Heart Attack Prediction Dashboard

using Kaggle Dataset

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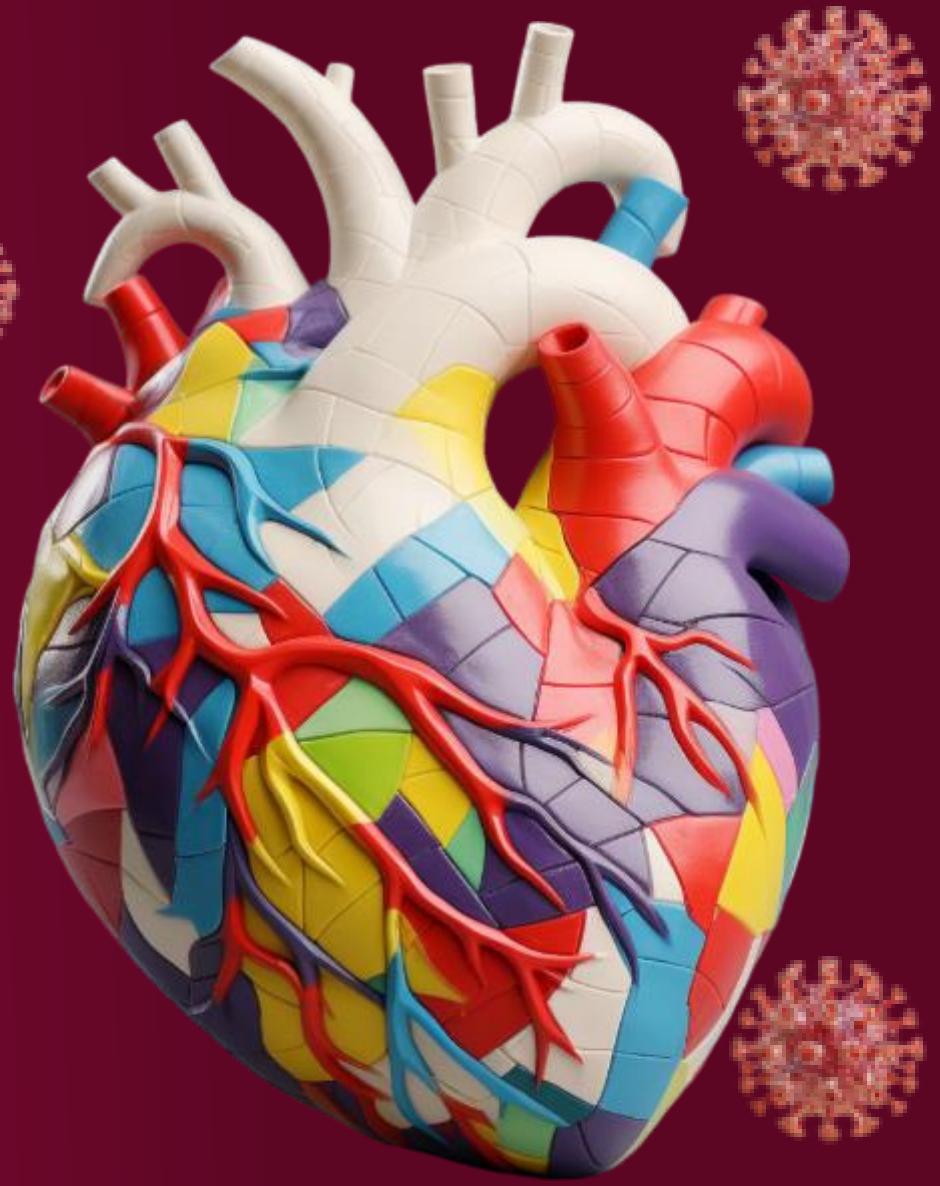


INTRODUCTION

Heart attacks are a leading cause of death globally. Early detection through biomarkers and vitals can save lives.

This project explores a heart attack dataset using **exploratory data analysis (EDA)** to uncover patterns in:

- Demographics (Age, Gender)
- Vitals (Blood Pressure, Blood Sugar)
- Biomarkers (CK-MB, Troponin)

Goal: To visually identify risk factors and support early prediction.

DATASET OVERVIEW

Source: Kaggle – Heart Attack Prediction Dataset
Link: https://www.kaggle.com/datasets/….

Features Included:

- Gender, Age
- Systolic BP, Diastolic BP
- Blood Sugar
- CK-MB, Troponin
- Result (Positive/Negative)

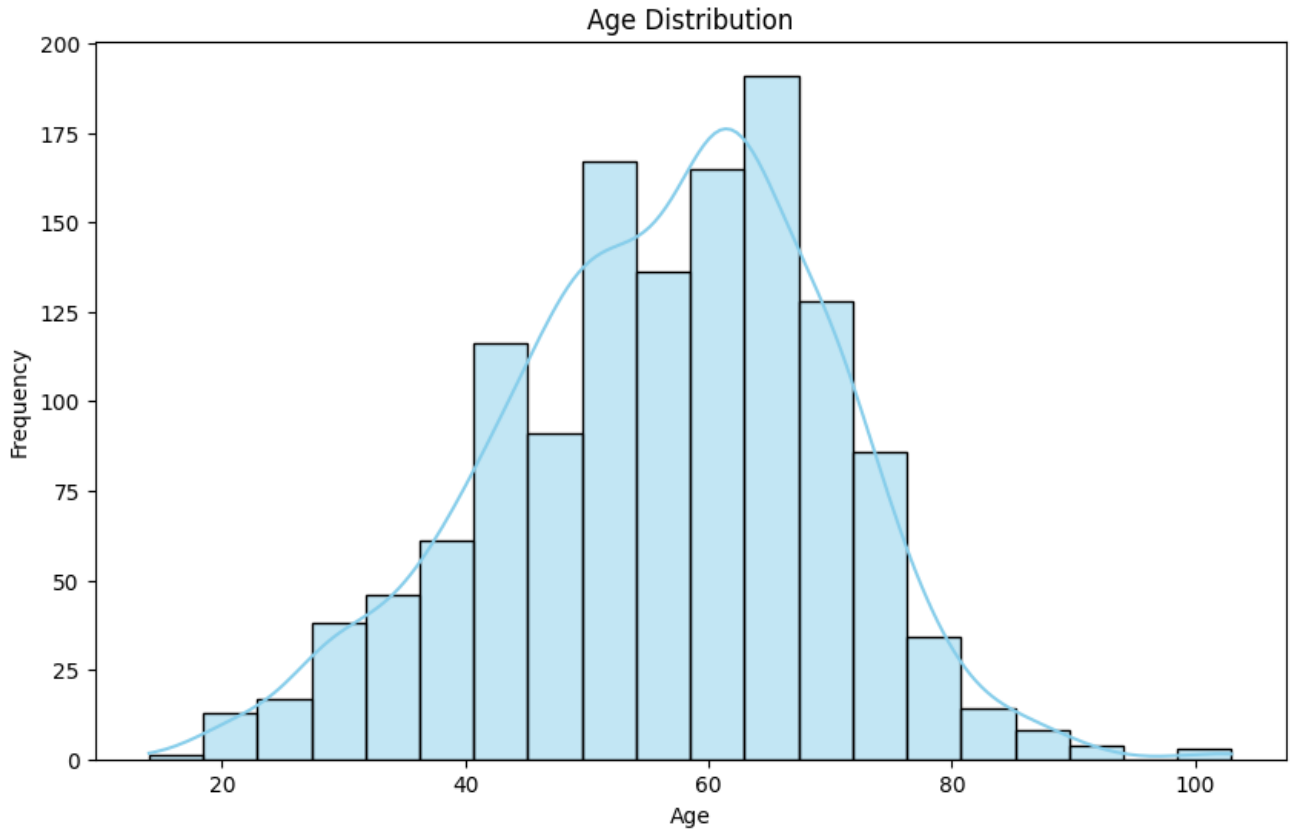
Records: ~XXXX patients
Target Variable: Result (0 = Negative, 1 = Postive)

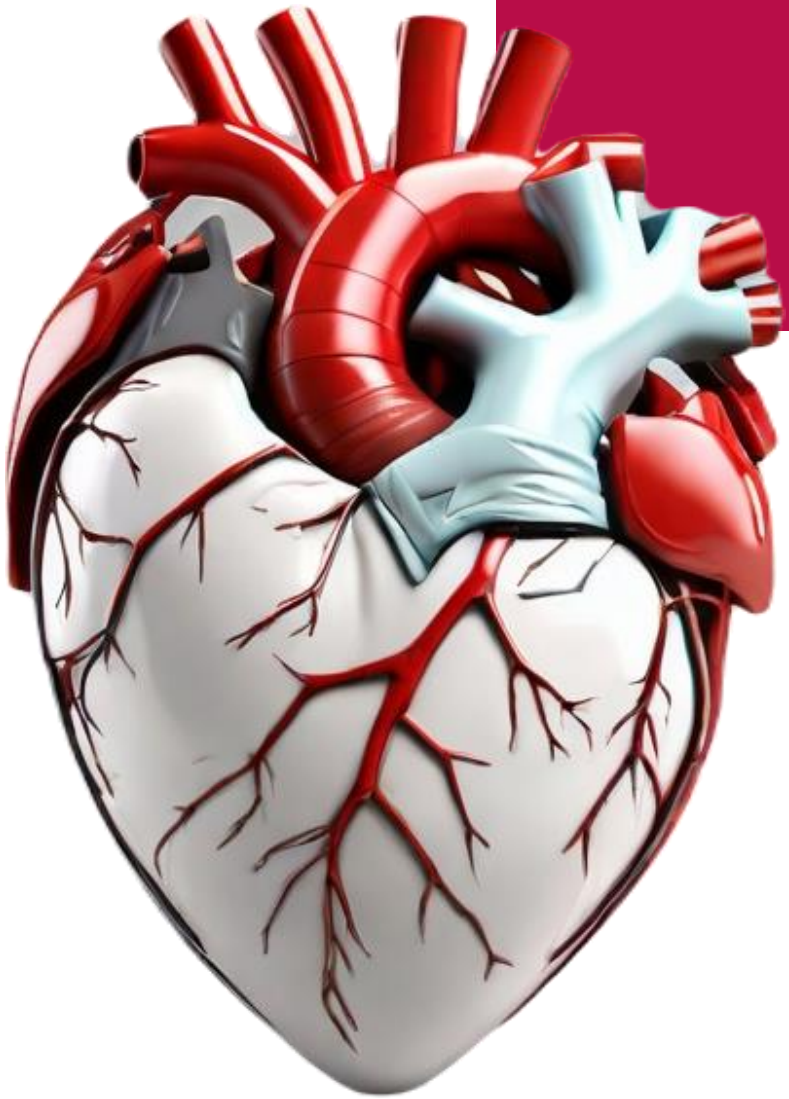
AGE DISTRIBUTION

Chart: Histogram – Age vs Frequency

Insight:

- Most patients are between 40–60 years old
- Heart attack risk increases with age



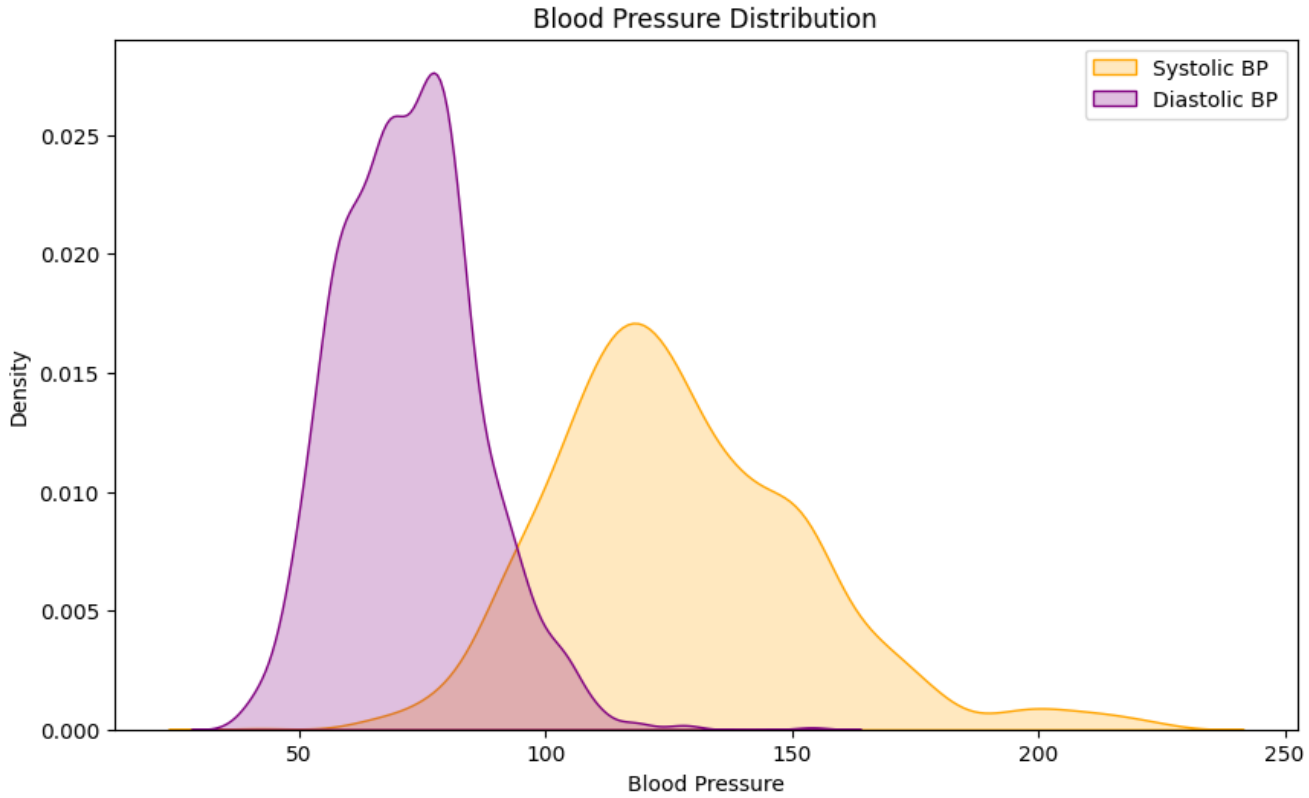


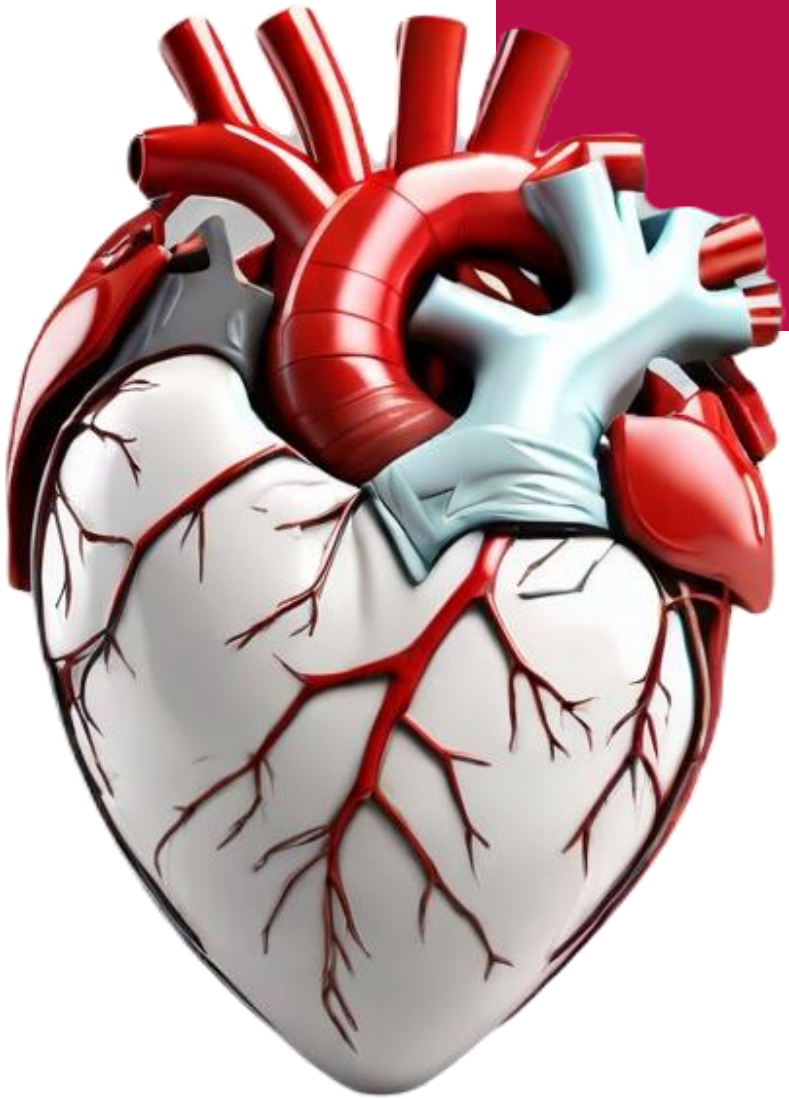
BLOOD PRESSURE DISTRIBUTION

Chart: Density Plot – Systolic & Diastolic BP

Insight:

- Most patients fall in normal to high BP range
- Systolic BP > 140 is a known risk factor



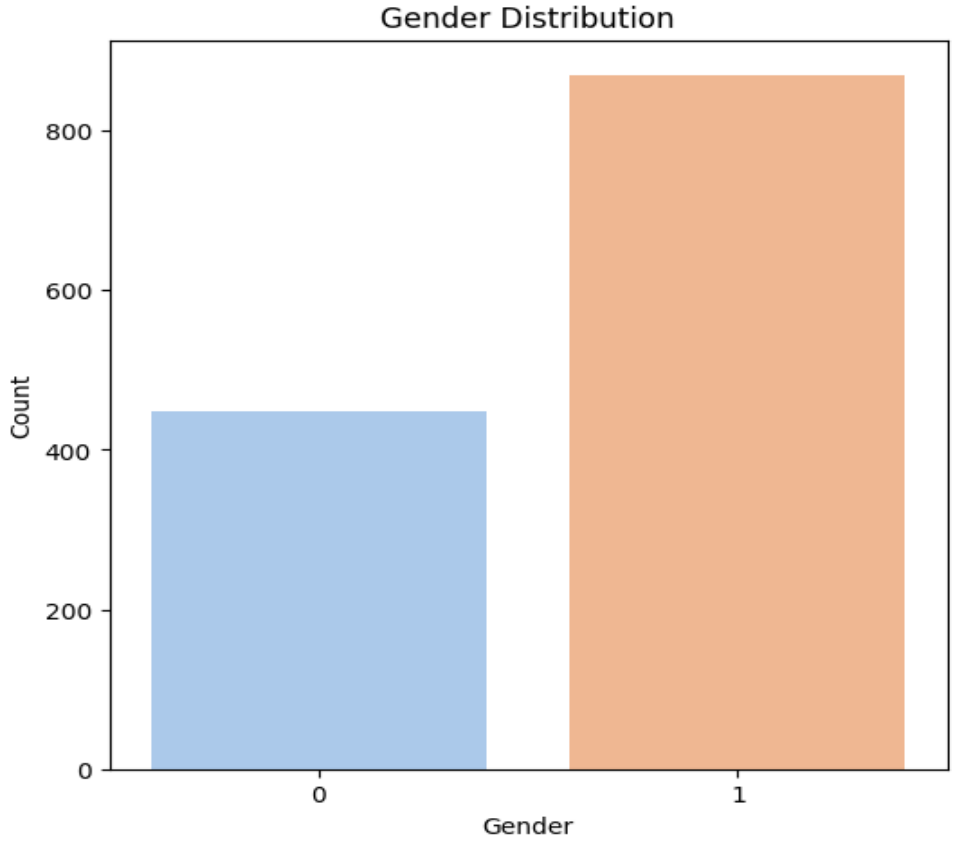


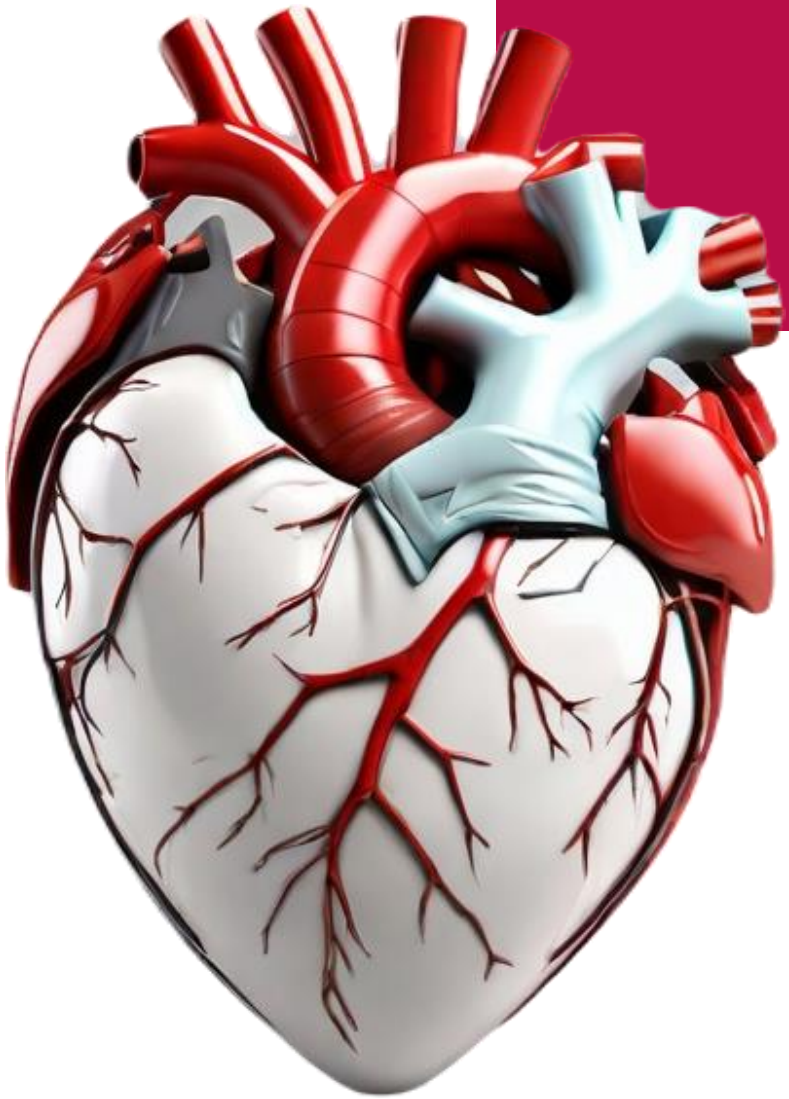
GENDER DISTRIBUTION

Chart: Bar Graph – Male vs Female Count

Insight:

- Slightly higher male representation in dataset
- Gender may influence risk, but both genders are susceptible



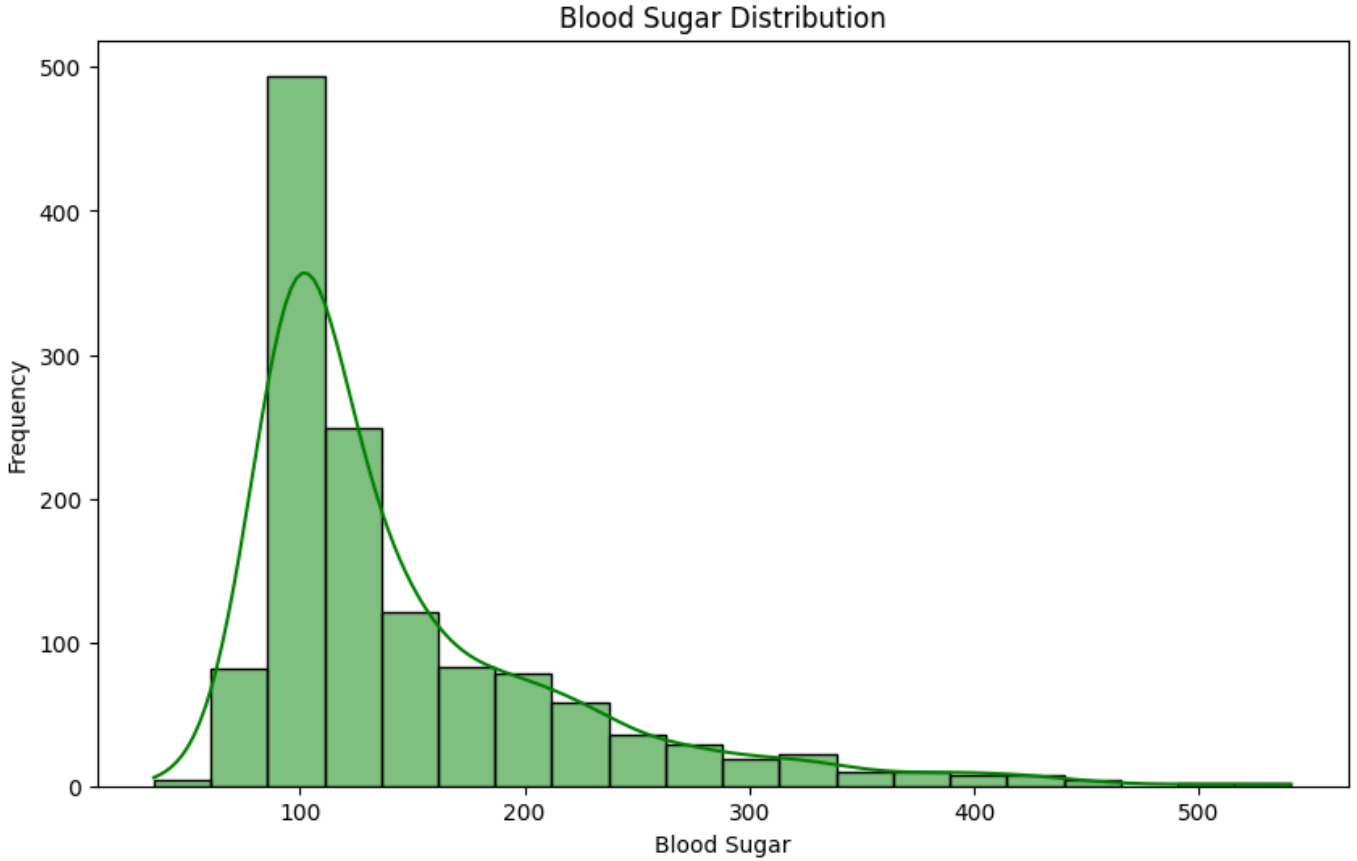


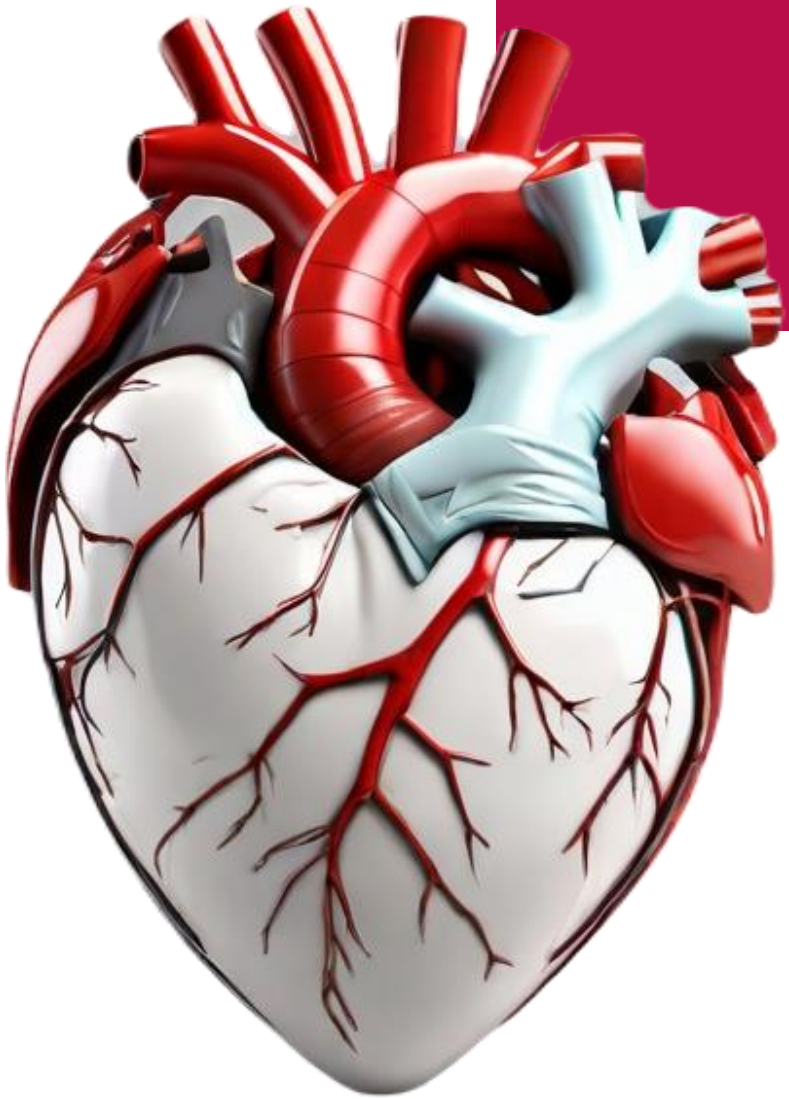
BLOOD SUGAR DISTRIBUTION

Chart: Histogram – Blood Sugar vs Frequency

Insight:

- High blood sugar (> 200) is linked to higher heart risk



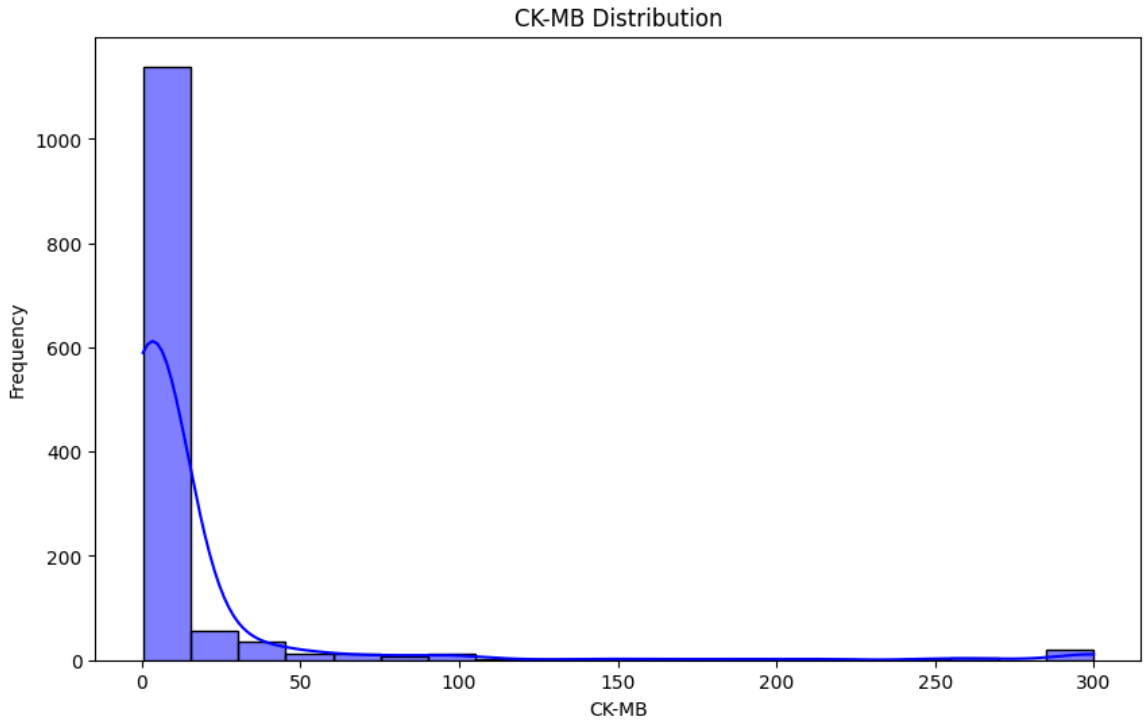


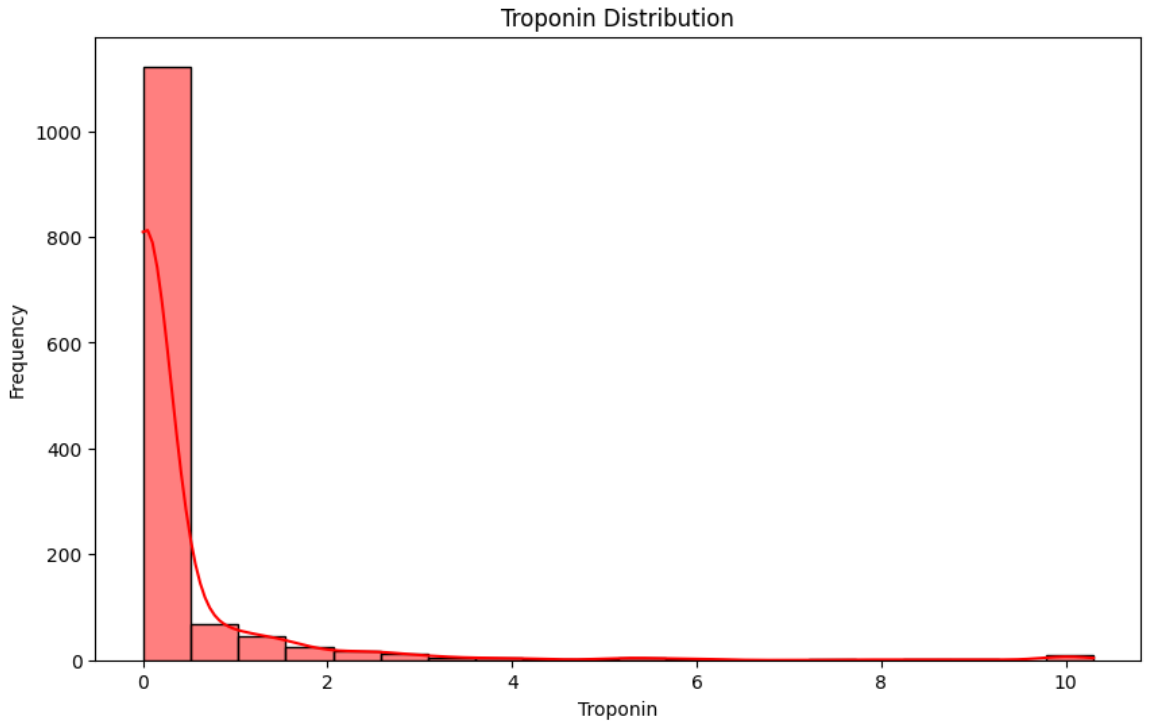
BIOMARKERS: CK-MB & TROPONIN

Chart 1: CK-MB Histogram
Chart 2: Troponin Histogram

Insight:

- Elevated CK-MB and Troponin indicate heart muscle damage
- Troponin is a key diagnostic marker for heart attacks



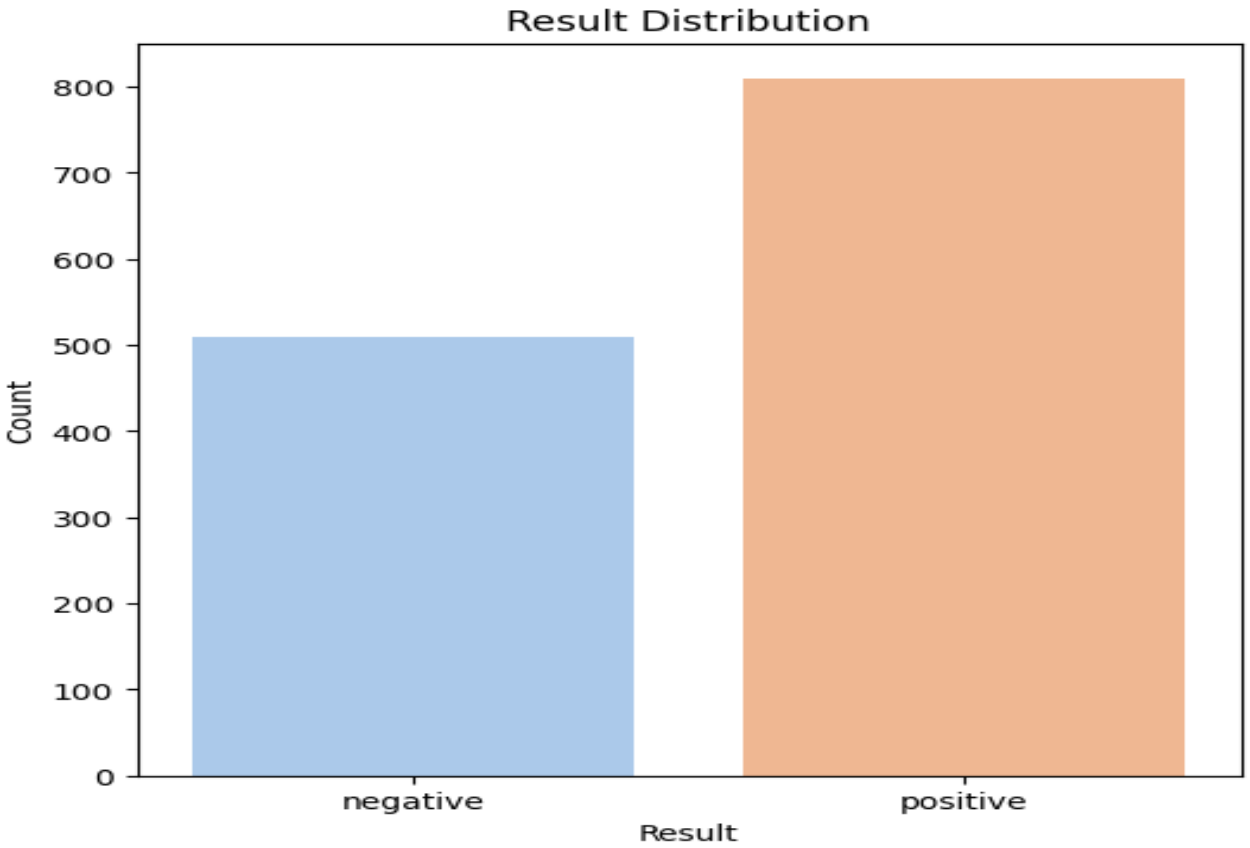


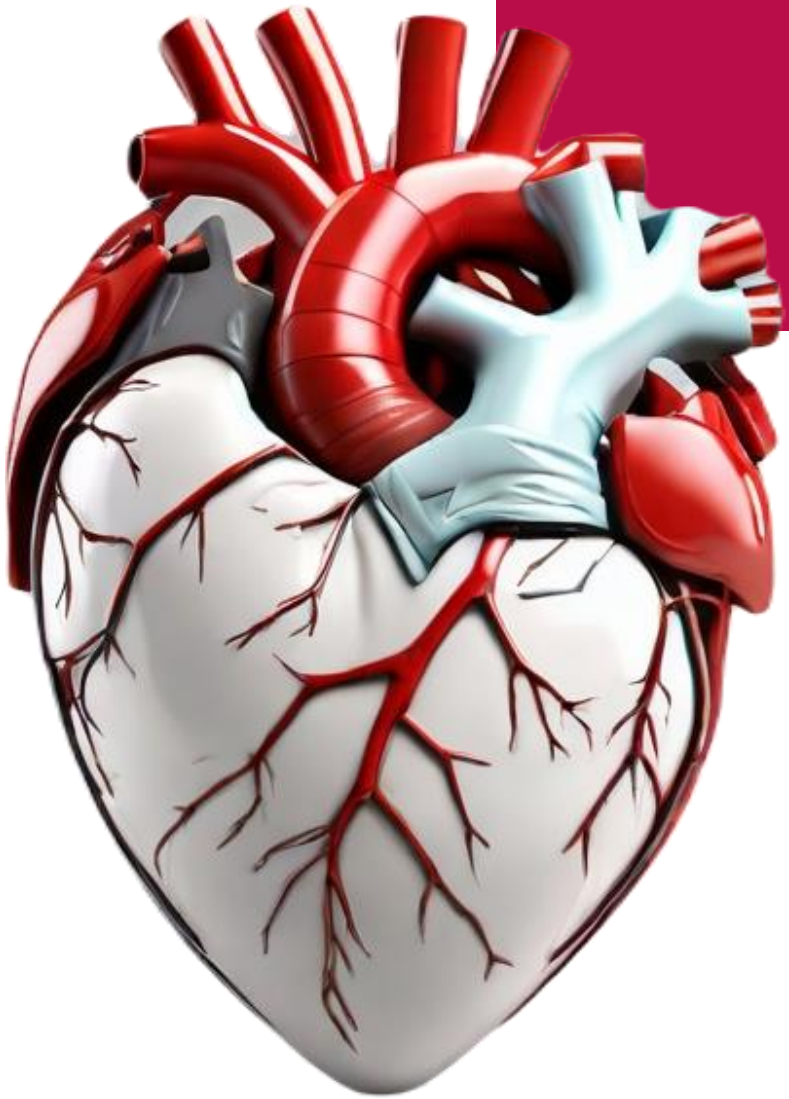
RESULT DISTRIBUTION

Chart: Bar Chart – Positive vs Negative Cases

Insight:

- XX% of cases are positive for heart attack
- Shows prevalence in dataset





KEY INSIGHTS SUMMARY

- **Age is a strong predictor** - Risk increases after 40

- **High BP & Blood Sugar** el evate heart attack risk.

- **Biomarkers (Troponin, CK-MB)** are critical for diagnosis.

- **Gender difference exists** but risk is significant in both.

- **Early monitoring** of vitals can aid prevention.

CONCLUSION

This dashboard highlights how **data visualization** can uncover hidden patterns in medical data.

Future Work:

- Build a predictive model (Logistic Regression / Random Forest)
- Deploy as an interactive web dashboard
- Include real-time risk scoring

REFERENCES & LICENSE

Dataset Source:
Kaggle – Heart Attack Dataset

Notebook Reference:
https://www.kaggle.com/code/sukhmandeepsinghbrar/heart-attack-dataset-visualization

Tools Used:
Python, Matplotlib, Seaborn, Pandas

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