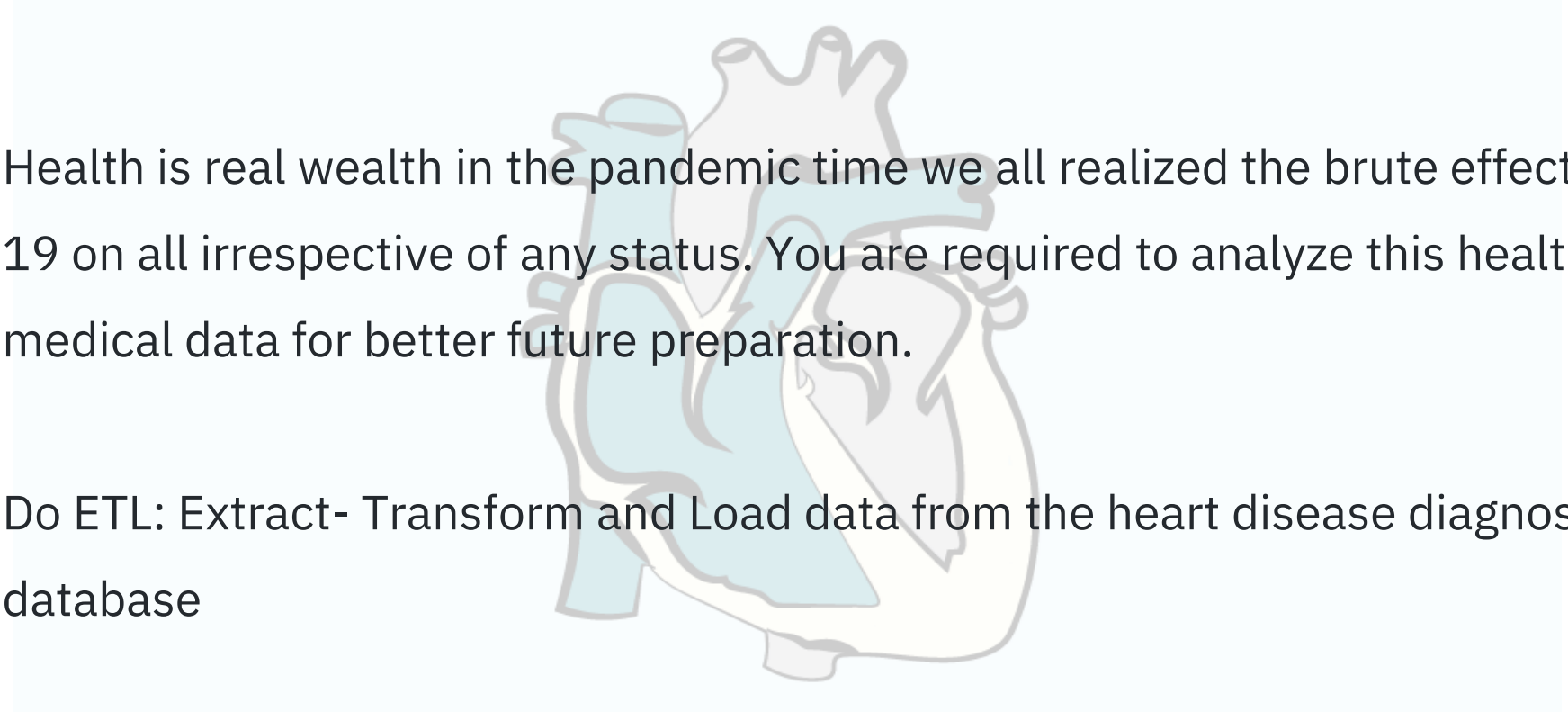
HEART DISEASE DIAGNOSTIC ANALYSIS

BY

YASASWI RACHA

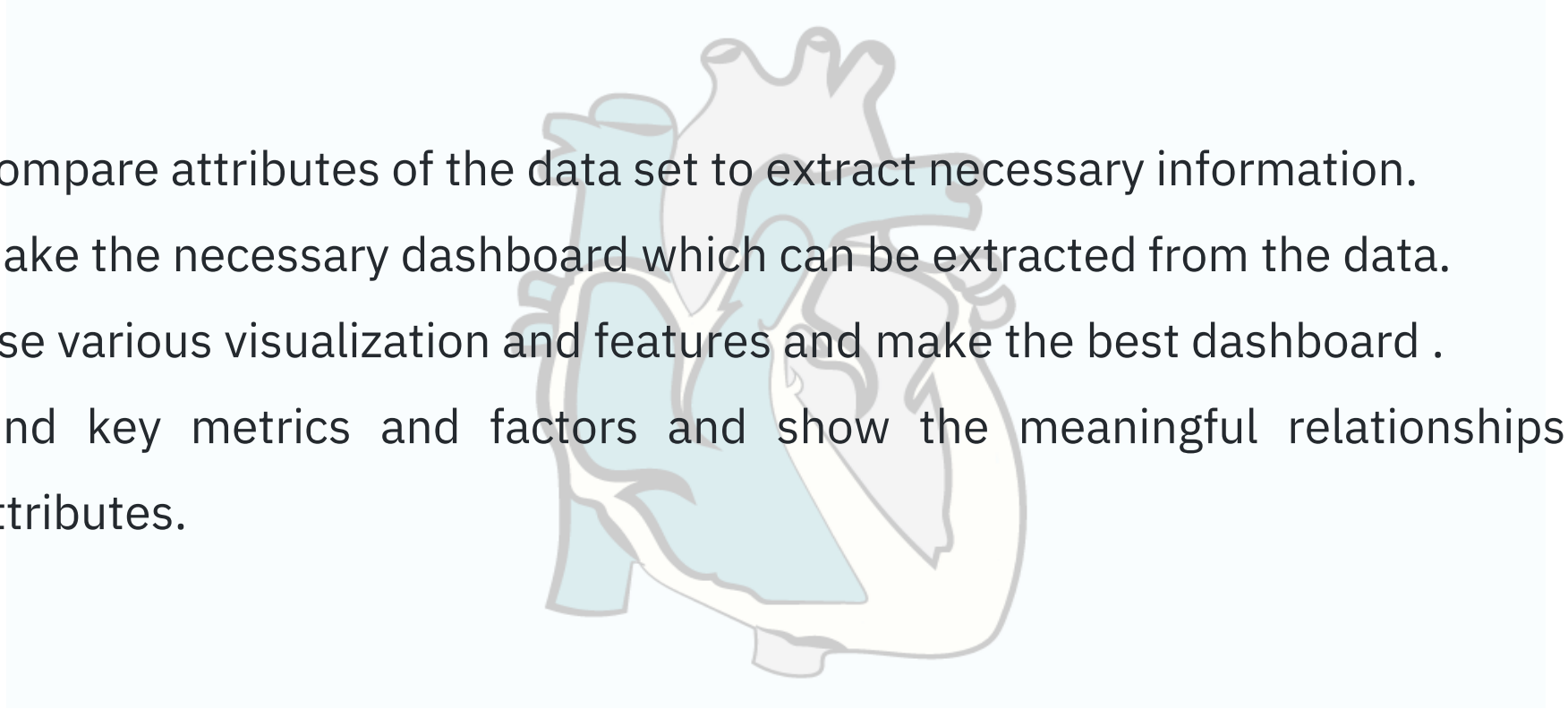
Problem Statement



- 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.

- Do ETL: Extract- Transform and Load data from the heart disease diagnostic database

Objective

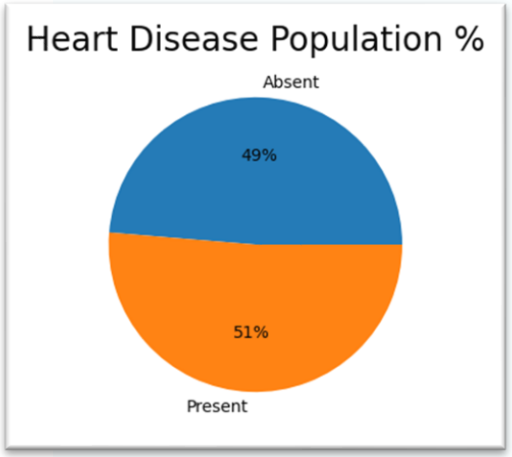


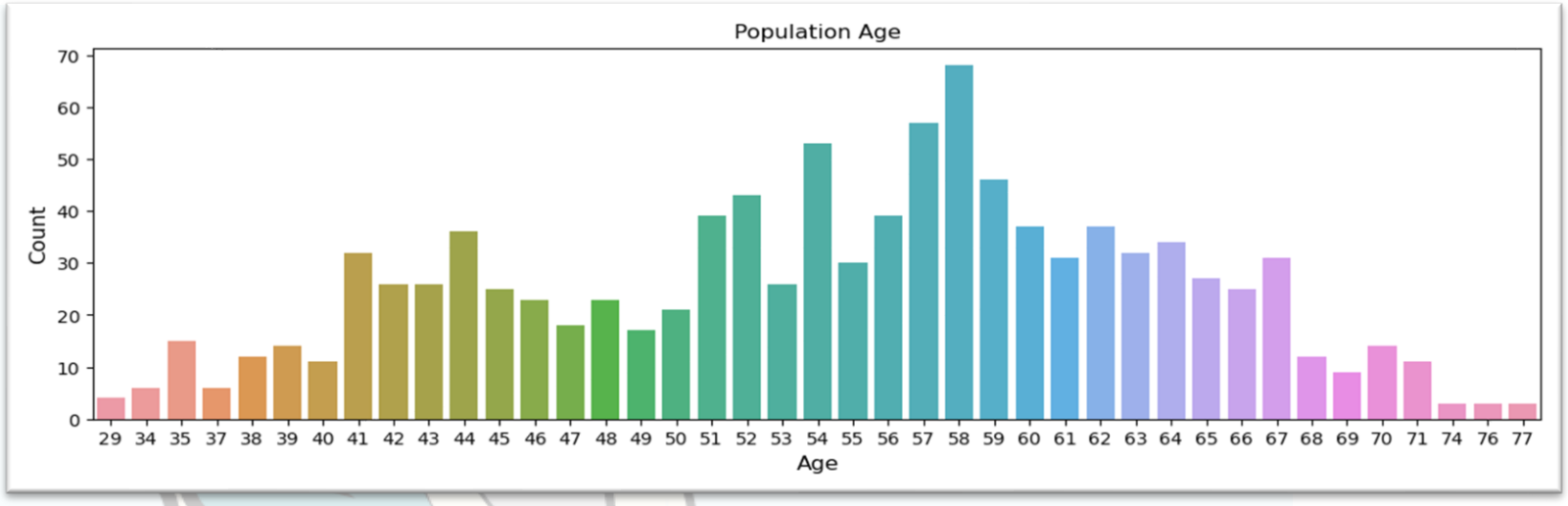
- Compare attributes of the data set to extract necessary information.
- Make the necessary dashboard which can be extracted from the data.
- Use various visualization and features and make the best dashboard .
- Find key metrics and factors and show the meaningful relationships between attributes.

Data Cleaning and Manipulating

- Importing different libraries like numpy, matplotlib, Pandas, etc.
- Loading Amazon Data Set .
- Treating the missing values imputations if necessary but in the dataset there are no missing values.
- Handling the outliers with the help of boxplots for clear idea.
- Data cleaning so that unwanted columns are removed and renamed for understating purpose.
- Performing Exploratory Data Analysis (EDA) .
- Modelling the data and perform Power BI analysis to create dashboards and deployment models.
- Reporting the insights.

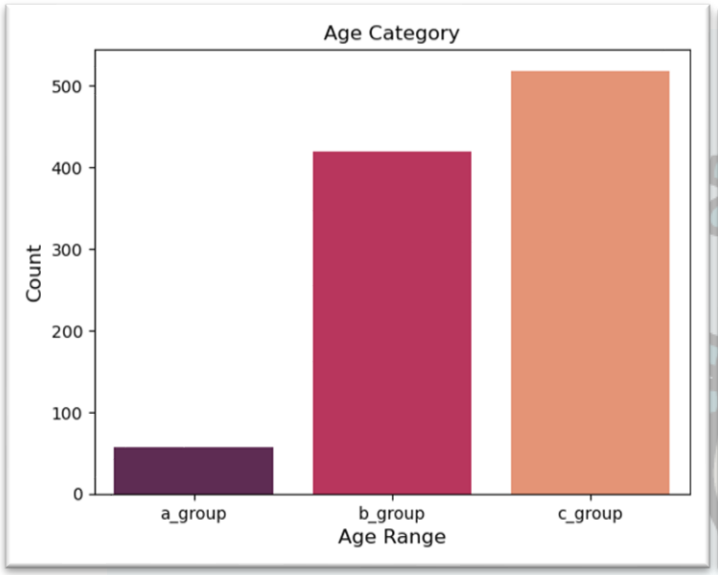
EDA Visualization

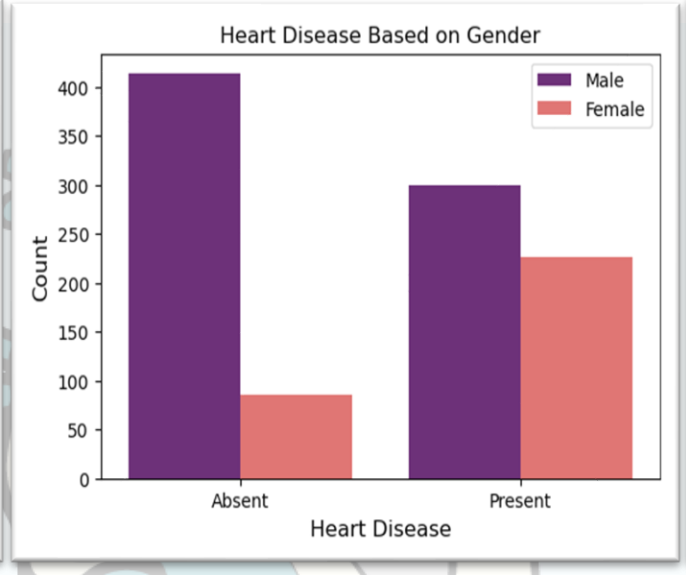


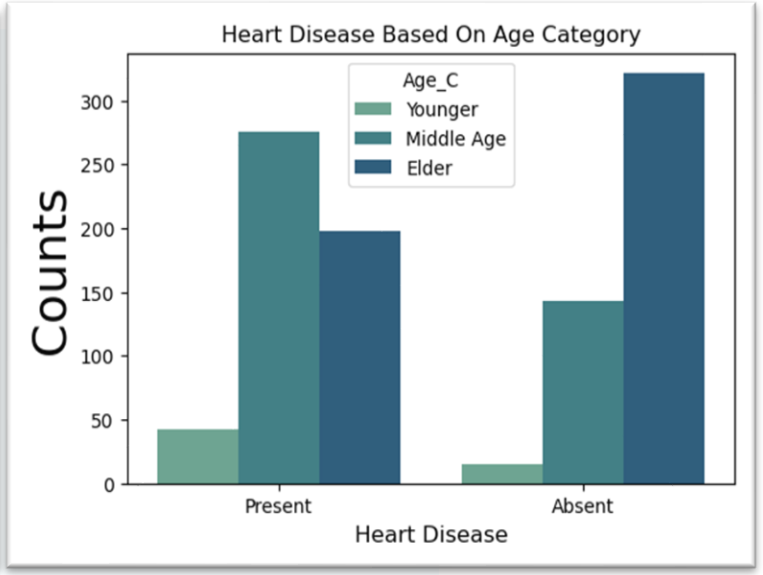


- We can see in the pie chart that in the given dataset most of the people have Heart Diseases with population over 51%.
- Population age in the dataset is in between 29 years to 77 years where the heart diseases are effected from 41-59 years age group, and peaked in 58 years.

Chest Pain by Age and Gender

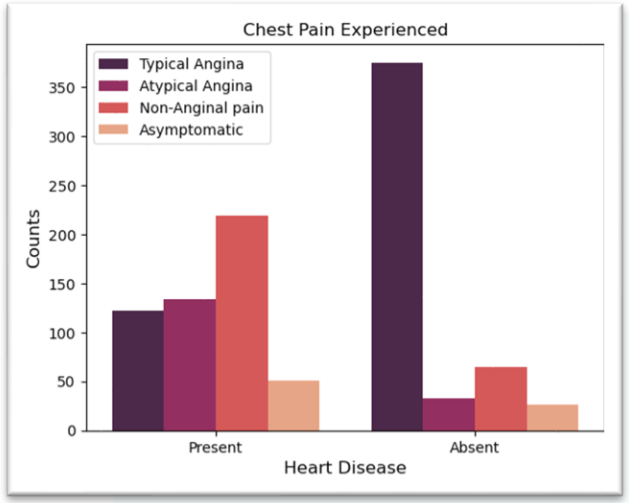


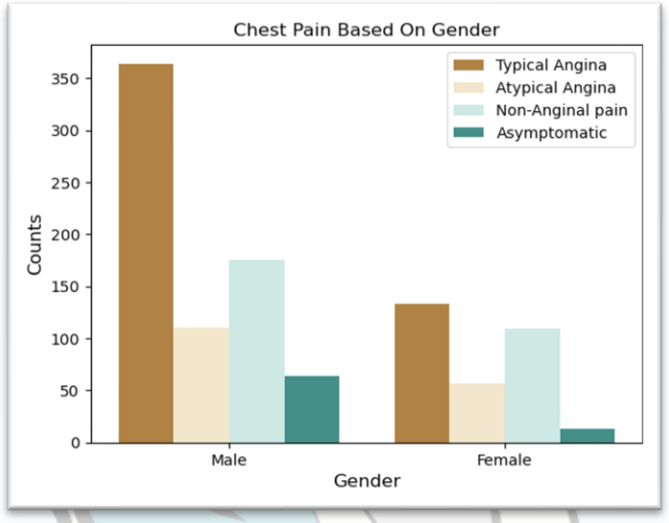


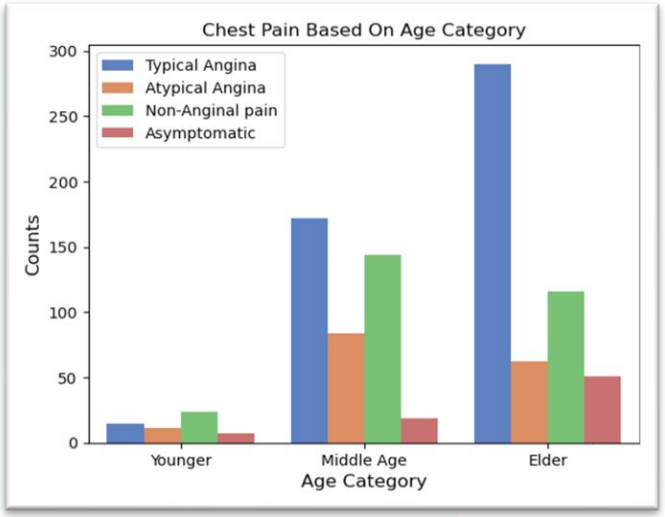


- In the age group middle age 40-50 yrs are more affected by chest pain compared to younger group <40.
- Most of the dataset age category is elders.
- Heart disease is present most in Male gender compared to Female gender.

Type of pain by Gender and Age

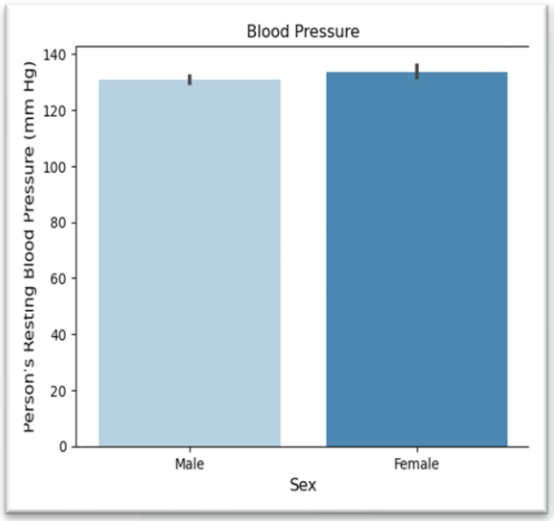


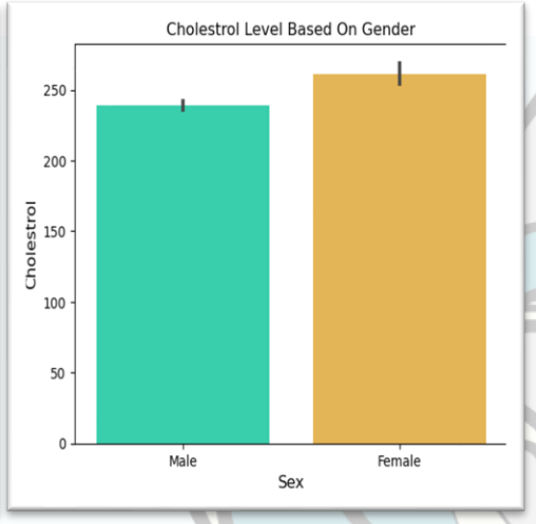


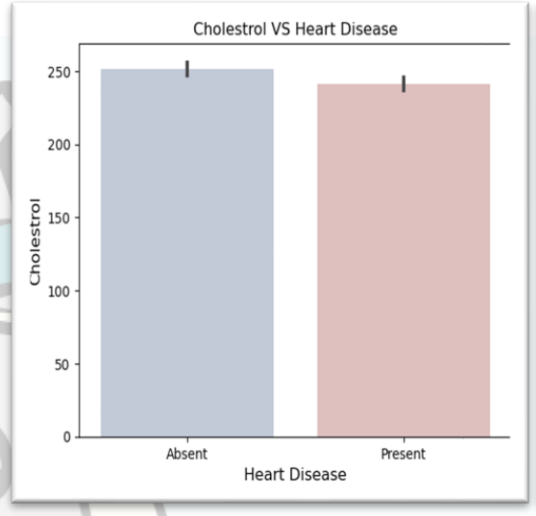


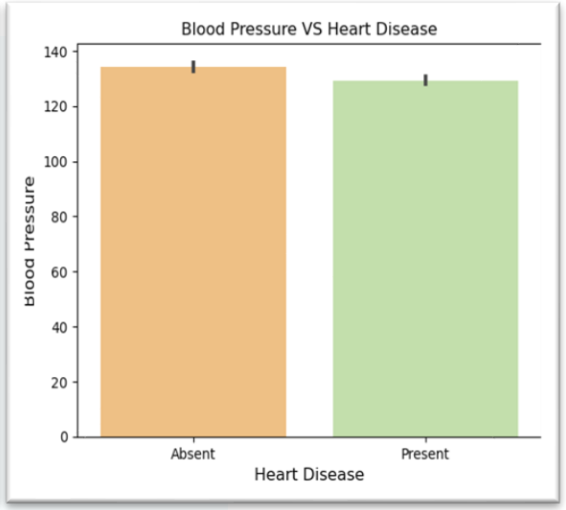
- Non-Anginal chest paint is experienced by most of the population with heart diseases.
- Male experience Typical Angina chest pain, similarly even females .
- Elders >55yrs experience Typical Angina also the middle aged 40-55 years.

Cholesterol and Blood pressure



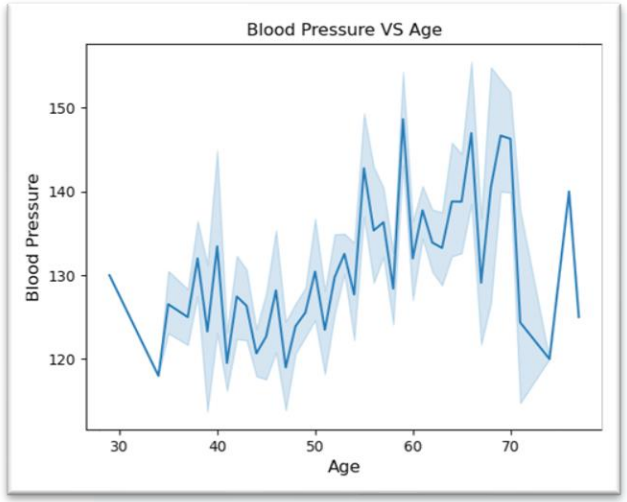


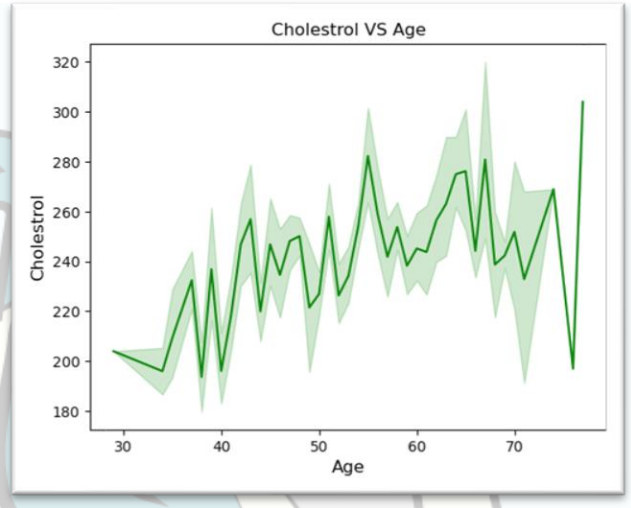


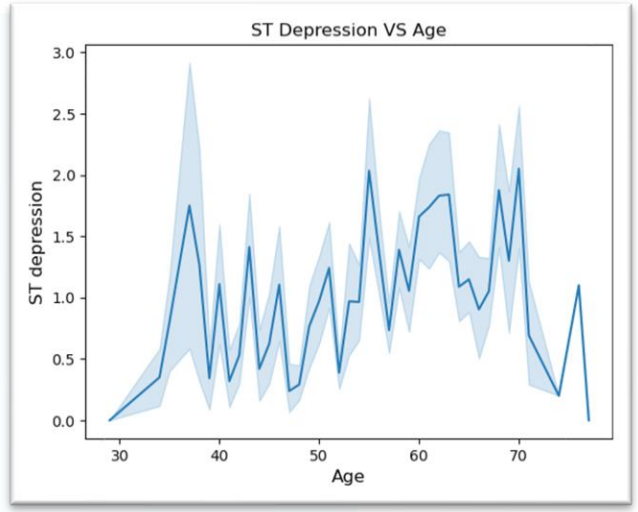


- Female gender have slightly high cholesterol and blood pressure compared to males.
- Cholesterol higher than 200 leads to heart disease as shown in bar graph.
- Blood pressure >120 leads to heart disease

Blood pressure, Cholesterol, ST vs Age

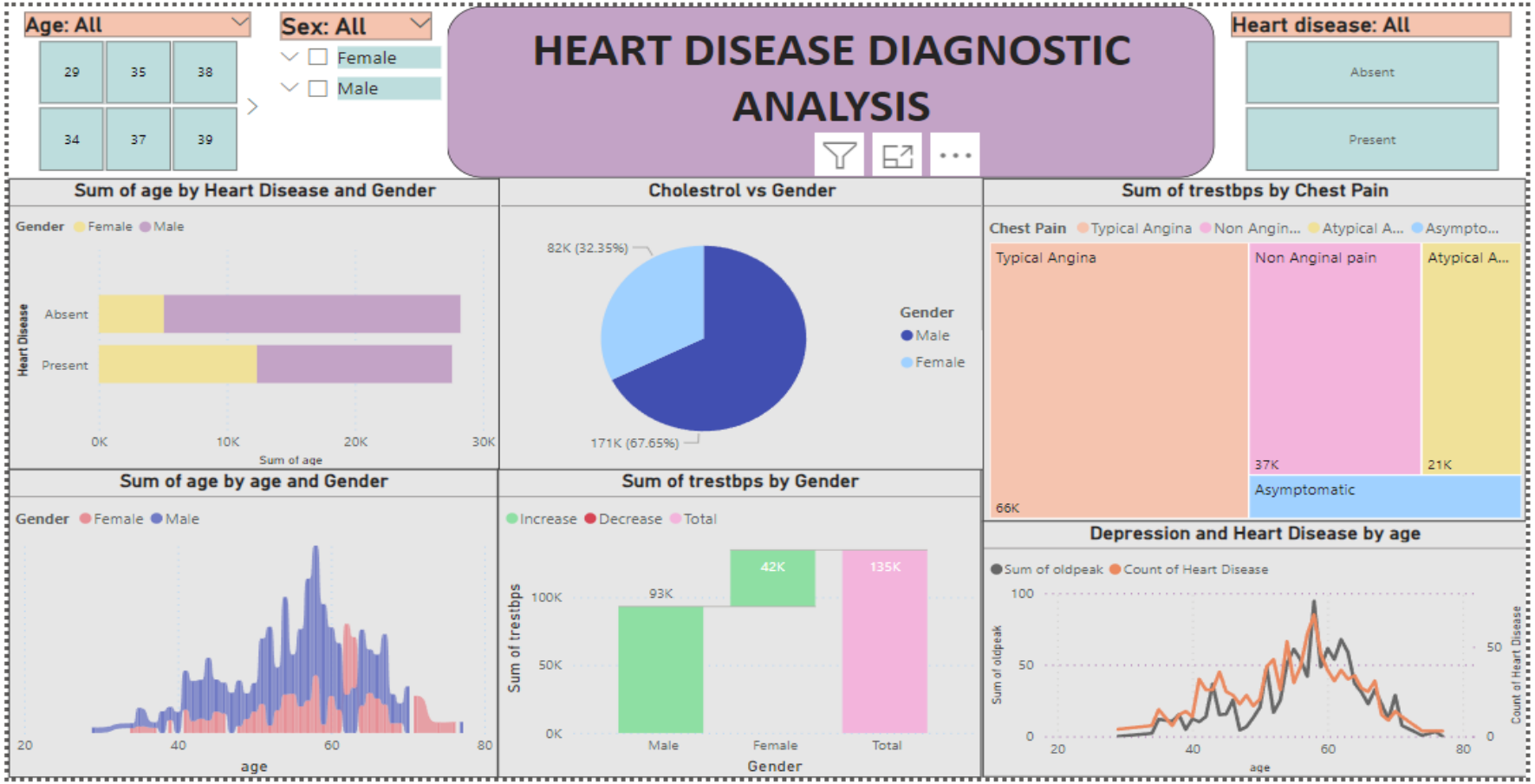






- Here we can observe that Blood Pressure and Cholesterol increases between age of 50 to 60 and somehow continue the pattern till 70 .
- ST depression mostly increases between the age group of 30-40 ST depression refers to a finding on an electrocardiogram, wherein the trace in the ST segment is abnormally low below the baseline.

Power BI Dashboard



Key Insights

- 51% People suffering from heart disease.
- Elder Aged Men are more (50 to 60 Years) and Females are more in 55 to 65 Years Category.
- Males are more prone to heart disease.
- Elderly Aged People are more prone to heart disease.
- People having Non Anginal chest pain have a higher chance of heart disease.
- High number of cholesterol level in people having heart disease.
- Blood Pressure increases between age of 50 to 60 and somehow continue till 70.
- Cholesterol and maximum heart rate Increasing in the age group of 50 60.
- ST depression mostly increases between the age group of 30 40.