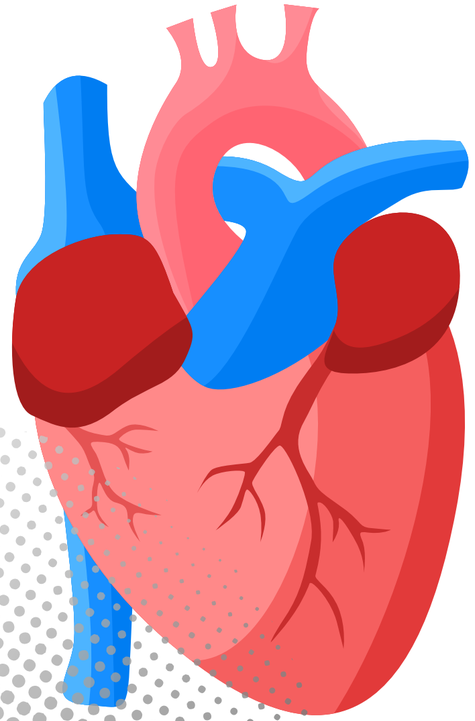
HEART DISEASE DIAGNOSTIC ANALYSIS



SHAIK SHAMA PARVEEN

INTRODUCTION

- Diagnostic investigation in cardiology are methods of identifying heart conditions associated with unhealthy, pathologic, heart function.
- Cardiovascular disease(CVDs) are the leading cause of death globally,taking an estimated 17.9 million lives each year.Diagnostic cardiology is used to evaluate the health of the heart.

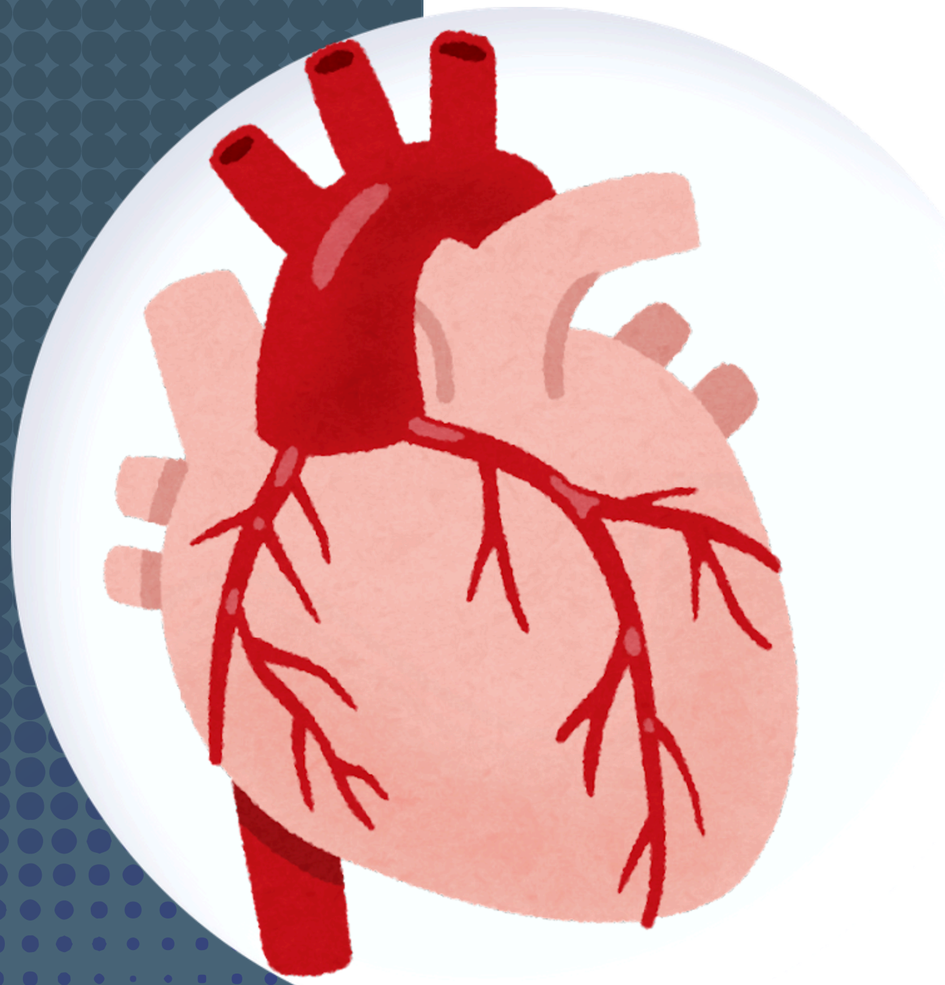
OBJECTIVE

- The goal of this project is to analyse the heart disease occurrence, based on a combination of features that describes the heart disease.
- To enhance the diagnostic process of heart disease using advanced data analysis techniques.

PROBLEM STATMENT

- Health is real wealth in the pandemic time we all realized the brute effects of covid-19 on all irrespective of any status. You are required to analyze this health and medical data for better future preparation.
- The database extracts various information such as Heart disease rates, Heart disease by gender, by age.

ABOUT DATASET



HEART DISEASE DIAGNOSTIC DATASET

The Dataset Contains 1025 Rows and 14 Columns.

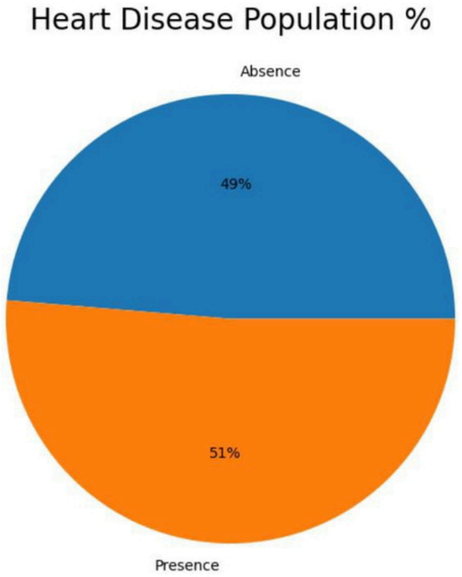
age: The person's age in years
sex: The person's sex (1 = male, 0 = female)
cp: The chest pain experienced (Value 1: typical angina, Value 2: atypical angina, Value 3: non-anginal pain, Value 4: asymptomatic)
trestbps: The person's resting blood pressure (mm Hg on admission to the hospital)
chol: The person's cholesterol measurement in mg/dl
fbs: The person's fasting blood sugar (> 120 mg/dl, 1 = true; 0 = false)
restecg: Resting electrocardiographic measurement (0 = normal, 1 = having ST-T wave abnormality, 2 = showing probable or definite left ventricular hypertrophy by Estes' criteria)
thalach: The person's maximum heart rate achieved
exang: Exercise induced angina (1 = yes; 0 = no)
oldpeak: ST depression induced by exercise relative to rest
slope: the slope of the peak exercise ST segment (Value 1: upsloping, Value 2: flat, Value 3: down sloping)
ca: The number of major vessels (0-3)
thal: A blood disorder called thalassemia (3 = normal; 6 = fixed defect; 7 = reversable defect)
num: Heart disease (0 = no, 1 = yes)

METHODOLOGY

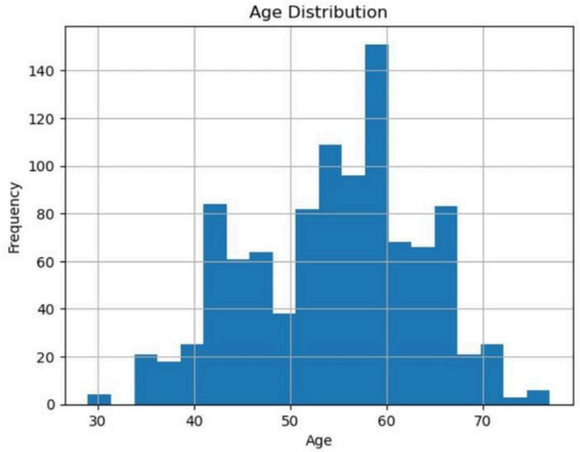
For the project Heart Disease Diagnostic , Initially I will use collect the dataset and clean the data by using python. I Analyze the data by using python and find the relationships between them. In the dataset I will compare the with different columns and find the insights and conclusions for the data. I use visualization tool Power BI for charts and graphs for different data relations and conclusions. I will also perform the EDA and statistics test for the data. Firstly I use python for cleaning and finding relationship of data and visualize by using Power BI.

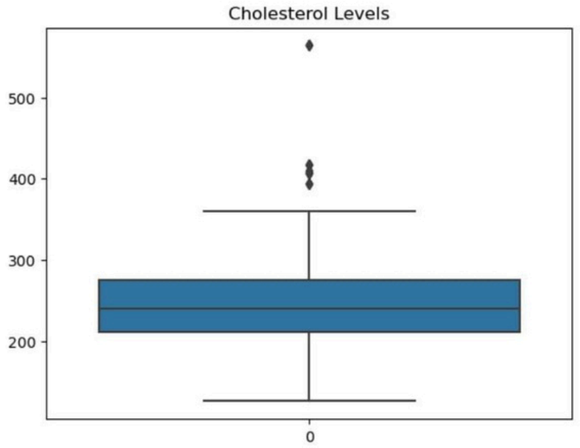
VISUALIZATION AND INSIGHTS

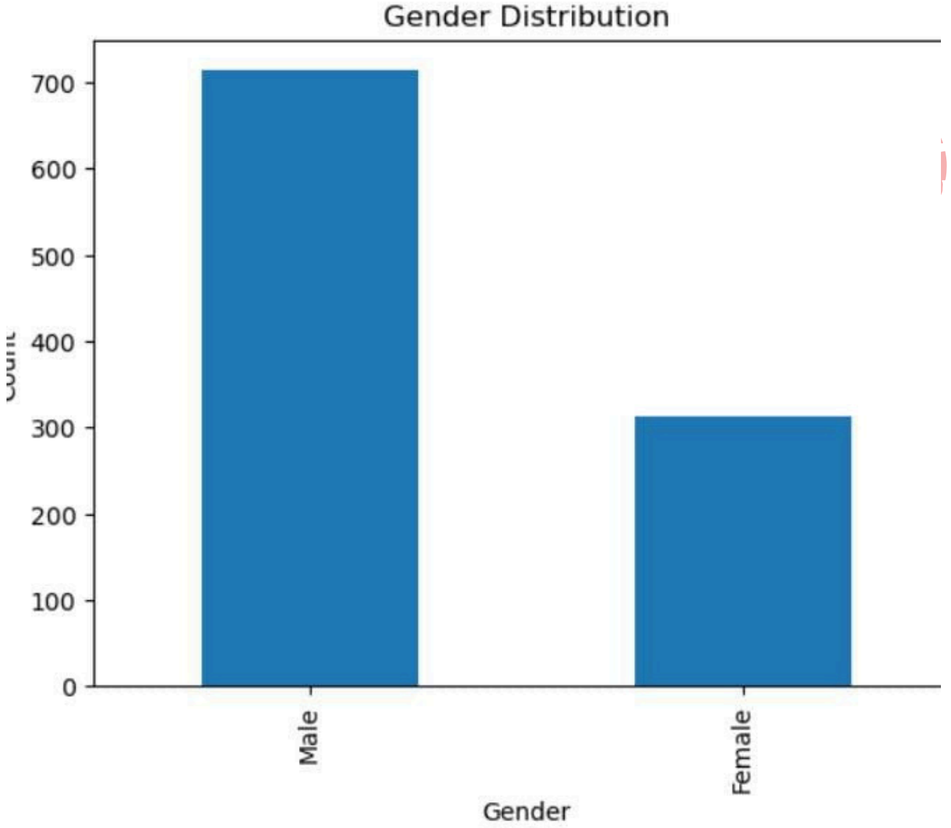
EDA FOR HEART DISEASE DIAGNOSTIC ANALYSIS

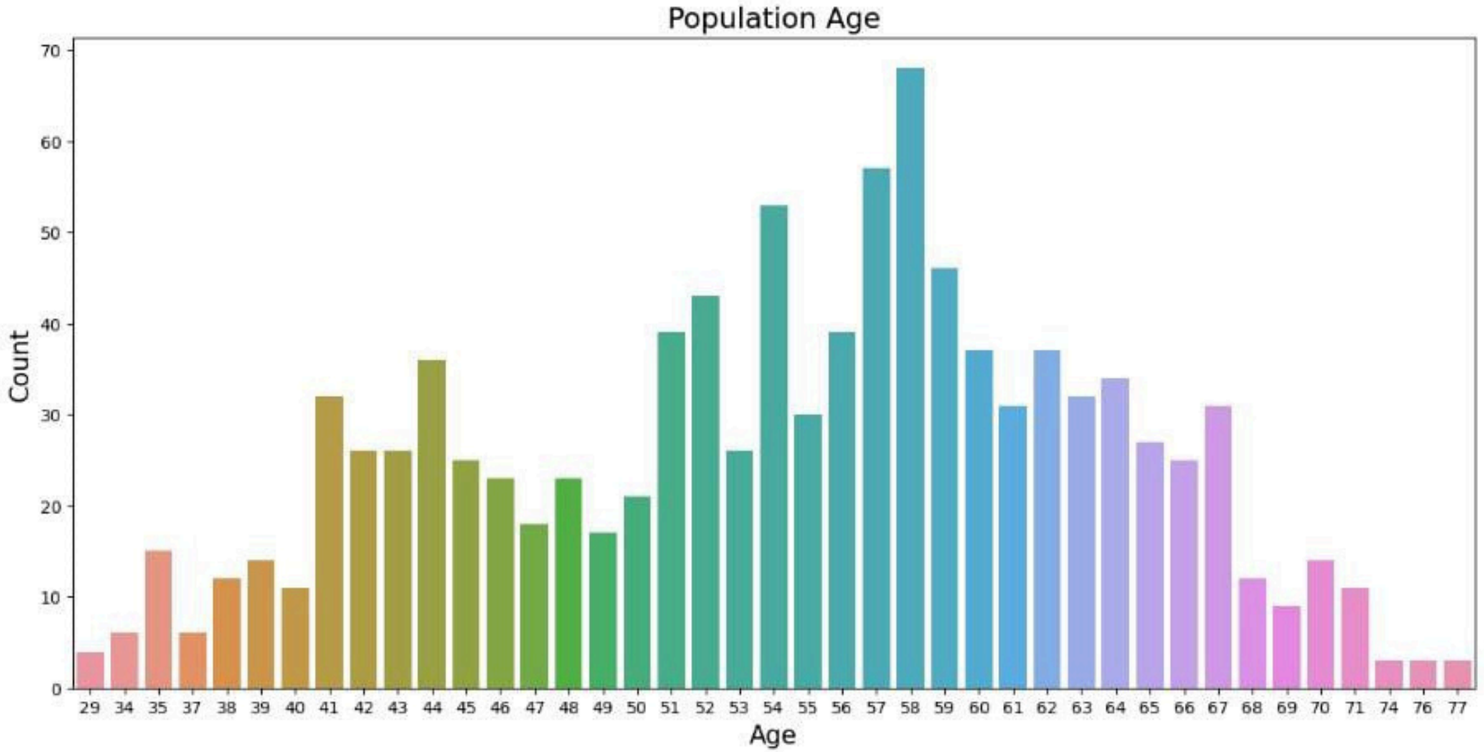


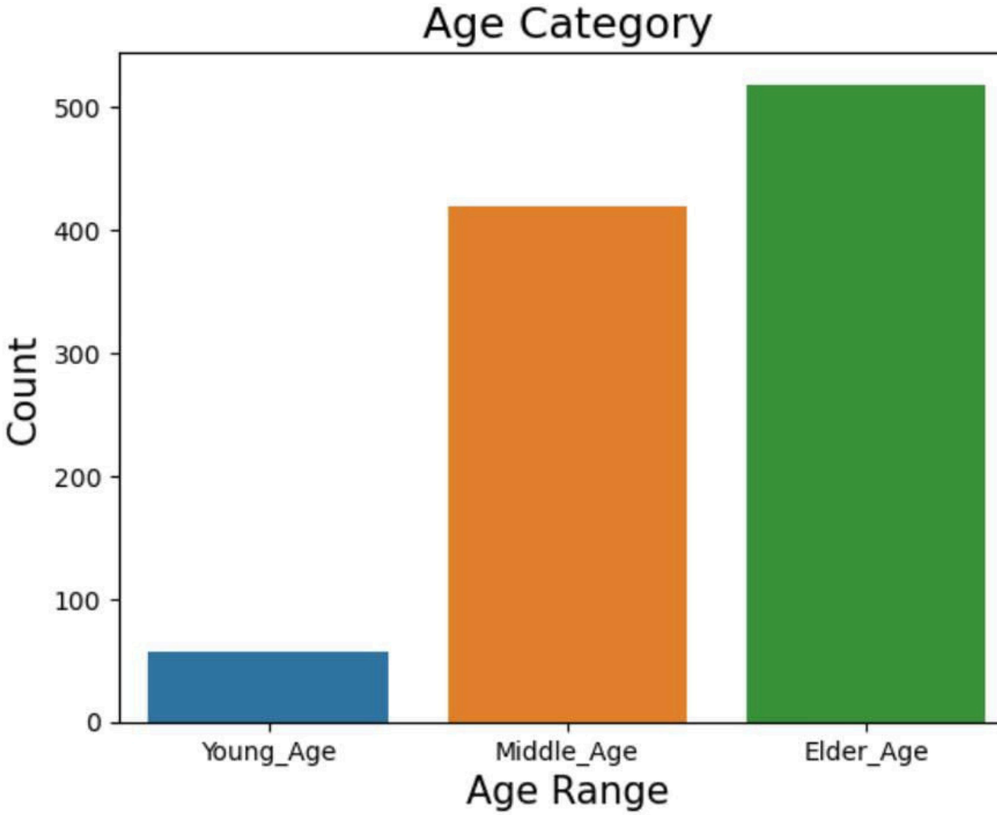
From the overall population, pepole having heart disease(51%) are grater than those who have heart disease(49%)



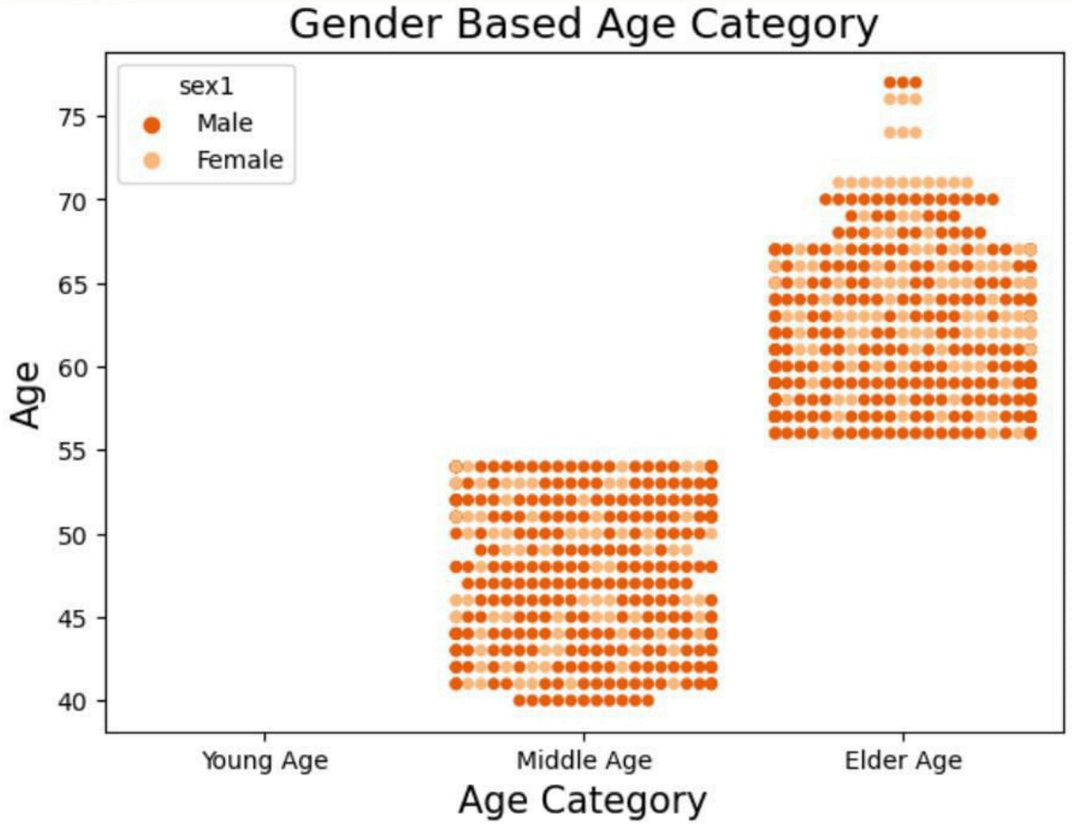




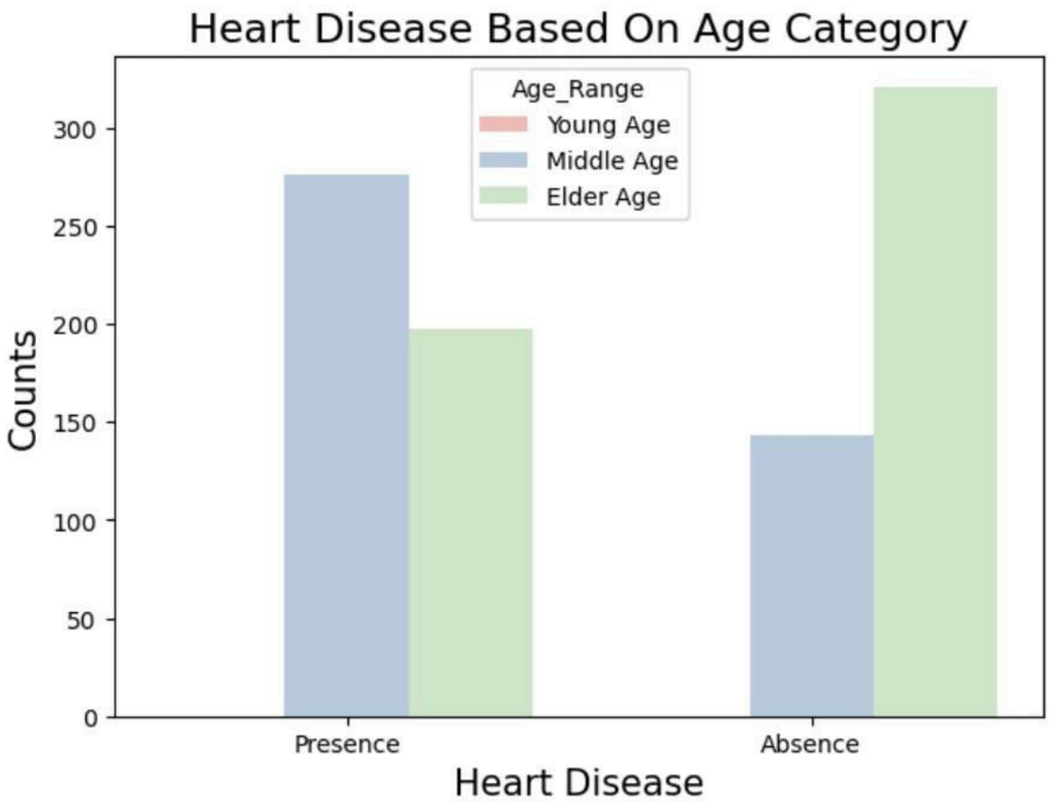




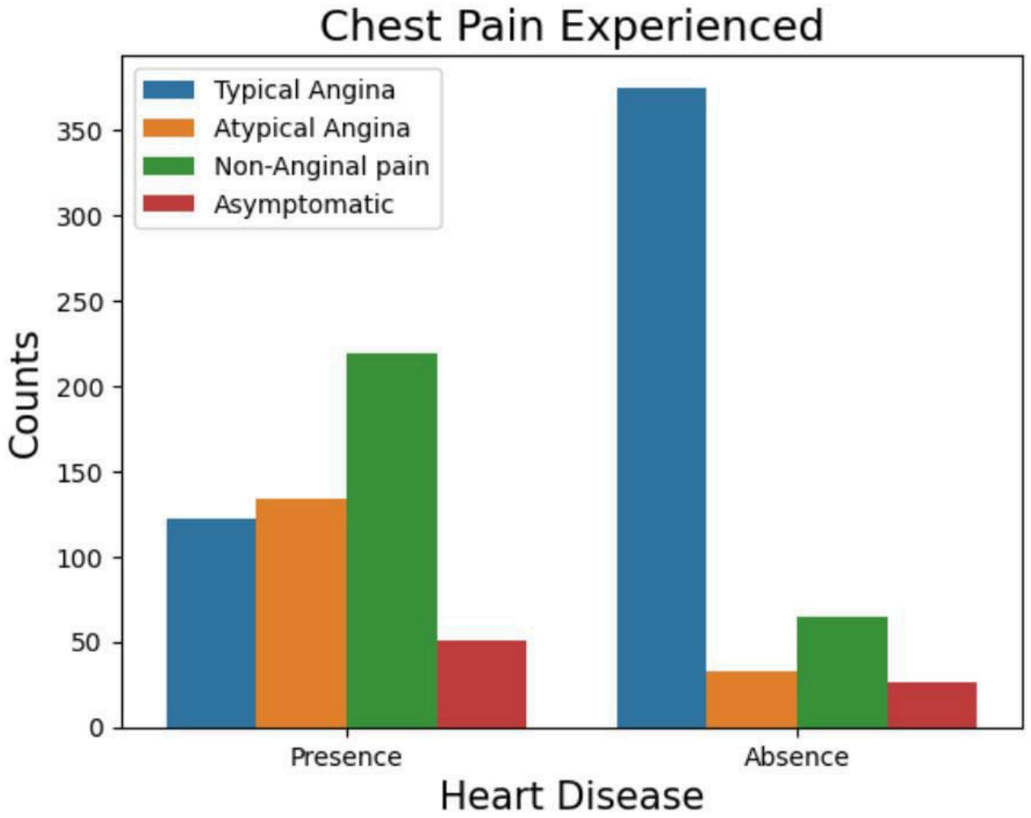
Elderly Aged People (>55) are more in our population


Gender Based Age Category
sex1
Male
Female
Age
75
70
65
60
55
50
45
40
Young Age
Middle Age
Elder Age
Age Category

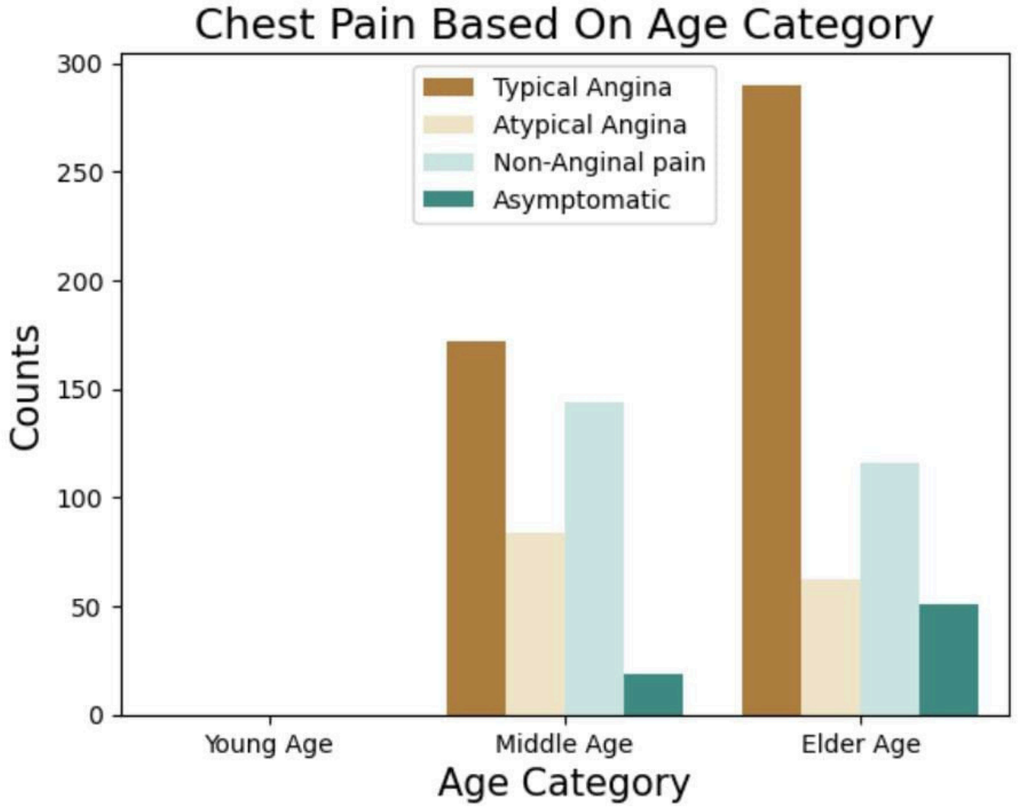

Blood Pressure
Person's Resting Blood Pressure(mm Hg)
140
120
100
80
60
40
20
0
Male
Female
Sex

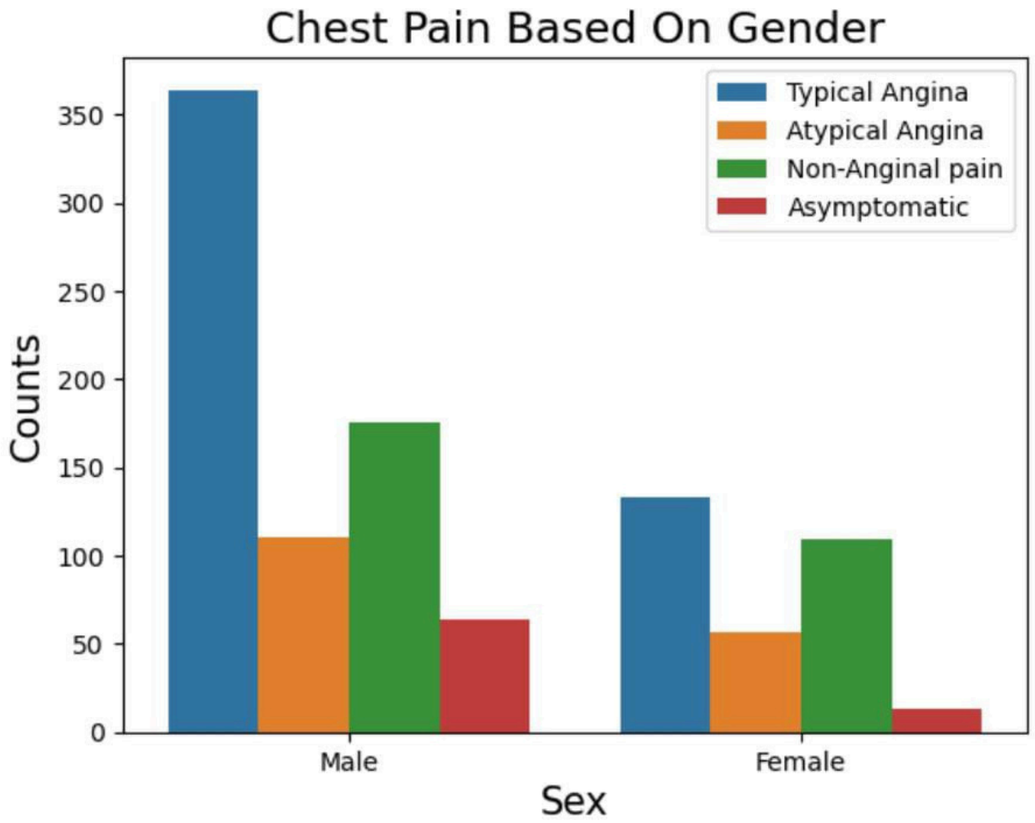


Elderly Aged People (>55) are more prone to heart disease



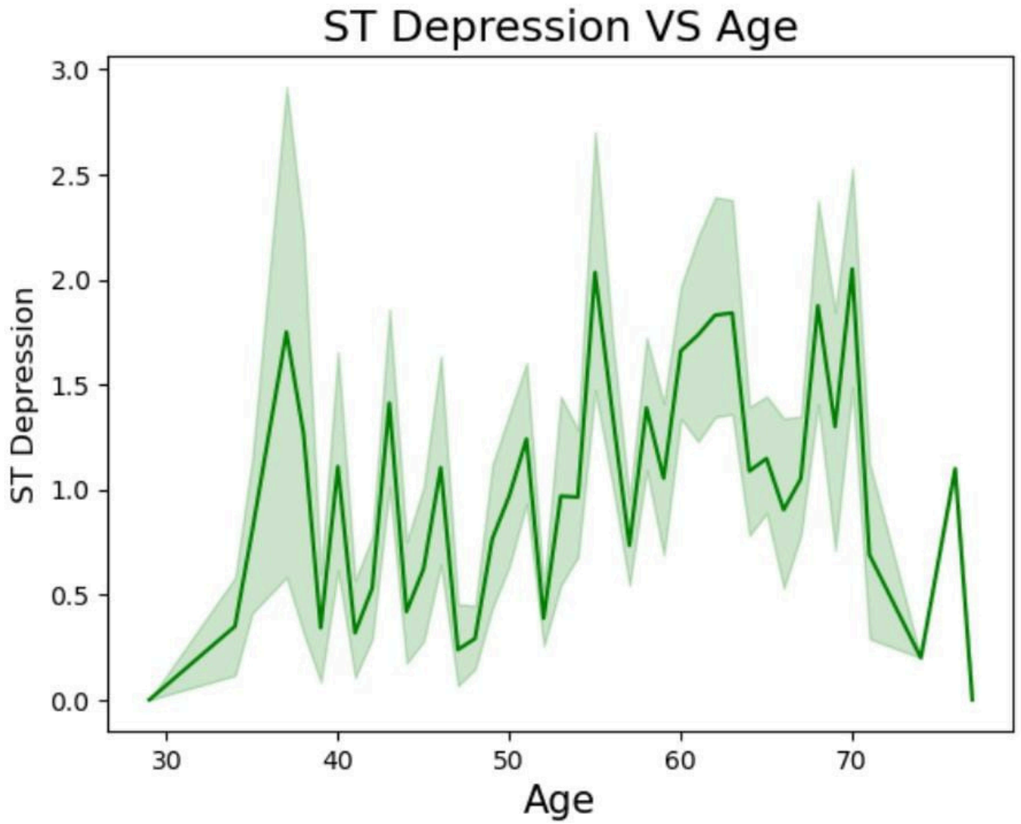
It seems people having asymptomatic chest pain have a higher chance of heart disease.

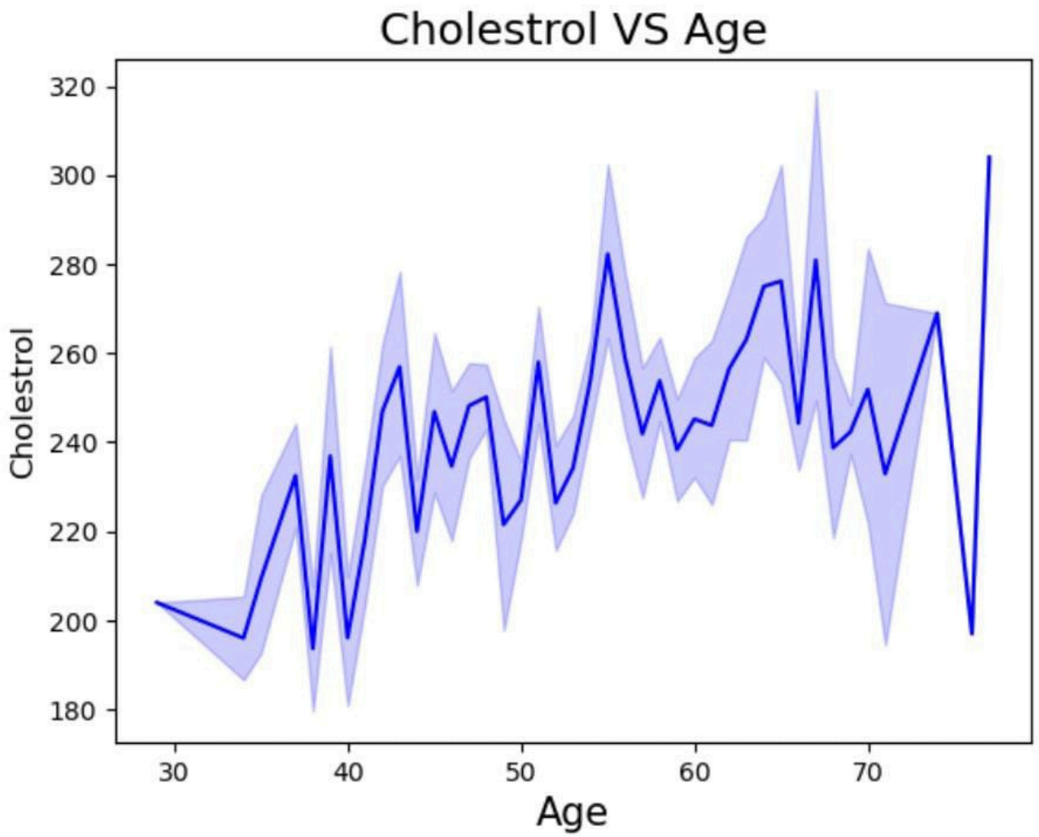




➢ There is very high number of Asymptomatic Pain in Elderly age Category

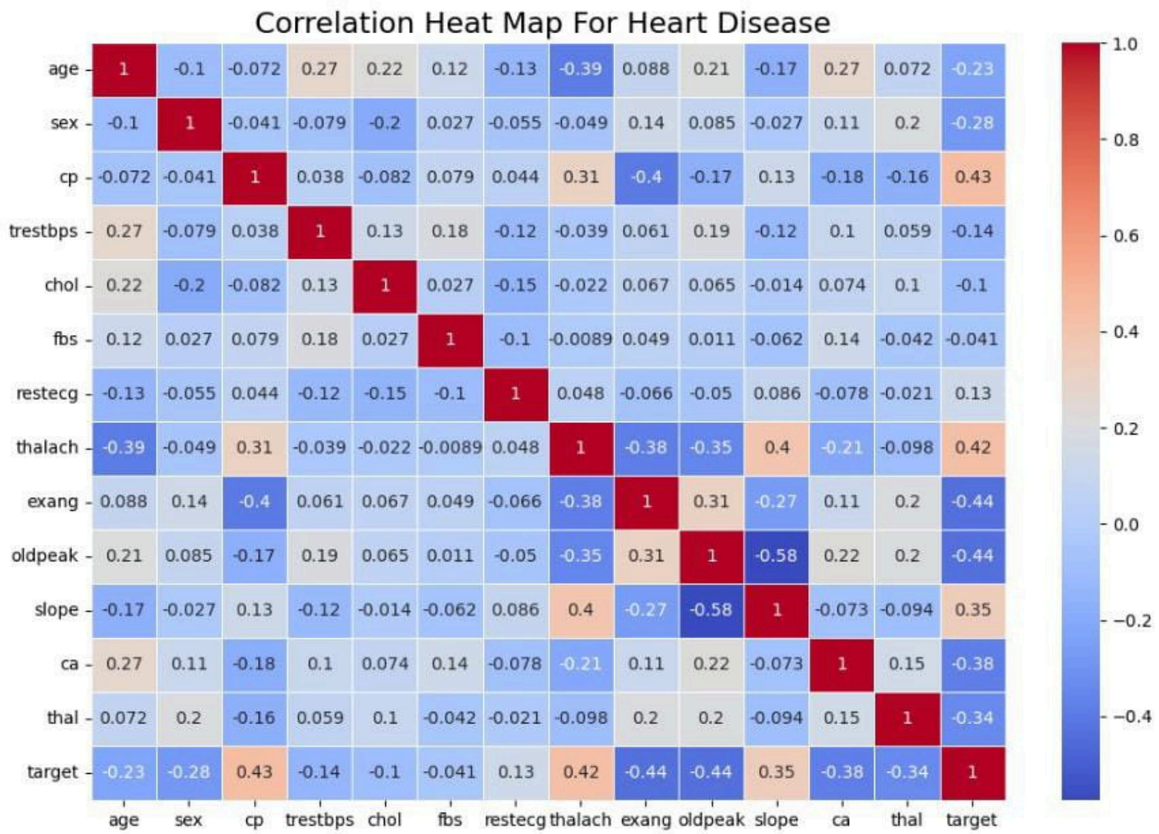
Asymptomatic Chest pain means neither causing nor exhibiting symptoms of heart disease.





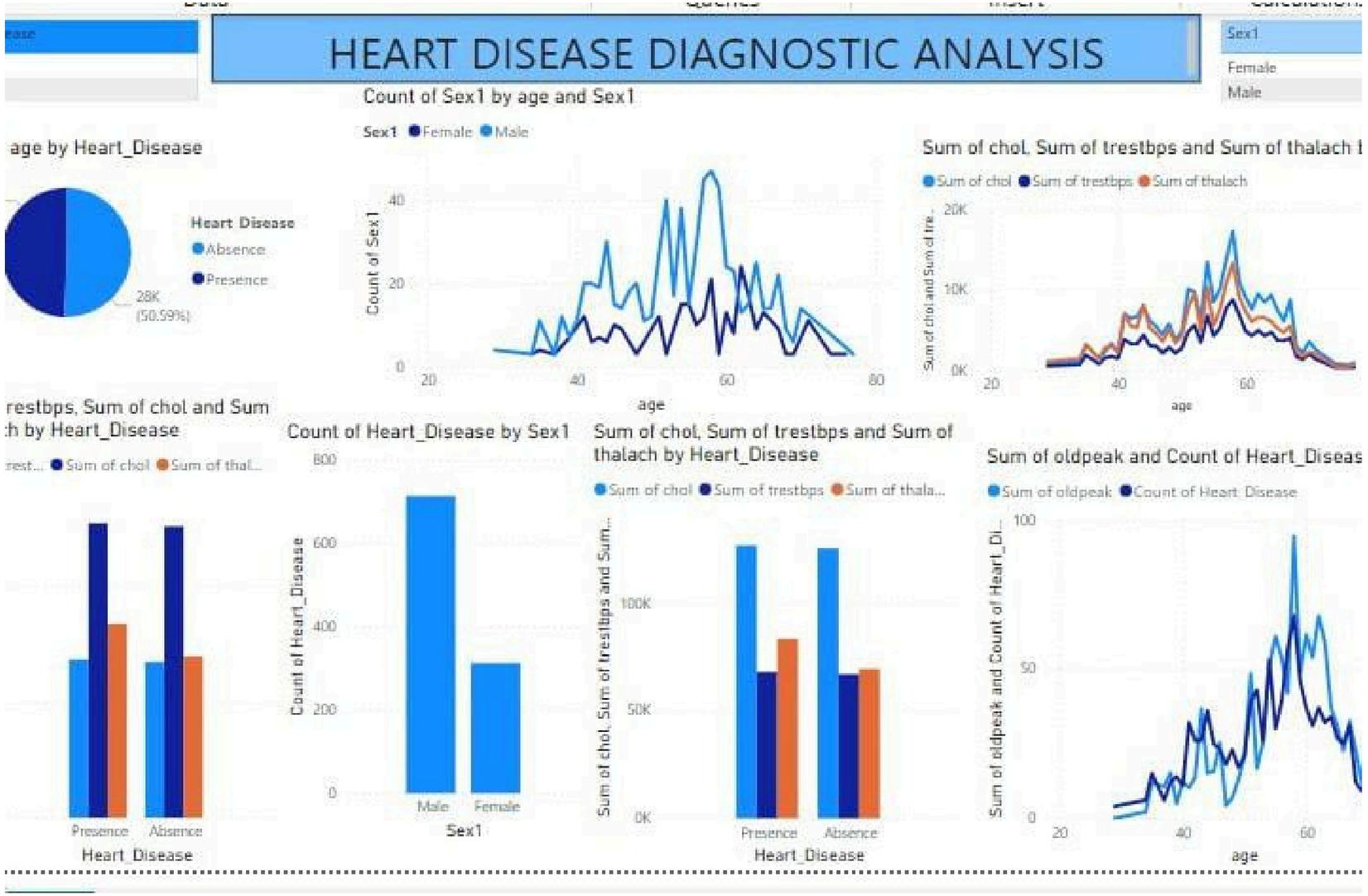
ST depression refers to a finding on an electrocardiogram, wherein the trace in the ST segment is abnormally low below the baseline.

CORRELATIO MATRIX



- From the heatmap above we observe a strong relationship on missing vaues between thalch and trestbps, exang and trestbps,oldpeak and trestbps, etc.
- 1. Percentage of People Having Heart Disease 2. Age Distribution including Gender 3. Gender Distribution Based on Heart Disease 4. Chest Pain Experienced by People Suffering from Heart Disease 5. Blood Pressure, Cholesterol Level and Maximum Heart Rate of People According to their Age and Heart Disease Patients. 6. ST Depression Experienced by People According to their age and heart disease.

MY DASHBOARD



CONCLUSION

These insights serve as a call to action for health care profossionals to leverage data-driven decision-making to enhance diagnosis, tratment, and ultimatly, patient care.

Python Project:
https://drive.google.com/file/d/1WOjRKO_z7RNJ7IbRpc28IGb7ty3k2unB/view?usp=drivesdk

THANK YOU