

HEART DISEASE DIAGNOSIS ANALYSIS

FINAL PROJECT REPORT



PROJECT RELATED Q/A

1. Data Source ?

<https://drive.google.com/drive/folders/165Pjmf9W9PGy0rZjHEA22LW0Lt3Y-Q8>

2. Libraries used in Python? - Pandas, NumPy, Scikit-learn and Matplotlib

3. Type of Data ? - Both Numerical and categorical data involved.

4. What techniques were you using for data?

- Removing unwanted attributes
- Visualizing relation of independent variables with each other and output variables
- Removing outliers, cleaning data and imputing if null values are present.
- 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

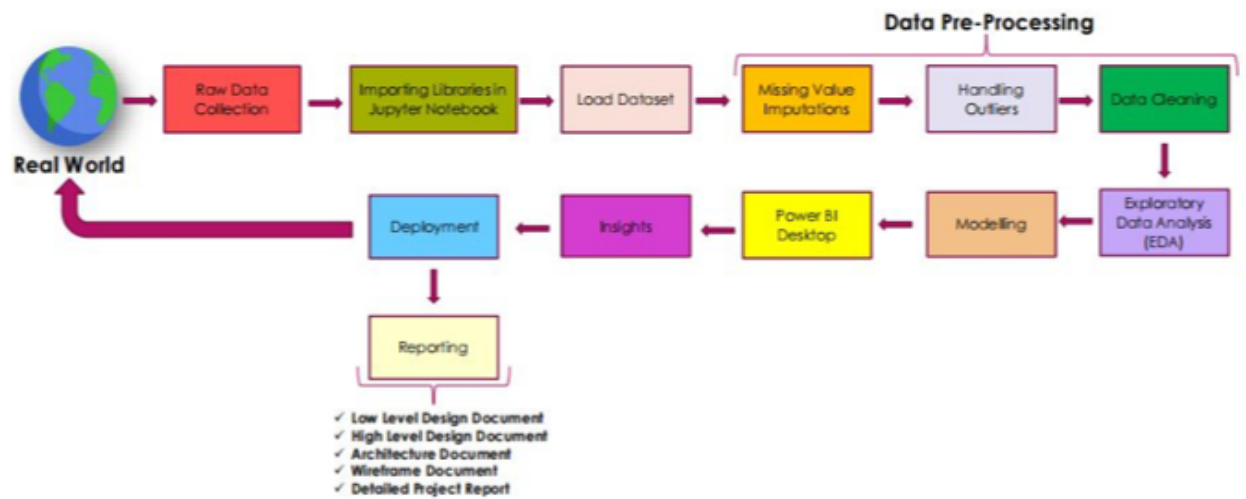
OBJECTIVE

The goal of the project is to analyze heart disease dataset which comprises various features involving that describes 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 = reversable)

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

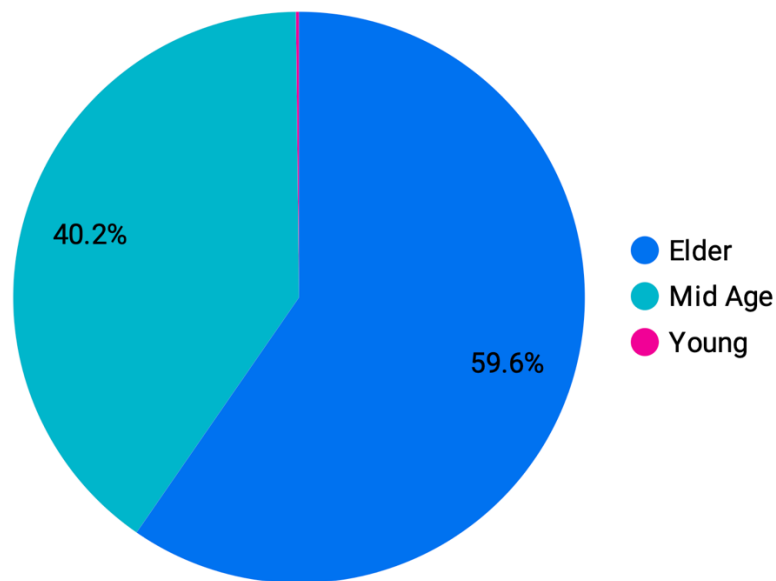
fbs: The person's fasting blood sugar (> 120 mg/dl, 1 = true; 0 = false)

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

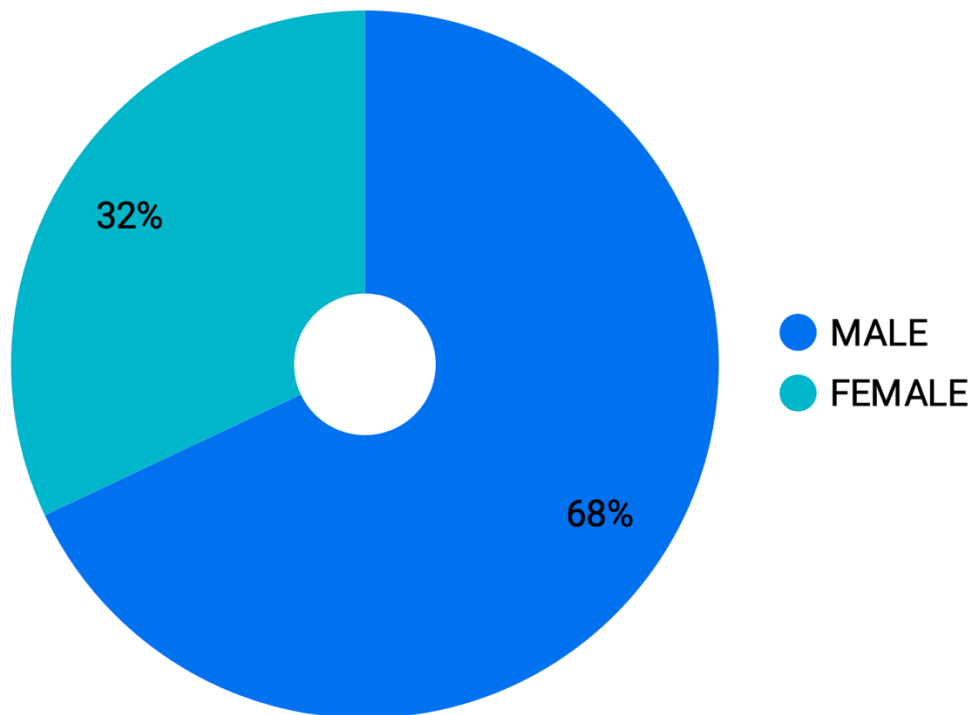
1. What Kind of age of population we have in the data ?



We have 3 age categories :

- Elder - 59.6%
- Young - 1%
- Mid-Age - 40.2%

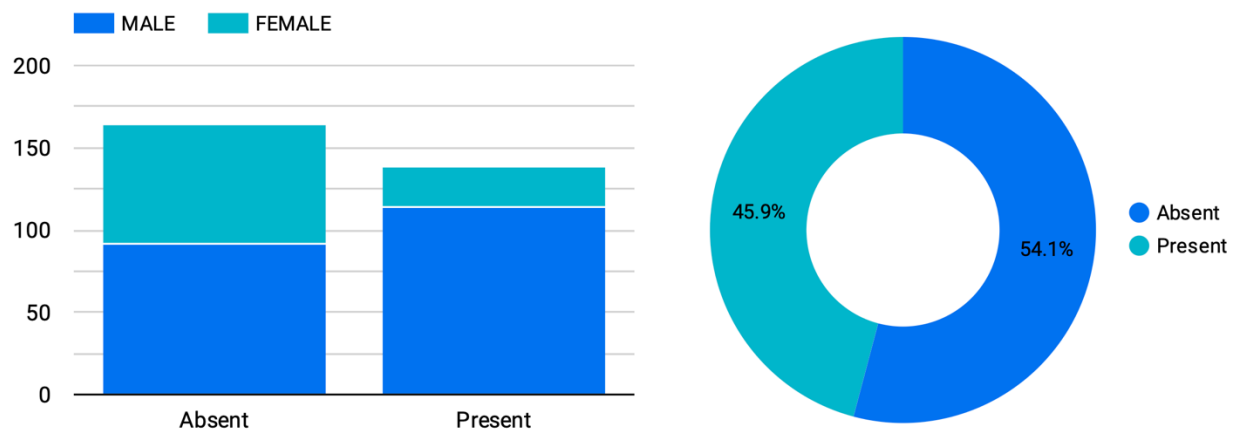
2. Gender Distribution of the population of the data



Here we have

- 32% of Female population
- 68% of Male population.

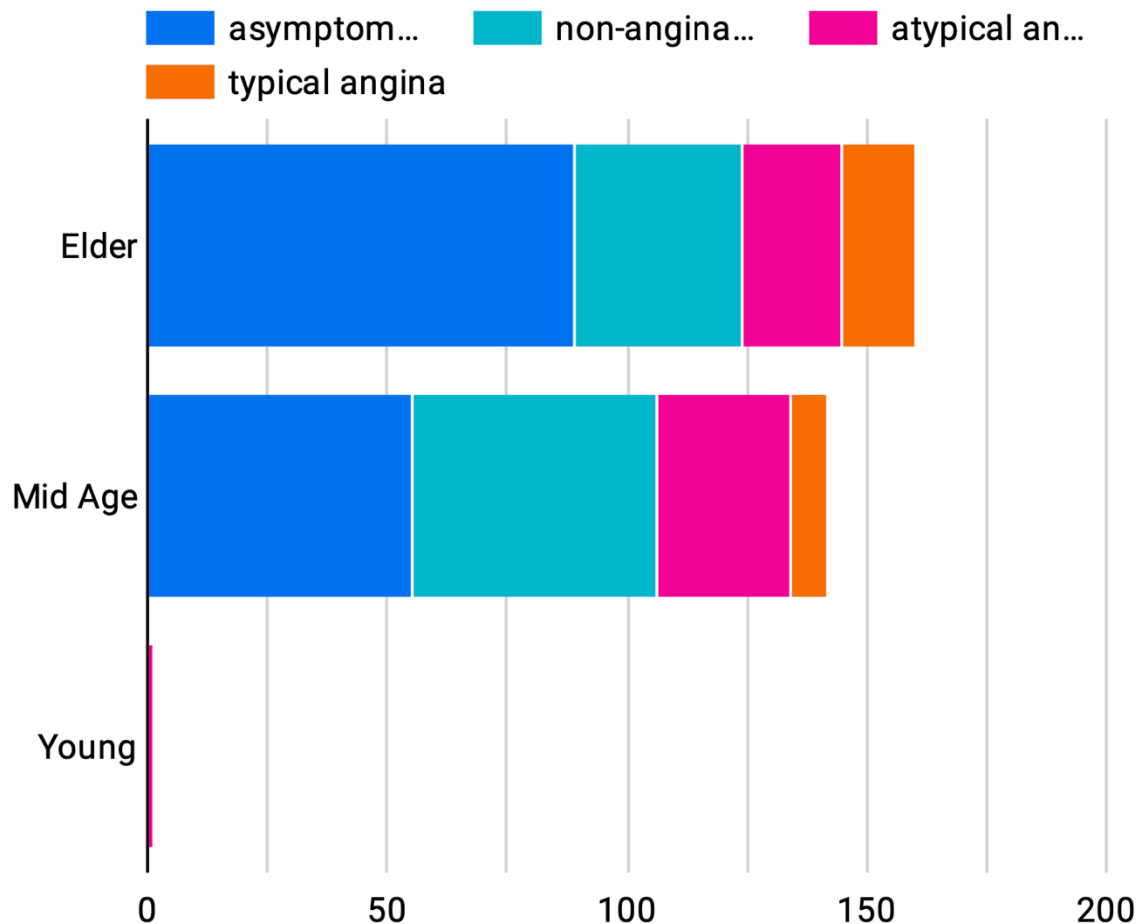
3. Gender vs Disease



Here we see that

- 54 % of the population don't have heart disease:
 - Out of which Male have a higher population of heart disease patients
- 46 % of the population do not have heart disease:
 - Out of which Females have are pre-dominant.

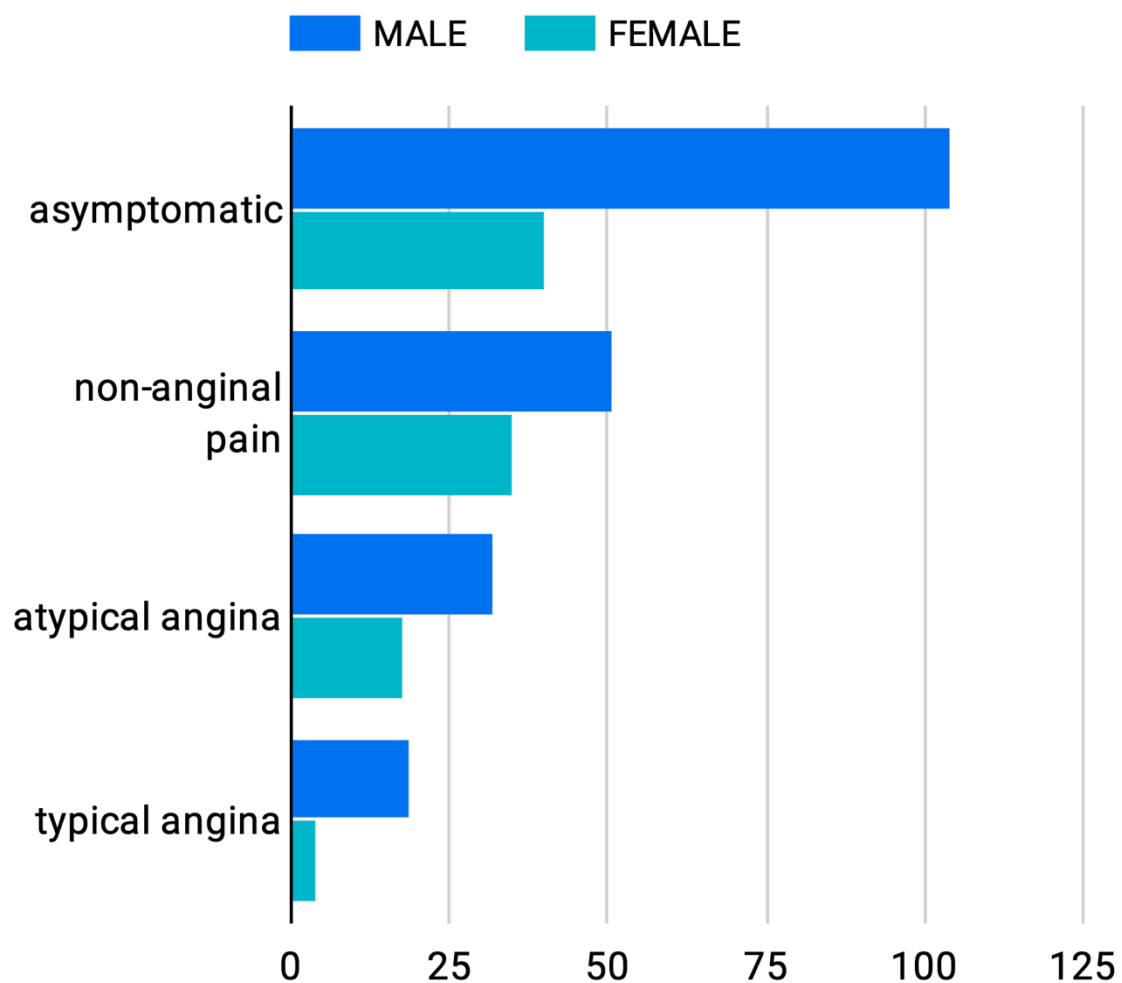
4. What kind of chest pain more common to the disease?



Here we can observe that

- Various age category having heart disease with different types of chest pain Symptoms.
- Elder people are more prone to Asymptomatic chest pain.
- While Non-Angina Pain is also prevalent in Mid-Age population.

5. Gender vs Chest Pain Type



Here, we can observe that

- Male population are more prone to asymptomatic chest pain and non-anginal pain than female.
- Non-Anginal Pain is common in both Males and Females.

KEY PERFORMANCE INDICATORS (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.

TAKEAWAYS & 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 number of cholesterol level in people having heart disease.
7. Blood pressure increases between age of 50 to 60 and somehow continue till 70.
8. ST depression mostly increases between the age group of 30-40.

THANK YOU
