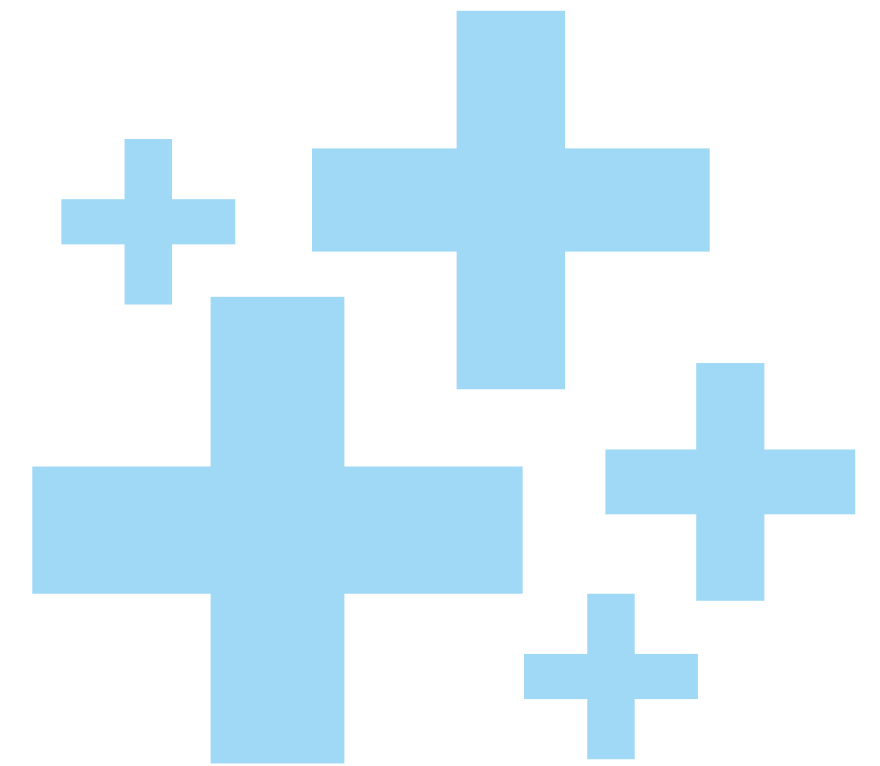


# **PREDICTIVE MODELING OF OBESITY RISK**

**From The Wellness Warriors**



**BSD2223 DATA SCIENCE PROGRAMMING LANGUAGE II  
GROUP PROJECT**

**TOPIC: GOOD HEALTH AND WELLBEING (SDG 3)**

**TO: ASSOCIATE PROFESSOR DR. ROSLINAZAIRIMAH ZAKARIA**

**DATE: 7th JUNE 2024**

# OUR TEAM MEMBERS

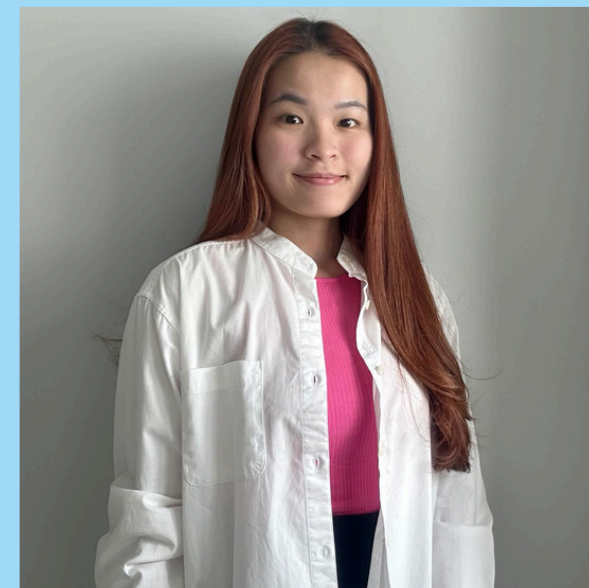
The Wellness Warriors



**NUR ATIEKA  
RAFIEKAH BT  
RAZAK**



**MUHAMMAD  
AIMAN IRFAN  
BIN AHMAD  
MUHYE**



**ELIANE HO  
WAN WEN**



**BATRISYIA  
BINTI ISMAIL**

# Outline

- 01. INTRODUCTION & OBJECTIVE**
- 02. DATASET AND DATA DESCRIPTION**
- 03. DATA ANALYSIS, RESULT, DISCUSSION**
- 04. CONCLUSION**



# INTRODUCTION

Predictive modelling of obesity risk factors is an important field of study addressing the global concern of increasing obesity rates. This project aims to identify high-risk individuals and inform preventive actions by learning about critical risk factors. It combines data science, public health, and behavioral research to enhance public health strategies.

## Importance

Potential to improve public health strategies.  
Analyzes variables such as age, gender, diet, physical activity, and lifestyle.  
Identifies trends and connections increasing obesity risk.  
Informs targeted treatments and individual healthcare plans.  
Reduces risk of obesity-related problems.

## Relevance to SDG 3

- Promotes healthy lifestyles and well-being globally.
- Contributes to achieving SDG 3 objectives.



# OBJECTIVE

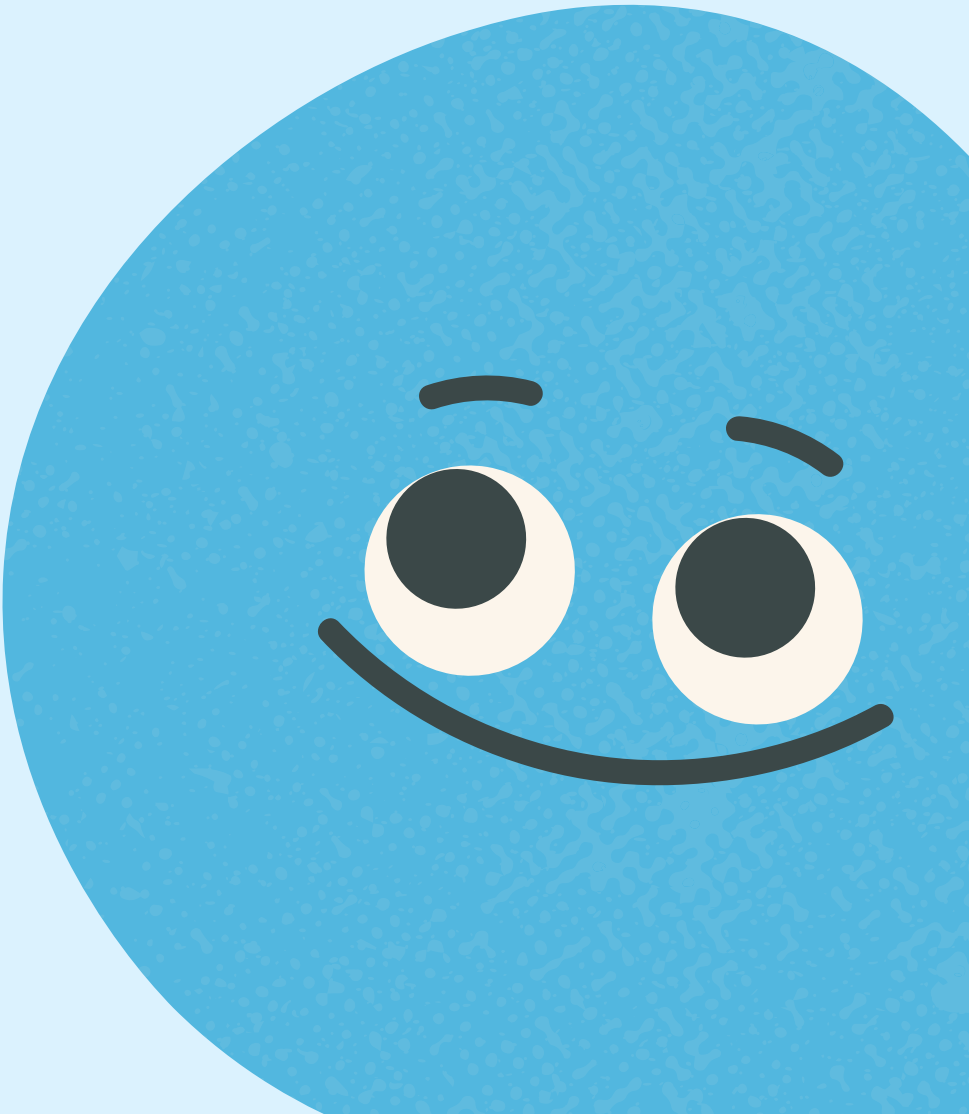
- To investigate the impact of different obesity risk factors on the overall f obesity risk
- To provide knowledge to individual risk profiles about the obesity prevention and management
- To visualize the behavior and habits regarding their obesity level.



# Data Description

Our dataset contains **20759** rows with **18** columns.

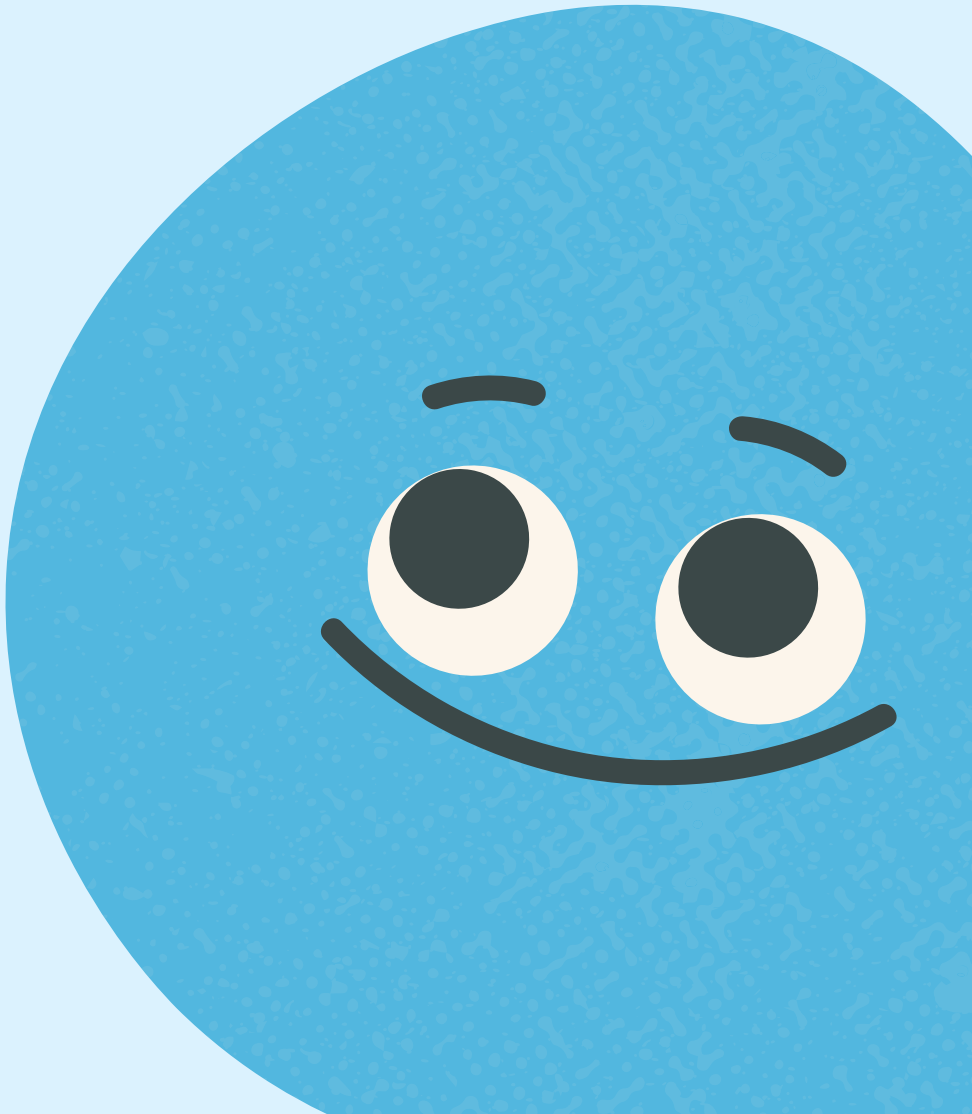
Title	Explanation
Gender	Gender of the Patients
Age	Age of the Patients
Height	Height of the Patients
Weight	Weight of the Patients
family_history_ with_overweight	Family History of Patients with Overweight
FAVC	Frequent consumption of high-caloric food





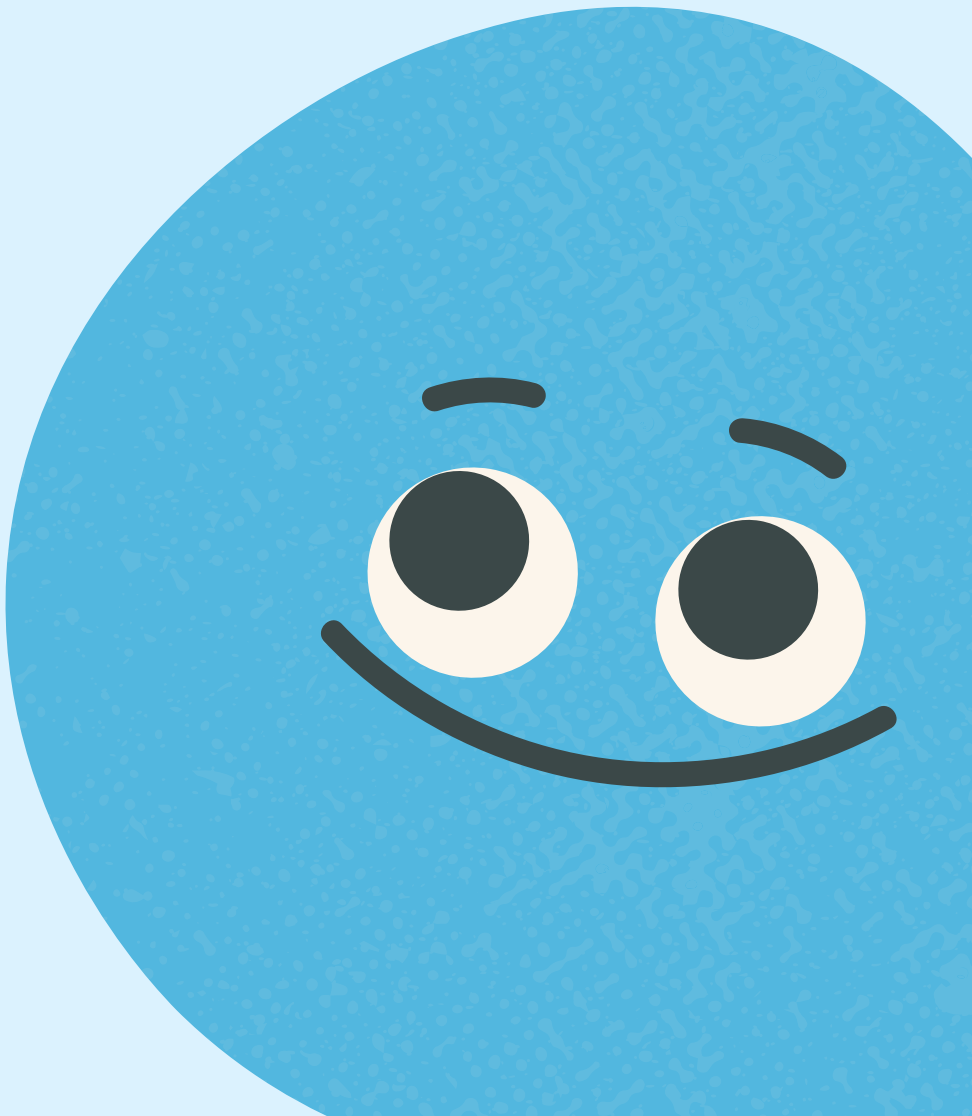
# Data Description

Title	Explanation
FCVC	Frequency of consumption of vegetables
NCP	Number of main meals
CAEC	Consumption of food between meals
SMOKE	History of Smoking of Patients
CH2O	Daily water consumption
SCC	Caloric beverages consumption



# Data Description

Title	Explanation
FAF	Physical activity frequency
TUE	Time spent using technological devices
CALC	Consumption of alcohol
MTRANS	Mode of transportation
Level	Target variable representing obesity level
BMI	BMI of the patients





**Dashboard 1:**

# Overview Analysis

**Age**

Distribution  
of Age

**Obesity**

Obesity Level  
Distribution

**Relationship**

Relation of Height  
and Weight

**Height**

Distribution of  
Height

**Weight**

Distribution of  
Weight



## Dashboard 2:

# Demographics

### Obesity Level by Gender

- Horizontal bar chart
- Both gender highest frequency at obesity

### Weight Distribution by Gender

- Boxplot
- The high obesity level is because the high average weight

### Height Distribution by Gender

- Boxplot
- Shorter individual may have higher BMI





### Transportation Mode by Gender

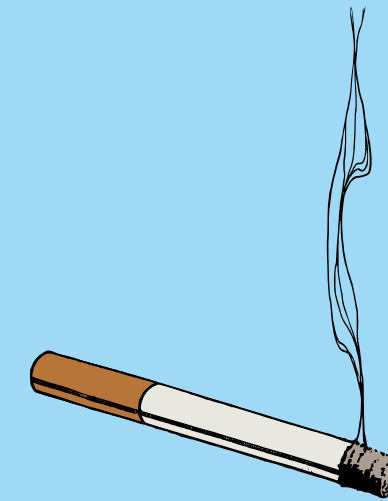
- Bar chart
- Majority both gender used public transportation as their daily transportation



Dashboard 3:

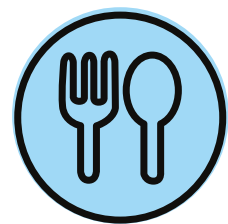
# Lifestyle

-  **Alcohol Consumption by Obesity Level**
-  **Physical Activity Frequency by Obesity Level**
-  **Smoking Status by Obesity Level**
-  **Time Using Technology Devices by Obesity Level**



## Dashboard 4:

# Eating Habit



## Frequent Consumption of High-Caloric Food by Obesity Level

- obesity type 3 have higher frequent consume high-caloric foods, significantly contributing to their higher BMI.
- Underweight individuals, suggesting poor eating habits.
- Normal weight group does not maintain a balanced diet



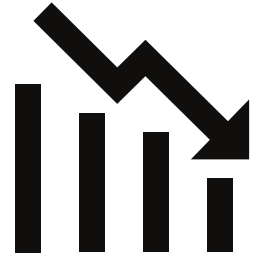
## Caloric beverages consumption (SCC)

- 96.7% do not consume caloric beverages.
- Only 3.3% do, indicating common dietary practice.
- Alcoholic beverages contribute significantly to daily calorie intake.
- Broad use impacts public health, especially in weight management initiatives.

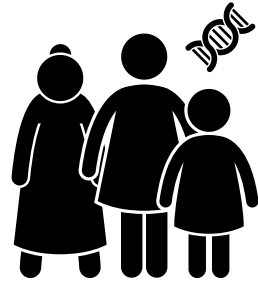
GOOD  
HABITS



# Conclusion



**Utilizes data analytics to predict and reduce obesity risk.**



**Analyzes genetic, behavioral, and environmental risk factors.**



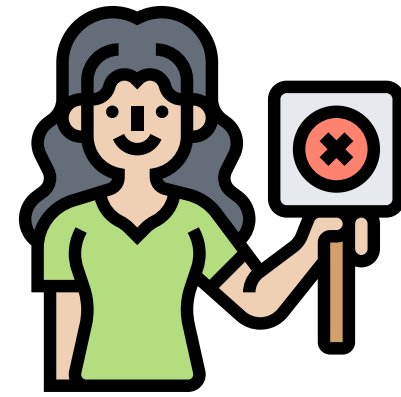
**Aims to develop personalized obesity prevention strategies based on individual risk profiles.**



**Potential to improve public health strategies, identify high-risk individuals, and guide targeted treatments.**



# Limitation

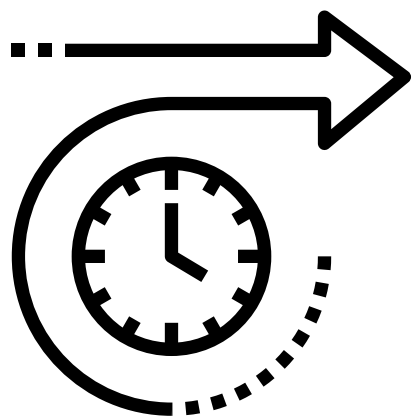


## Limited Dataset

Missed information about obesity in older age groups.

## Limited Time

Missed the chances to explore age and BMI relationship for a better understanding.





# THANK YOU

