Heart Disease Diagnostic Analysis

Detailed Project Report

Project related Q & A

1. Libraries used in Python? - Pandas, NumPy, Scikit-learn and Matplotlib
2. Type of Data ? - Both Numerical and categorical data involved.
3. What techniques were you using for data?
    a. Removing unwanted attributes
    b. Visualizing relation of independent variables with each other and output variables
    c. Removing outliers, cleaning data and imputing if null values are present.
    d. Converting Numerical data into Categorical values.

Project Details

Project Title	Heart Disease Diagnostic – Analysis
Technology	Business Intelligence
Domain	Healthcare
Project Difficulty Level	Advanced
Programming Language used	Python
Tools Used	Google Colab, Data studio, Excel, MS PowerPoint

OBJECTIVE

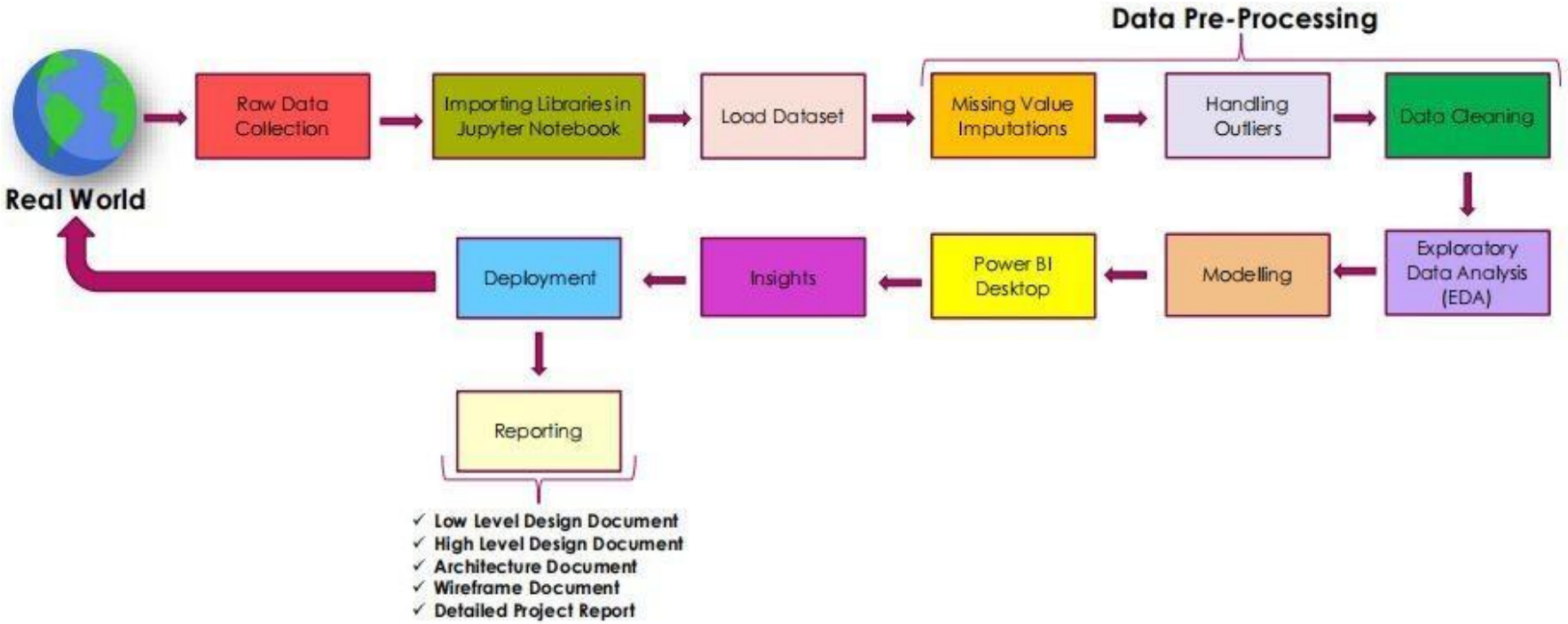
The goal of the project is to analyze a heart disease dataset which comprises various features that describe the disease using various analytical tools and derive insights from them and create a report.

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.

- A dataset is formed by taking into consideration some information of 303 individuals.

Architecture



Dataset Information

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)

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: up sloping, 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 = reversible defect)

num: Heart disease (0 = no, 1 = yes)

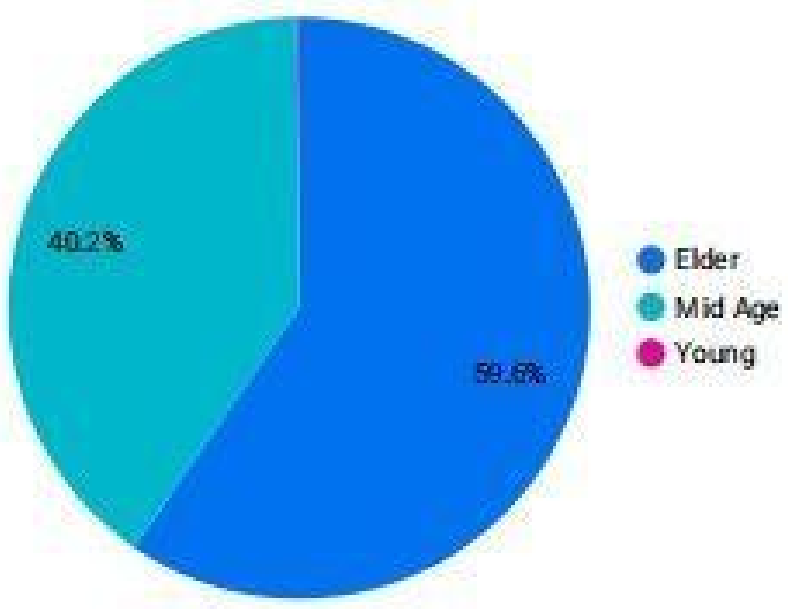
fbs: The person's fasting blood sugar (> 120 mg/dl, 1 = true; 0 = false)

restecg: Resting electrocardiograph's 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.

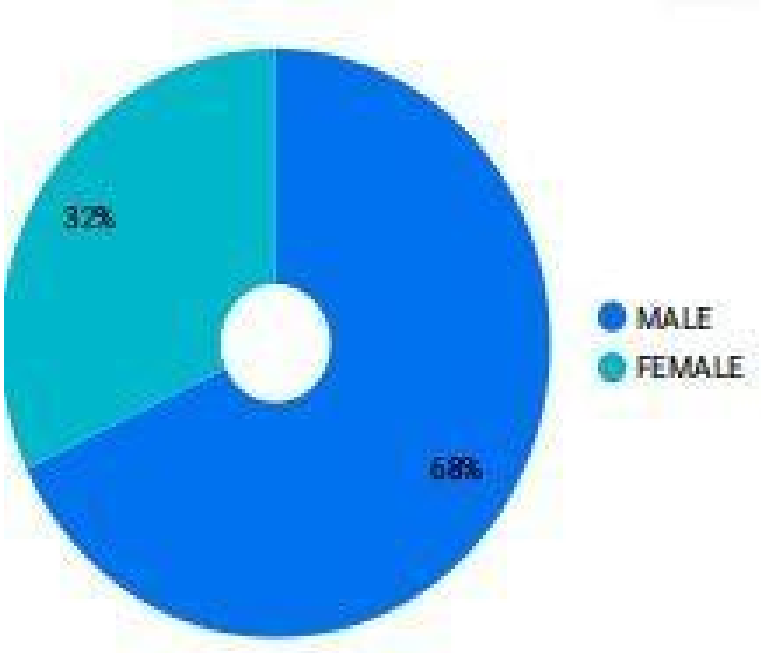
Data Insights
What kind of population we have?

- We have 3 age categories:
- Elder - 59.6%
- Young - 1%
- Mid-Age - 40.2%



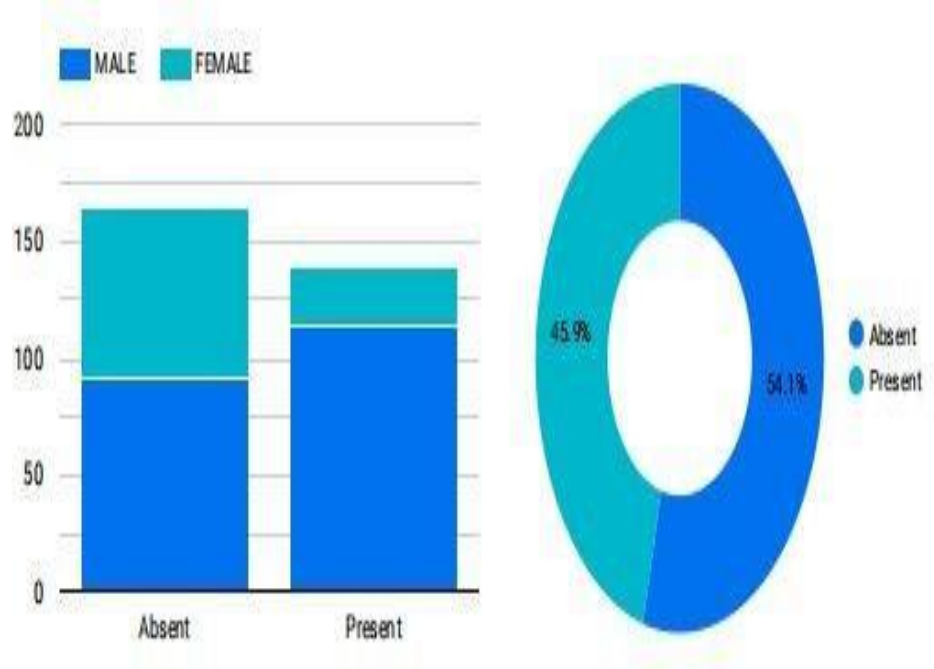
Data Insight

- Here we have 32% of the female population And 68% of male population.



Data Insight
How many male and female population have disease ?

- 54 % of the population don’t have heart disease, while 45.9% have.



Data Insight
What kind of chest pain more prone to disease?

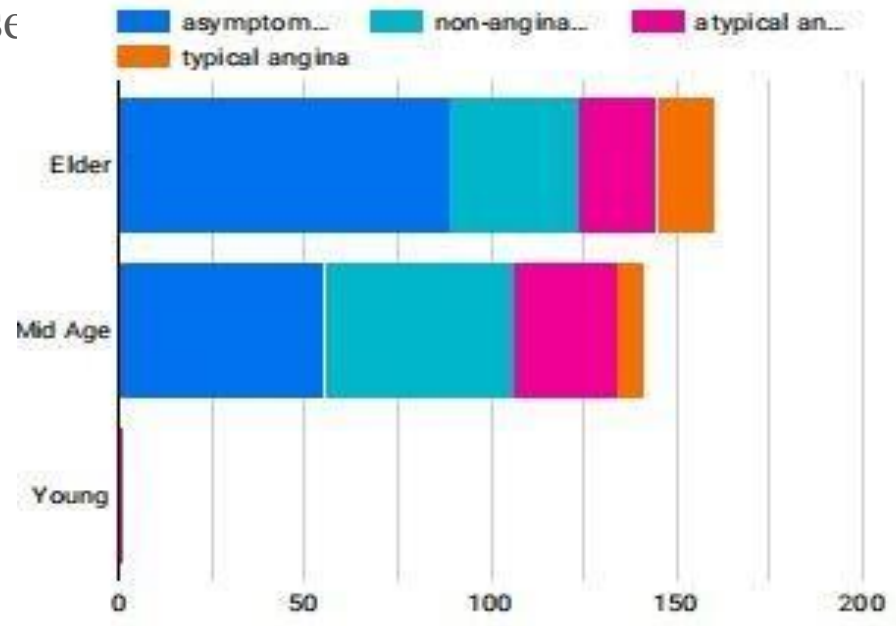
Various age categories having heart dise

with different types of chest pain

Symptoms.

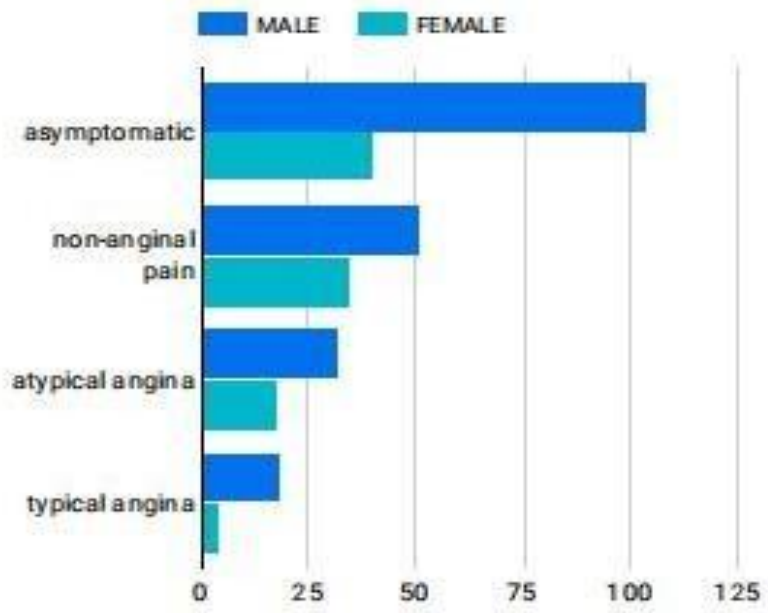
Elderly people are more prone to

Asymptomatic chest pain.



Population wise, chest pain category associated with disease ?

Male population is more prone to asymptomatic chest pain and non-anginal pain than females.



Key Performance Indicator (KPI)

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.

Conclusion

1. 45.87% People suffering from heart disease.
2. Elderly Aged Men are more (50 to 60 Years) and Females are more in 55 to 65 Years Category
3. Males are more prone to heart disease.
4. Elderly Aged People are more prone to heart disease.
5. People having asymptomatic chest pain have a higher chance of heart disease.
6. High cholesterol level in people with heart disease.
7. Blood pressure increases between the ages of 50 to 60 and somehow continues till 70.
8. ST depression mostly increases between the age group of 30-40.

THANK YOU