



# DiagnoSci

Early detection of Heart Disease using existing  
lab results of patients

## Participants:

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## Who are we?

DiagnoSci is a Data Consulting agency providing advanced medical insights to patients, by utilizing diagnostic exams.

We turn Data into Life Saving Knowledge!



# What is our job?

- Apply **Machine Learning** models on existing medical records of patients, to predict risk for heart disease.
- **Notify patients that exhibit signs of oncoming heart disease**, in order for them to contact their doctor and follow preventive measures.



# The Data

- 700+ Exam Results of patients
- 12 different markers
  - Blood Pressure, Blood Sugar, Cholesterol Levels, Age, Sex etc.
- 55% of patients with existing Heart Disease



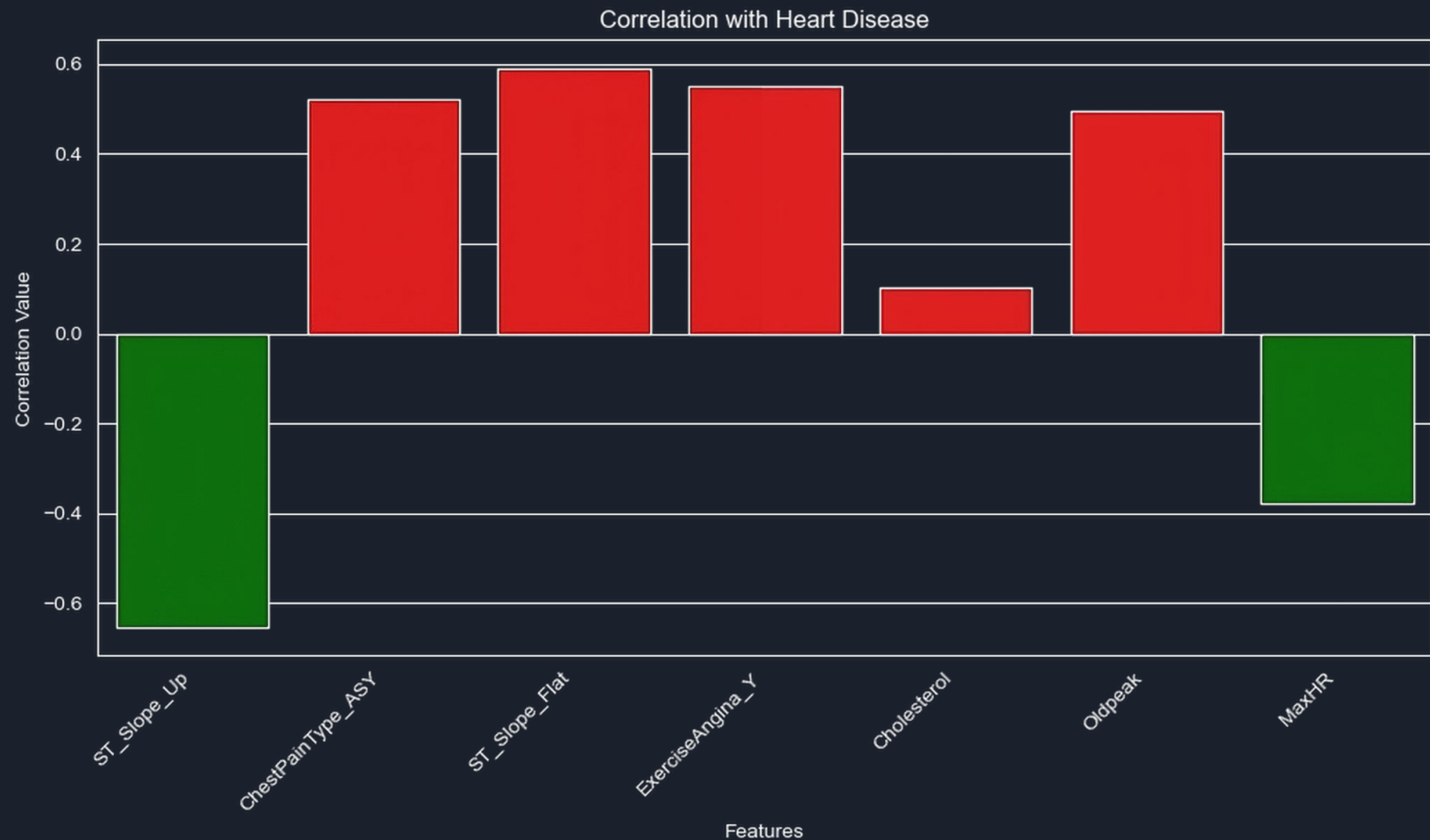
# Top Factors

## NEGATIVE

1. Flat peak exercise ST segment
2. Asymptomatic chest pain
3. Exercise Angina
4. High Cholesterol
5. High Oldpeak (downward deviation of ST compared between exercise and rest)

## POSITIVE

1. Upsloping peak exercise ST segment
2. High Max Heart Rate

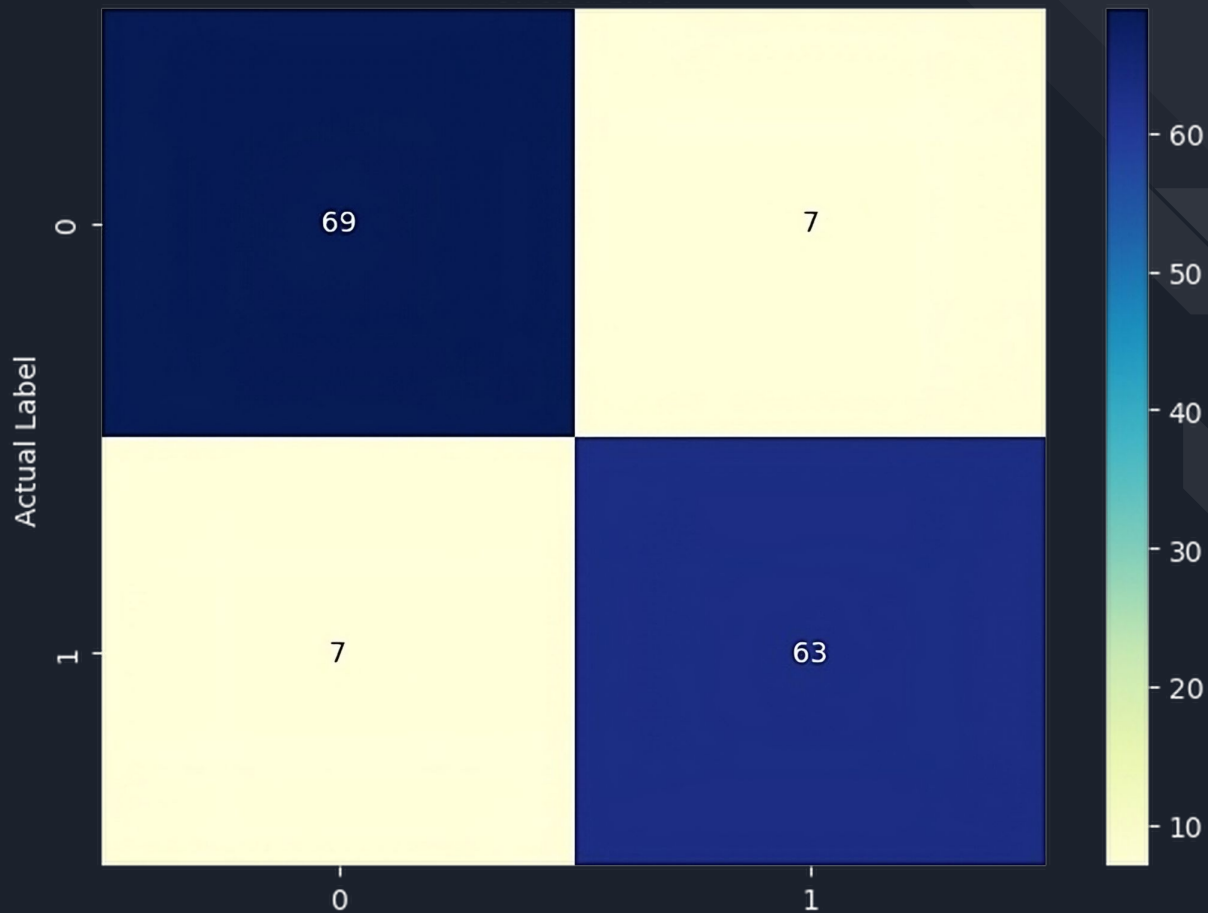




# Prediction Model

- 80% of the exam results used in training our model
  - RandomForest
- Our focus is to correctly identify most of the people with Heart Disease.
  - High Emphasis on Recall Score
- The rest 20% is used to measure the accuracy of our predictions

Confusion matrix  
Predicted Label



# Prediction Results

→ 76

→ 70





## Summary | Outlook

- 91% of the patients WITH Heart Disease were correctly identified
- 9% of the patients WITHOUT Heart Disease were misdiagnosed
- Further model refinement can be achieved with more exam results
- Examine how additional markers affect the predictions

A blue parallelogram and a light green parallelogram are positioned on the left side of the slide, overlapping each other and the dark background. The blue shape is on the left, and the green shape is to its right, partially overlapping it.

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