HEART DISEASE DIAGNOSTIC ANALYTICS

Detailed Project Report

AGENDA

- Project Detail
- Problem Statement
- About the Dataset
- Architecture
- Insights
- KPI
- Q&A
- Summary

DETAIL OF THE PROJECT

Project Title	Heart Disease Diagnostic - Analytics
Technology	Business Intelligence
Domain	Healthcare
Difficulty Level	Advanced

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.

ABOUT THE DATA

There are total 14 features/columns.

age: person age in years

sex: person 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: person's resting blood pressure (mm Hg on admission to the hospital)

chol: person cholesterol measurement in mg/dl

fbs: 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)

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thalach: The person's maximum heart rate achievedexang: 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: downsloping)

ca: The number of major vessels (0-3)

thal: A blood disorder called thalassemia (3 = normal; 6 = fixed defect; 7 = reversable defect)

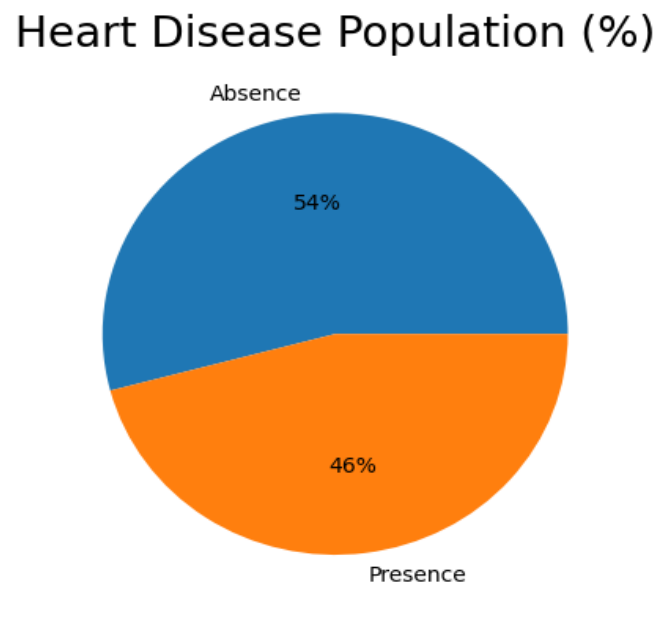
num: Heart disease (0 = no, 1 = yes)

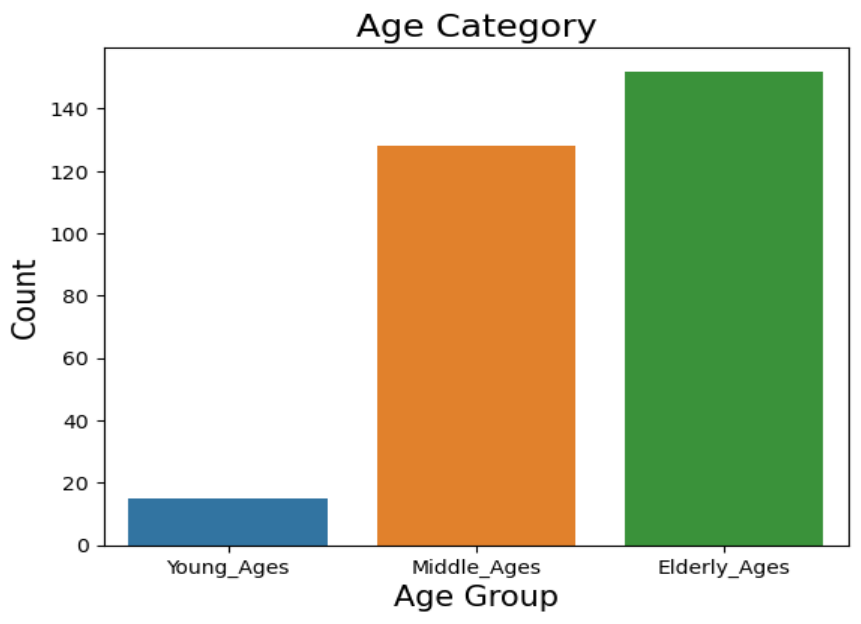
ARCHITECTURE

- Handling Outliers
- Handling Missing Values
- Data Cleaning

- HLD
- LLD
- Architecture
- Wireframe
- Detailed Project Report

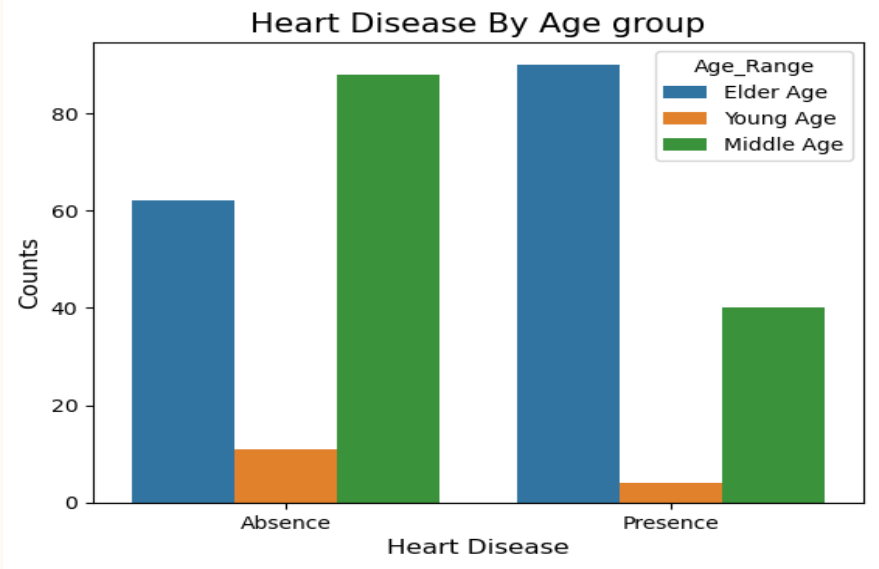
INSIGHTS



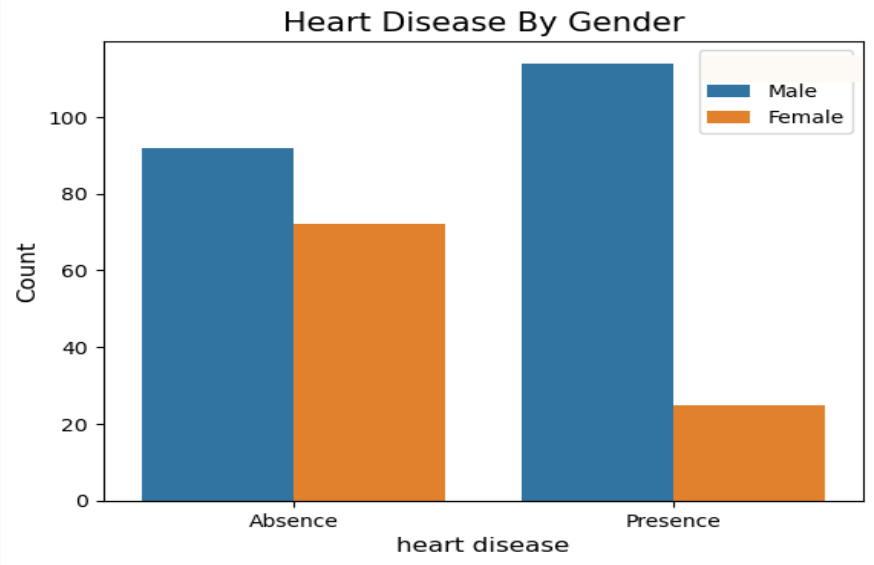


Here , 46% people are suffered from Heart disease.

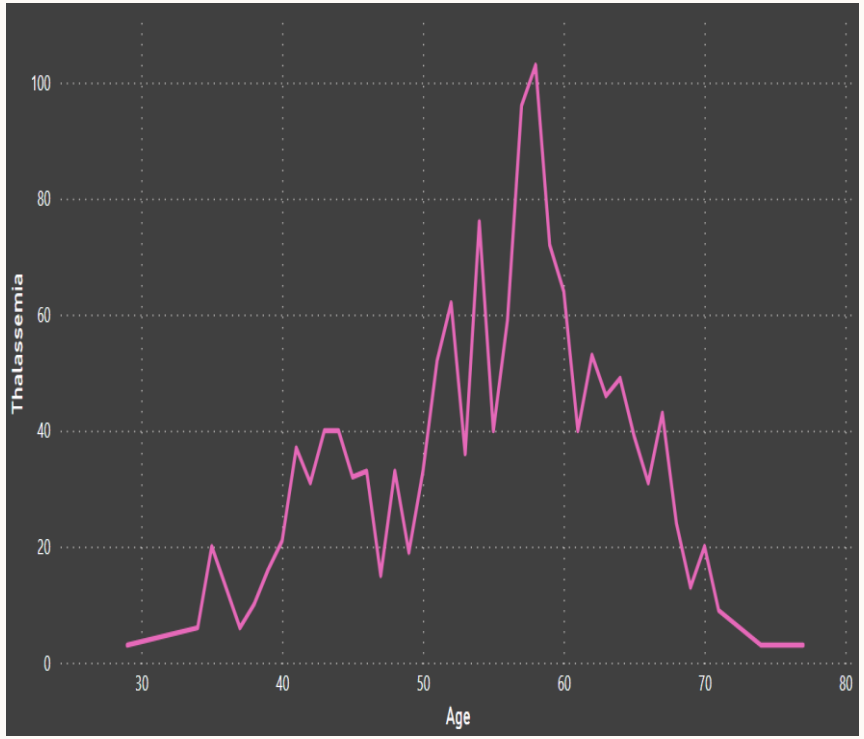
This dataset having more number of people from older and middle age people.

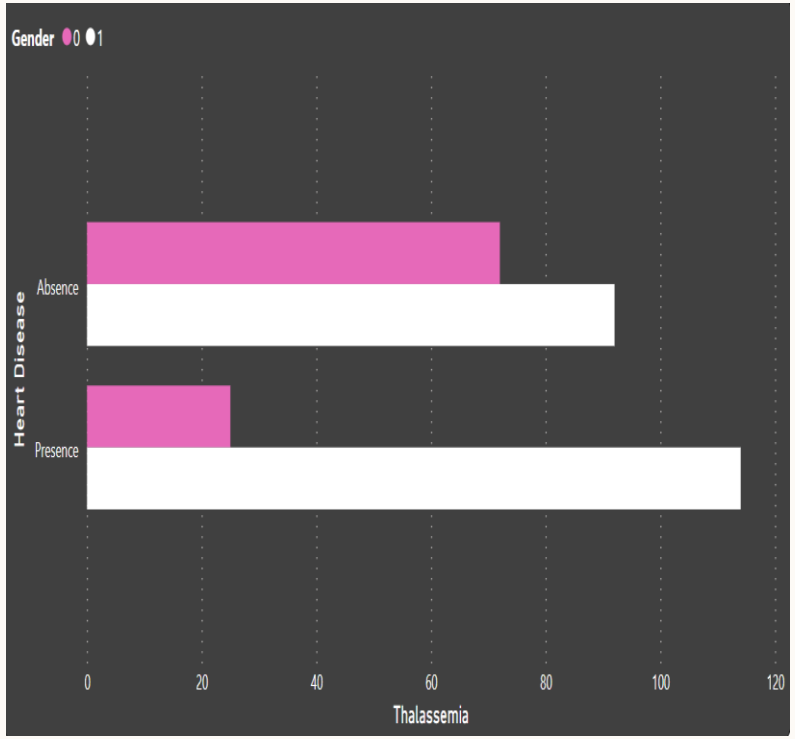


Younger people are less affected in comparison of middle and older age people.



Males are most likely to have heart diseases.

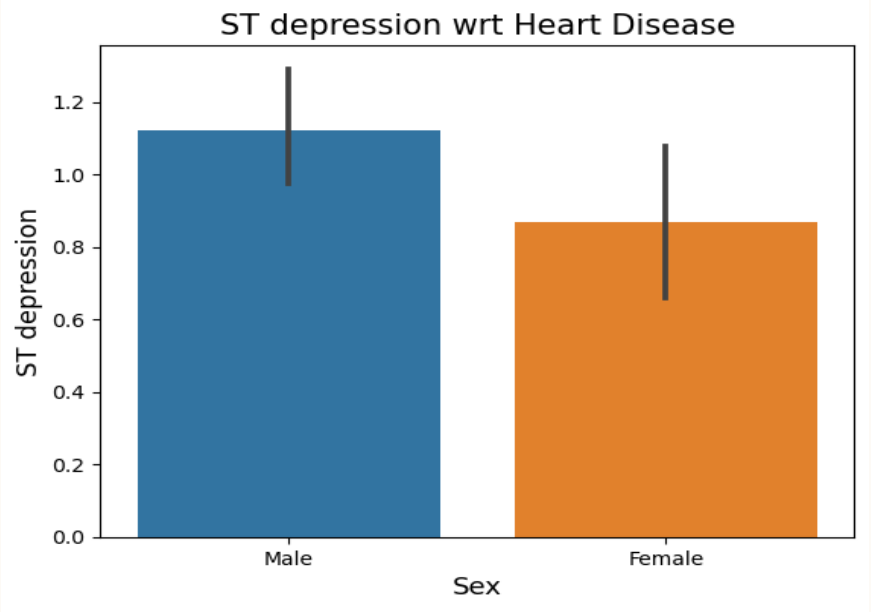




Age group of (50-70) are mostly affected by Thalassemia.

Most of the Male heart disease patients are affected by Thalassemia.

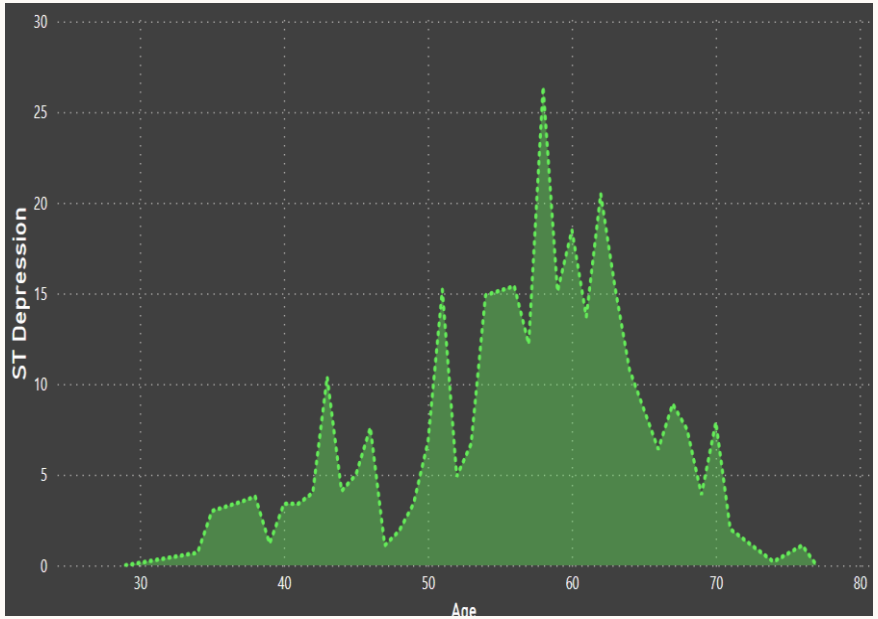
- Thalassemia is an inherited (i.e., passed from parents to children through genes) blood disorder caused when the body doesn't make enough of a protein called hemoglobin, an important part of red blood cells.

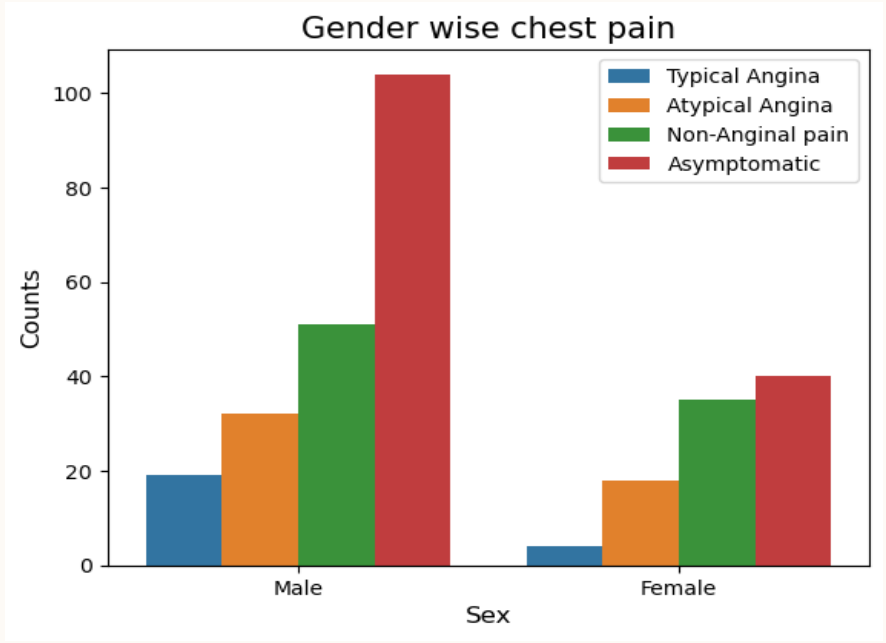


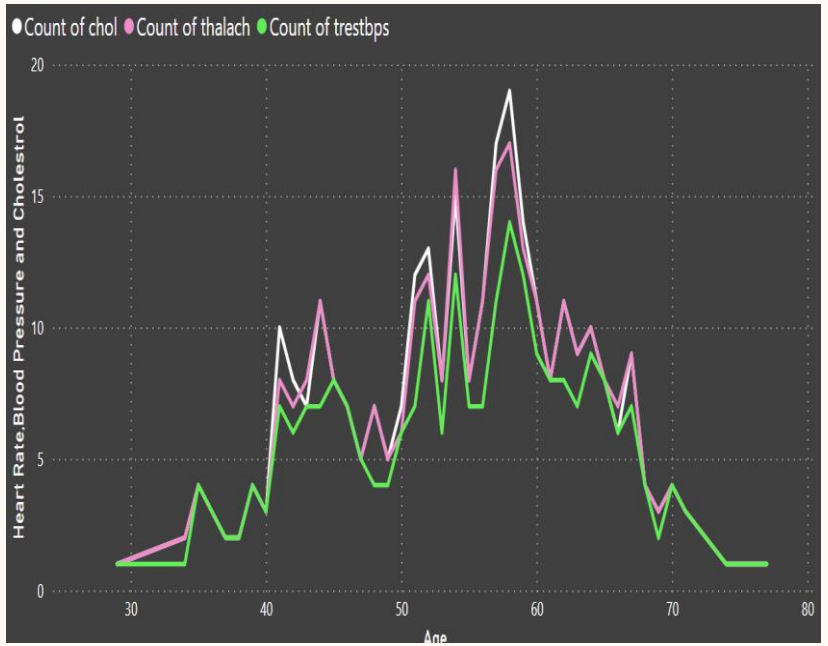
Out of all Heart Disease patients, Males are more affected by ST Depression.

And most of them are from (50-70) age group.

- An ST depression can be an outcome of an electrocardiogram (ECG) test. It can indicate health conditions like hypokalemia, myocardial ischemia, or a side effect of medications.



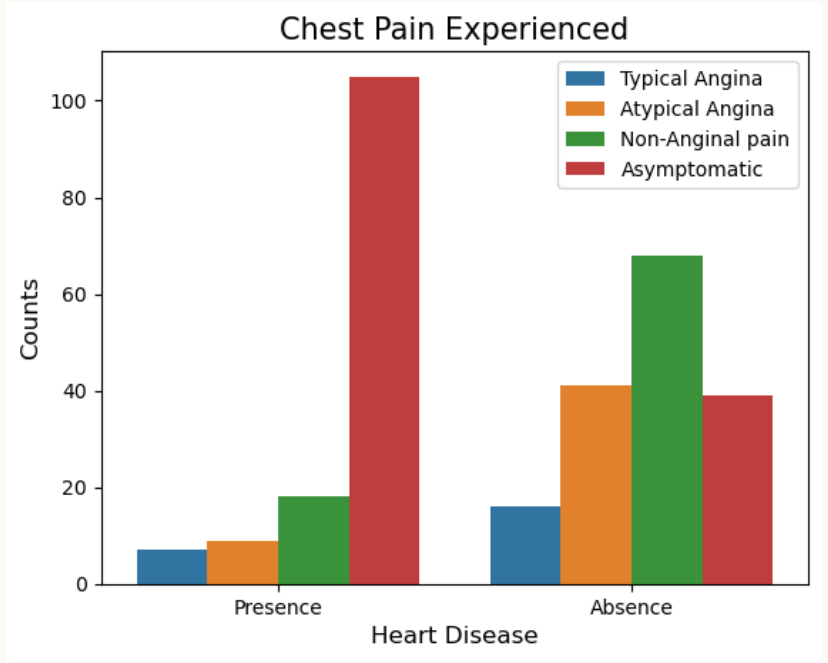




Most number of heart disease patients experienced chest pain.

Among all type of chest pain, asymptomatic chest pain is common in heart patients.

High Blood pressure, heart rate and Cholesterol level are also common in older age heart patients.



KEY PERFORMANCE INDICATORS (KPI)

- Percentage(%) of people affected by Heart Disease.
- Age and Gender distribution based on Heart Diseases.
- Chest Pain experienced by the Heart Disease patients.
- ST Depression experienced by the people.
- Presence of Thalassemia in Heart Disease patients.
- Heart Rate, Blood Pressure and Cholesterol level of people as per their age.

Q&A

Q1) What's the source of data?

Ans: The data for training is provided by Ineuron.

Q 2) What was the type of data?

Ans: The data was the combination of numerical and Categorical values.

Q 3) What's the complete flow you followed in this Project?

Ans: Refer slide 7th for better Understanding.

Q 4) What techniques were you using for data pre-processing?

Ans: Cleaning data and imputing if null values are present.

Converting categorical data into numeric values.

Removing Outliers

Imputing invalid data

SUMMARY

- 46% people are suffered from Heart disease.
- Younger people are less affected in comparison of middle and older age people.
- Most of the Male heart disease patients are affected by Thalassemia. Age group of (50-70) are mostly affected by Thalassemia.
- Out of all Heart Disease patients, Males are more affected by ST Depression. And most of them are from (50-70) age group.
- Most number of heart disease patients experienced chest pain. Among all type of chest pain, asymptomatic chest pain is common in heart patients.
- High Blood pressure, heart rate and Cholesterol level are also common in older age heart patients.

THANK YOU