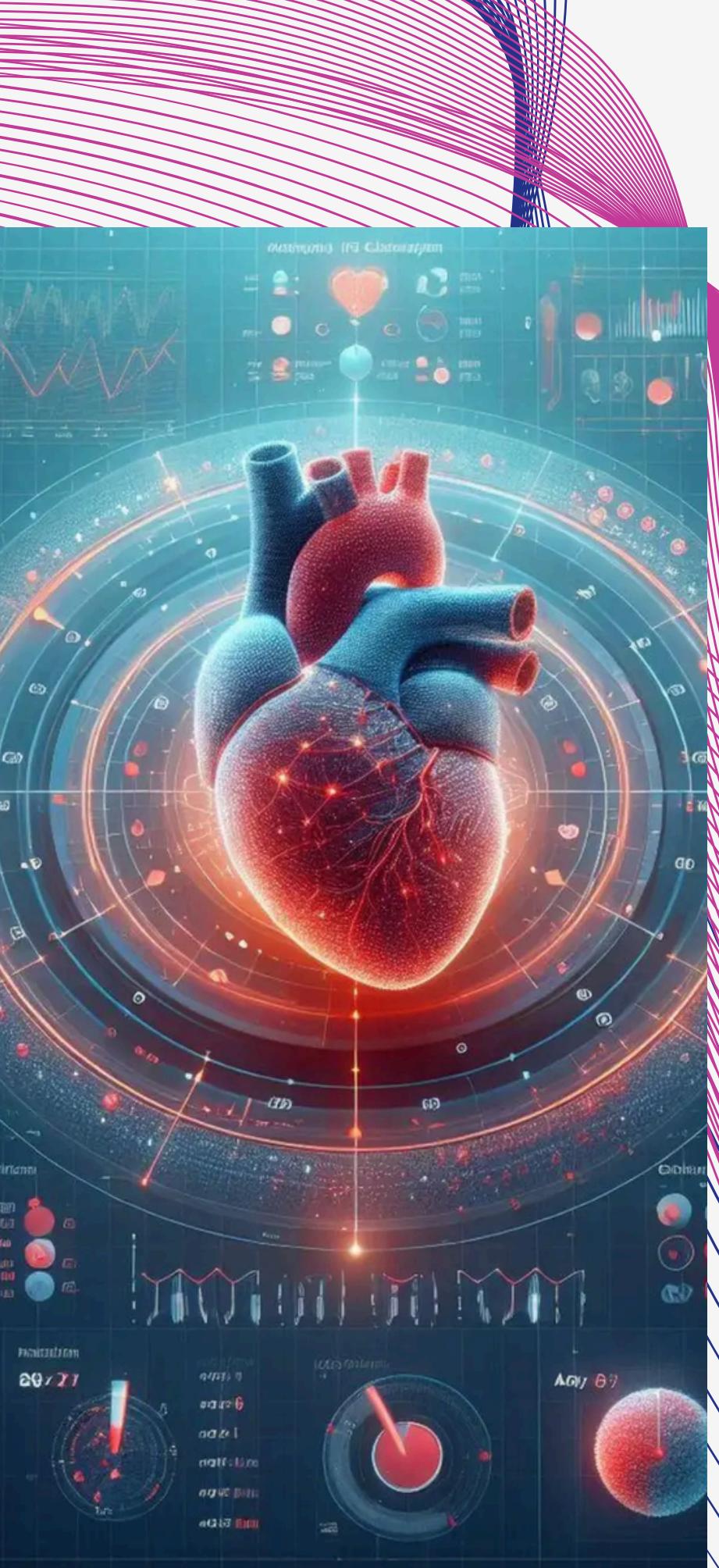


Heart Disease Diagnostic Analysis

By:Ashlesha Sahu

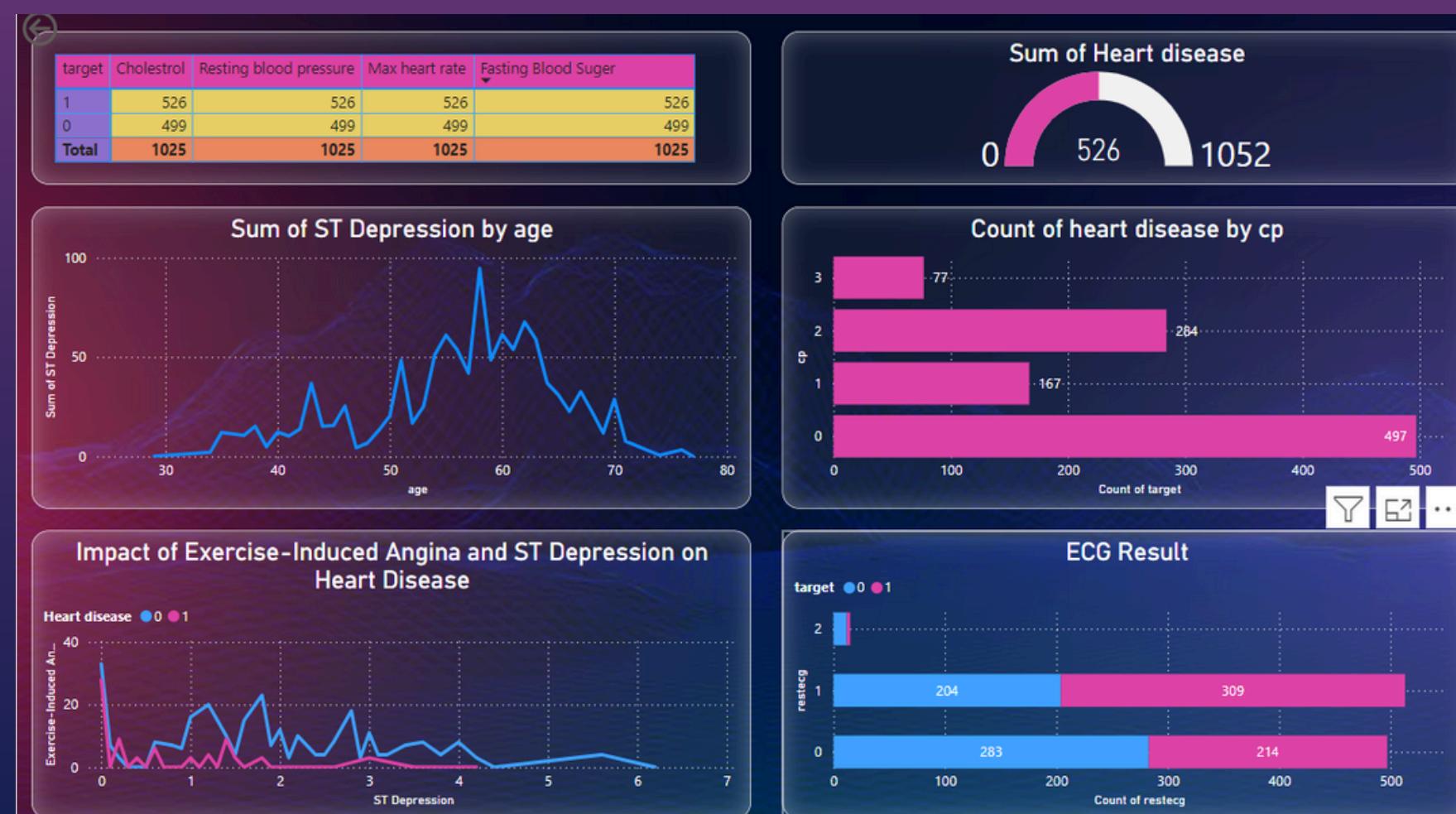
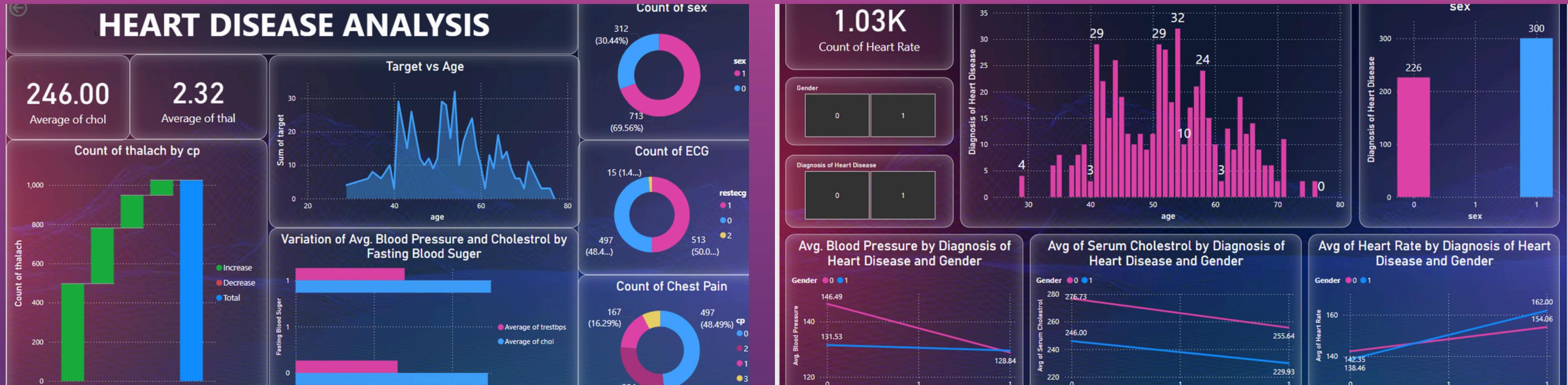


INTRODUCTION

Title: Heart Disease Prediction: A Data-Driven Approach

- Heart disease is a leading cause of death worldwide. Early detection and prevention are crucial for improving patient outcomes.
- Cardiovascular diseases have been the most common cause of death worldwide over the last few decades in developed as well as underdeveloped and developing countries. Early detection of cardiac diseases and continuous supervision of clinicians can reduce the mortality rate. However, it is not possible to monitor patients every day in all cases accurately and consultation of a patient for 24 hours by a doctor is not available since it requires more sapience, time, and expertise.

MY DESIGN

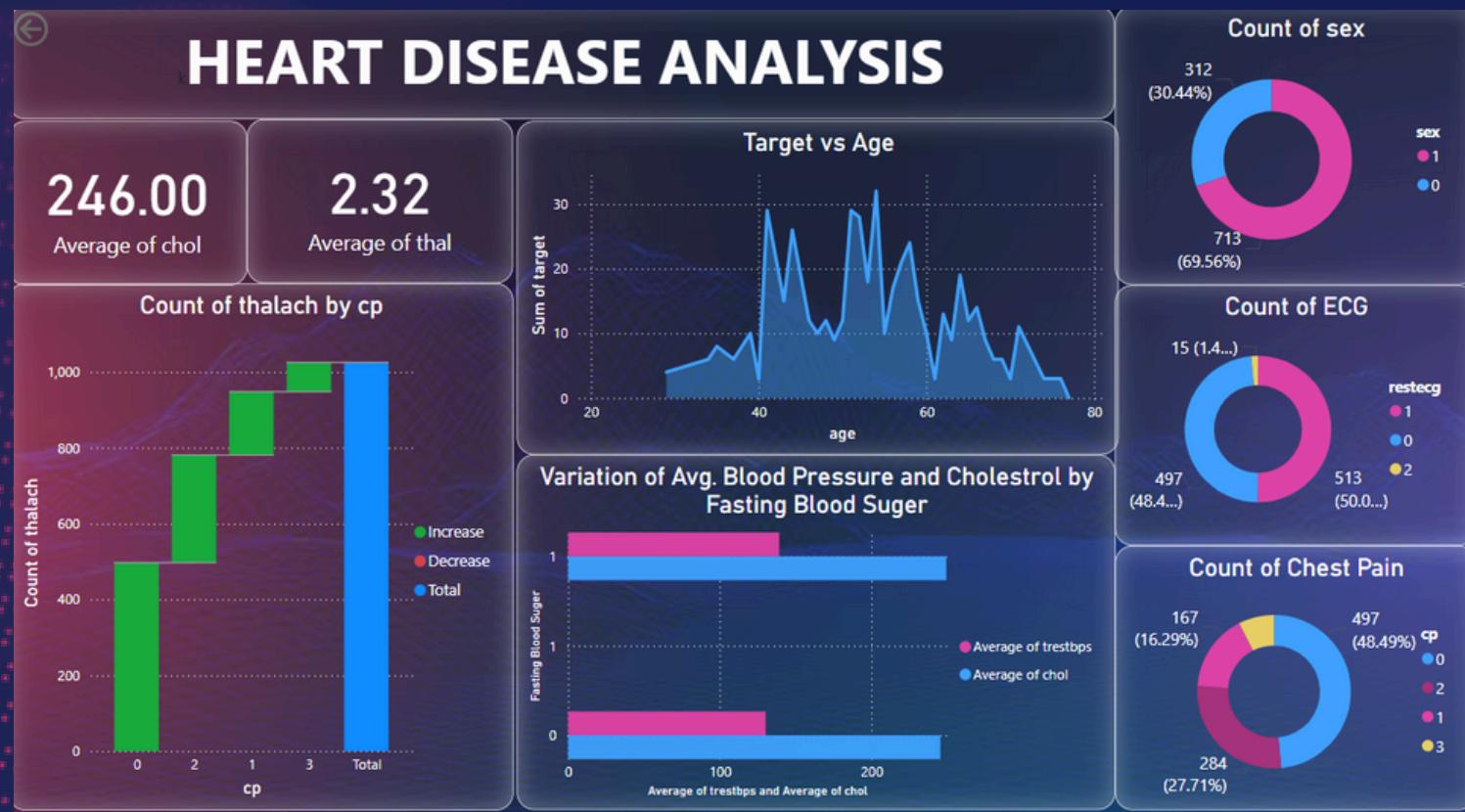


DATASET

age	sex	cp	trestbps	chol	fbs	restecg	thalach	exang	oldpeak	slope	ca	thal	target
52	1	0	125	212	0	1	168	0	1	2	2	3	
53	1	0	140	203	1	0	155	1	3.1	0	0	3	
70	1	0	145	174	0	1	125	1	2.6	0	0	3	
61	1	0	148	203	0	1	161	0	0	2	1	3	
62	0	0	138	294	1	1	106	0	1.9	1	3	2	
58	0	0	100	248	0	0	122	0	1	1	0	2	
58	1	0	114	318	0	2	140	0	4.4	0	3	1	
55	1	0	160	289	0	0	145	1	0.8	1	1	3	
46	1	0	120	249	0	0	144	0	0.8	2	0	3	
54	1	0	122	286	0	0	116	1	3.2	1	2	2	

- This dataset contains information about patients, including their age, sex, chest pain type, resting blood pressure, cholesterol level, fasting blood sugar, resting electrocardiogram results, maximum heart rate achieved, exercise-induced angina, ST-segment depression, slope of the ST segment, number of major vessels, thallium stress test result, and target variable (heart disease presence).

- Prevalence: Heart disease is prevalent in the dataset, with 69.56% of individuals diagnosed.
- Age and Sex: Heart disease affects a wide range of ages and sexes, with a slight predominance in males.
- Risk Factors: Cholesterol: High average cholesterol levels (246.00) are a significant risk factor.
- Thallium Stress Test: Abnormal thallium stress test results (2.32) indicate potential heart issues.
- Chest Pain: Individuals with chest pain, especially type 2, are at higher risk.
- Electrocardiogram: Abnormal ECG results (15 out of 1000) may suggest underlying heart problems.
- Fasting Blood Sugar: Variations in fasting blood sugar can influence heart disease risk.



Demographics:

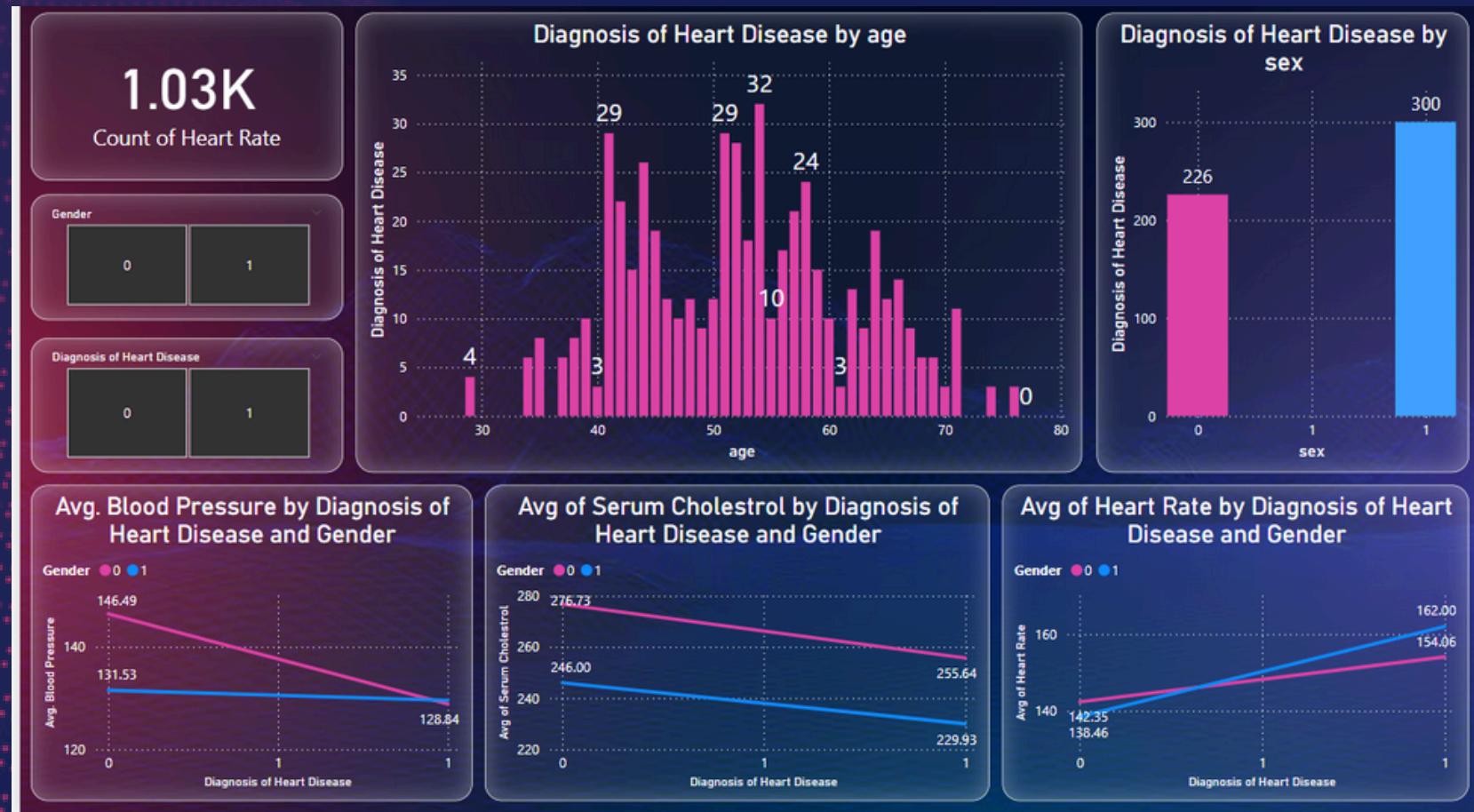
- Age: Heart disease prevalence peaks between the ages of 50 and 60.
- Sex: Males are more likely to be diagnosed with heart disease than females.

Risk Factors:

- Heart Rate: The average heart rate for individuals with heart disease is slightly lower than for those without.
- Blood Pressure: Patients with heart disease tend to have higher average blood pressure.
- Serum Cholesterol: Higher cholesterol levels are associated with an increased risk of heart disease.

Gender Differences:

- Blood Pressure: Males have higher average blood pressure compared to females.
- Serum Cholesterol: Females have slightly lower cholesterol levels on average.
- Heart Rate: Heart rates are similar between males and females.

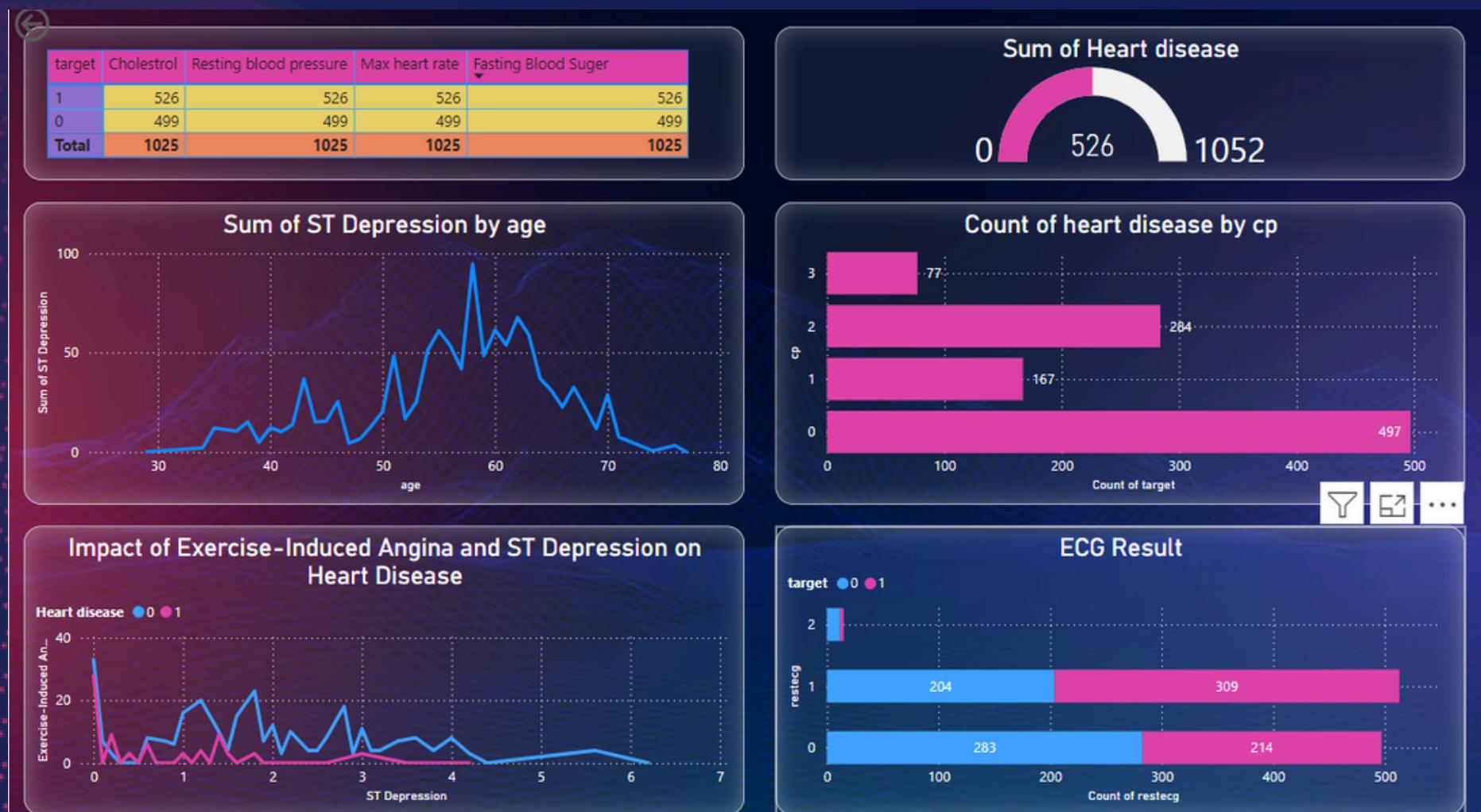


Prevalence:

- Heart disease is prevalent in the dataset, with 526 out of 1025 individuals diagnosed.

Risk Factors:

- Age: The highest number of heart disease cases occurs between the ages of 50 and 60.
- Chest Pain: Individuals with chest pain type 2 have the highest risk of heart disease.
- ST Depression: Higher levels of ST depression are associated with an increased risk of heart disease.
- Exercise-Induced Angina: Exercise-induced angina is a significant risk factor, particularly in combination with ST depression.
- ECG Results: Abnormal ECG results (restecg = 1) are associated with a higher likelihood of heart disease.



THANK YOU