Heart Disease Diagnostic Analysis
By Vinotha

PROJECT DETAIL:

Project Title	Heart Disease Diagnostic Analysis
Technologies	Data Science
Domain	Healthcare
Project Difficulties level	Intermediate

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

You can perform EDA through python. The database extracts various information such as Heart disease rates, Heart disease by gender, by age.

You can even compare attributes of the data set to extract necessary information. Make the necessary dashboard with the best you can extract 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.

STEPS INVOLVED:

1. Connecting Database(Excel)
2. Analyzing tables and relations
3. Data cleaning- power query editor DAX
4. Developing visualisation models – slicers,cards,pie chart,donut chart,etc
5. Creating a report and pin to dashboard

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)

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)

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

thal: A blood disorder called thalassemia (1 = normal; 1 = fixed defect; 3 = reversable defect)

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

Dataset:

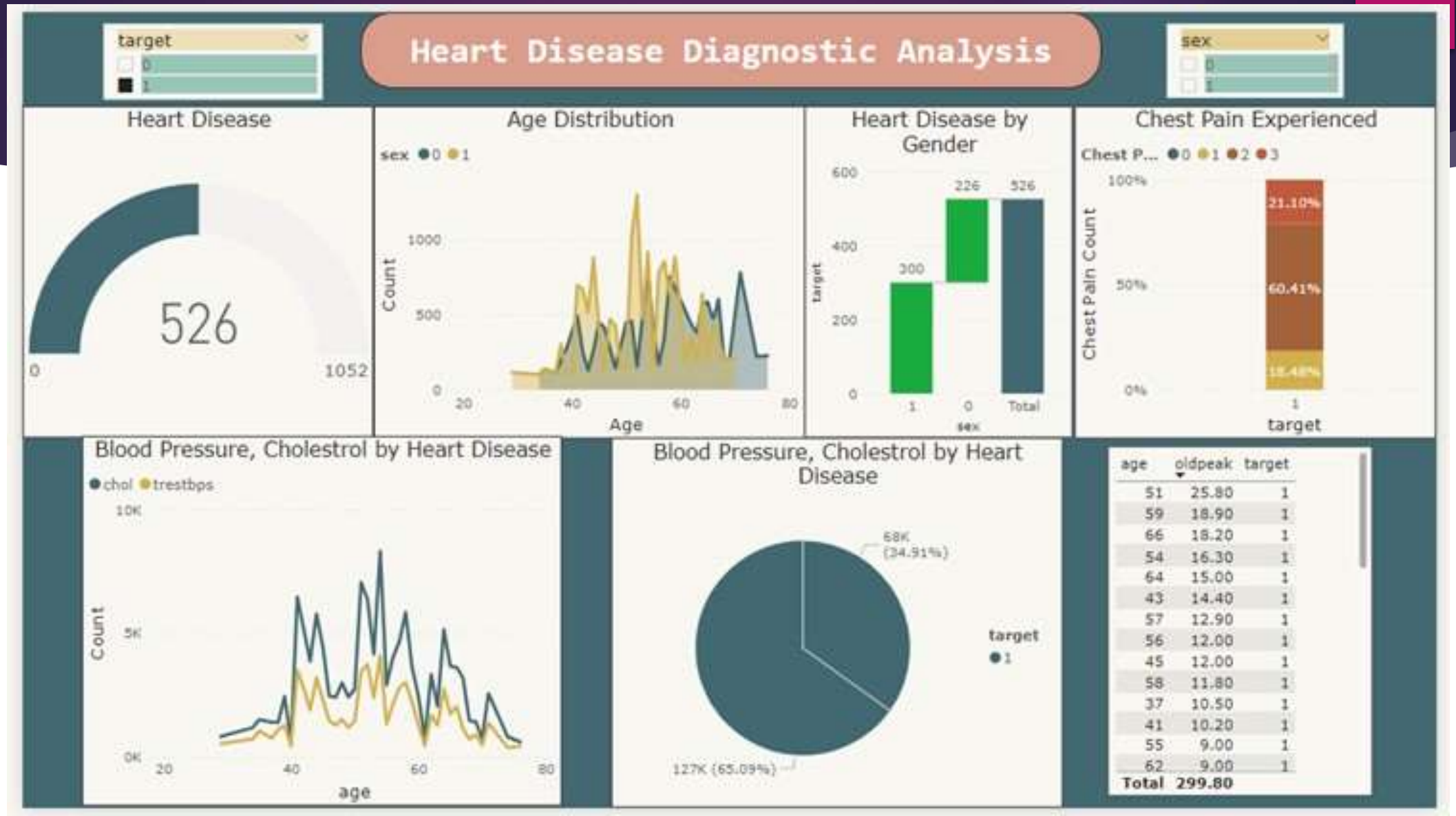
Dataset is available in the given link. You can download it at your convenience.

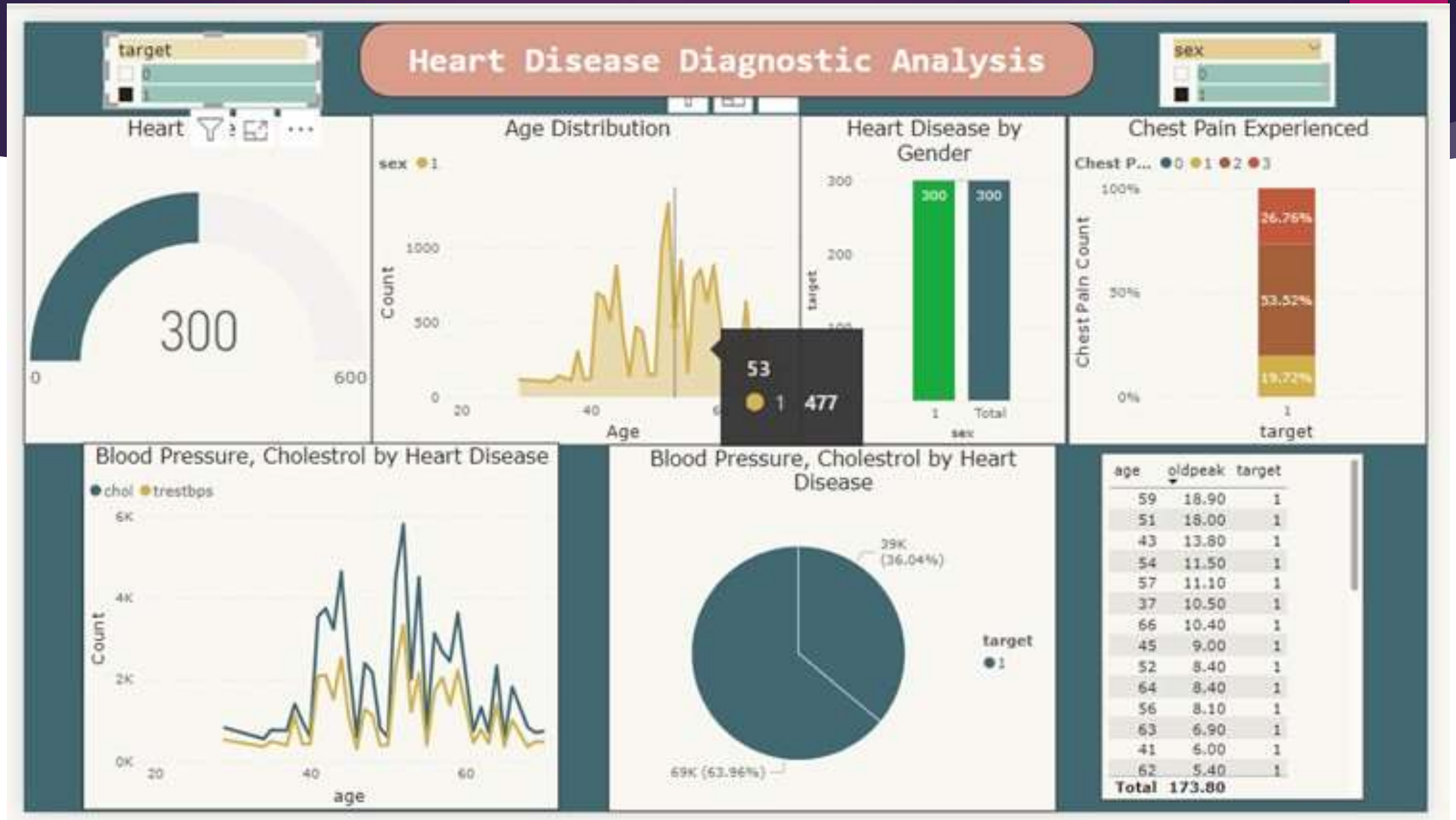
https://drive.google.com/file/d/1U8CHK_ye5jmcuYEeIOYIYcMzK2ooqLUV/view

TOOL USED:

Power BI

Excel Sheet


target
0
1
Heart Disease Diagnostic Analysis
sex
0
1
Heart Disease
526
0
1052
Age Distribution
sex 0 1
Count
1000
500
0
20
40
60
80
Age
Heart Disease by Gender
600
400
200
0
target
226
526
200
1
0
Total
sex
Chest Pain Experienced
Chest P... 0 1 2 3
100%
50%
0%
Chest Pain Count
21.10%
60.41%
18.48%
1
target
Blood Pressure, Cholestrol by Heart Disease
chol trestbps
10K
5K
0K
Count
20
40
60
80
age
Blood Pressure, Cholestrol by Heart Disease
68K (34.91%)
127K (65.09%)
target
1
age oldpeak target
51 25.80 1
59 18.90 1
66 18.20 1
54 16.30 1
64 15.00 1
43 14.40 1
57 12.90 1
56 12.00 1
45 12.00 1
58 11.80 1
37 10.50 1
41 10.20 1
55 9.00 1
62 9.00 1
Total 299.80


target
Heart Disease Diagnostic Analysis
sex
Heart
300
0
600
Age Distribution
sex 1
Count
1000
500
0
20
40
Age
53
1 477
Heart Disease by Gender
300
200
target
300
1
Total
sex
Chest Pain Experienced
Chest P... 0 1 2 3
100%
50%
0%
Chest Pain Count
26.76%
53.52%
19.72%
1
target
Blood Pressure, Cholestrol by Heart Disease
chol trestbps
6K
4K
2K
0K
Count
20
40
60
age
Blood Pressure, Cholestrol by Heart Disease
39K (36.04%)
69K (63.96%)
target
1
age oldpeak target
59 18.90 1
51 18.00 1
43 13.80 1
54 11.50 1
57 11.10 1
37 10.50 1
66 10.40 1
45 9.00 1
52 8.40 1
64 8.40 1
56 8.10 1
63 6.90 1
41 6.00 1
62 5.40 1
Total 173.80

KEY PERFORMANCE INDICATOR (KPI)

1. Number of People Having Heart Disease
2. Age Distribution based on Gender
3. Gender Distribution Based on Heart Disease
4. Chest Pain Experienced by People Suffering from Heart Disease
5. Blood Pressure and Cholesterol Level According to their Age and Heart Disease Patients.
6. ST Depression Experienced by People According heart disease.

CONCLUSION:

HEART DISEASE PATIENTS:

- 526 people are suffering from heart disease, Out of which 300 are male.
- Cholesterol peaks at age 52(5796) for male and 54 for female(3822)
- Blood pressure peaks at 52(3328) for male and 54(1935) for female

- Chest pain :

Male suffer from atypical angina and asymptomatic angina

Female suffer from non-anginal pain

THANK YOU