



# Heart Disease Predictions

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## Stakeholders

- Doctors that treat heart disease or patients that are be seen because they may have heart disease are the two most important stakeholders for this dataset and would benefit the most from this model.

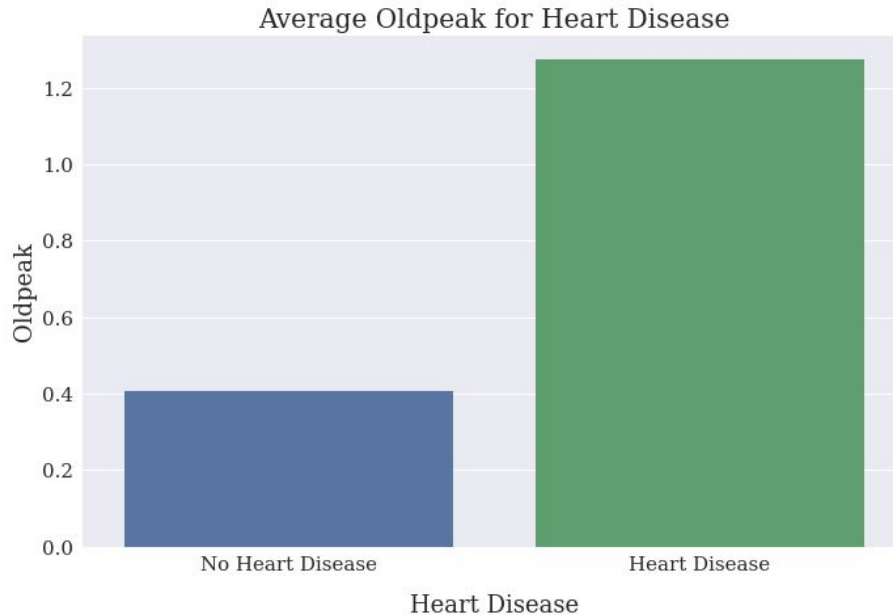


# Data

```
Age          int64
Sex          object
ChestPainType object
RestingBP    int64
Cholesterol  float64
FastingBS    object
RestingECG   object
MaxHR        int64
ExerciseAngina object
Oldpeak      float64
ST_Slope     object
HeartDisease int64
dtype: object
```

This data contains multiple numeric and categorical data. The numeric data looks at Age, Resting Blood Pressure, , Cholesterol, Max Heart Rate, and Old Peak. While our categorical data that was used to in our models was Sex, Chest Pain Type, Fasting Blood Sugar, Resting ECG, Exercise Angina, and ST Slope.

# Insight One

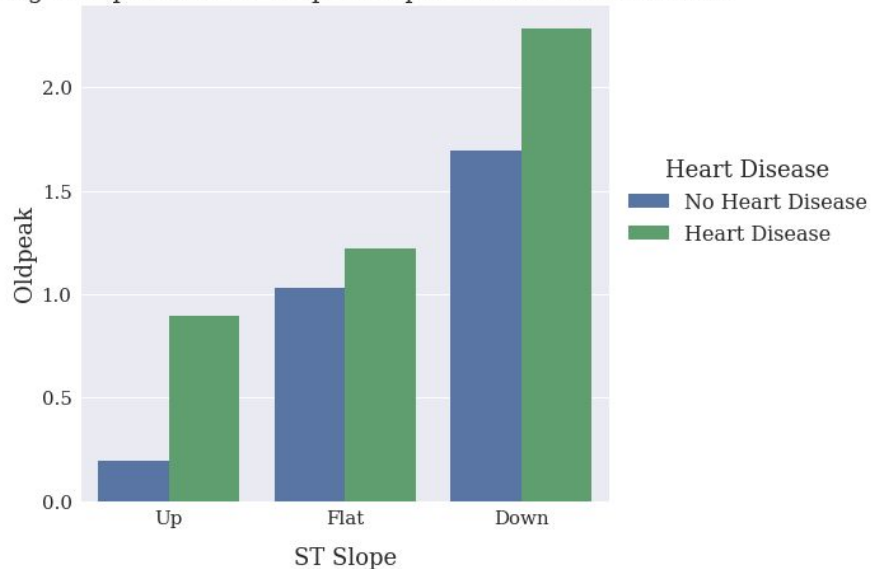


To understand this graph we first must understand what Oldpeak is. Oldpeak is the depression of the ST Segment on an EKG. This shows us that individuals with heart disease have on average a oldpeak of around 1.2. While those without oldpeak have an oldpeak around 0.4. This tells us that oldpeak is can be explored as prominent feature in predicting heart disease in some individuals.

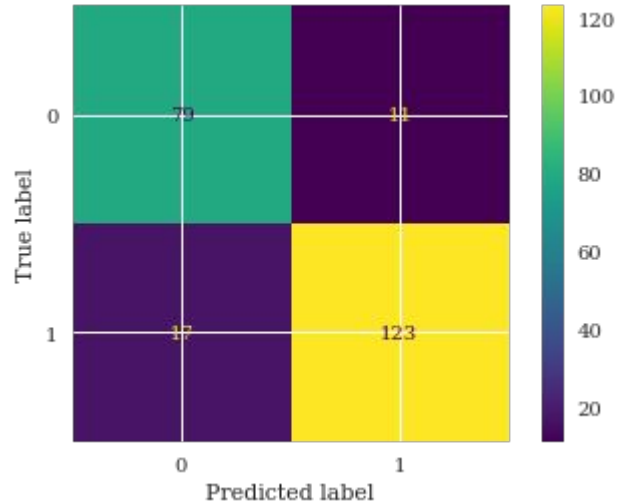
## Insight Two

This plot further explores oldpeak; which is the depression of the ST Segment on an EKG. This time we evaluated the the average Oldpeak based on the type of ST Segment the individual has. A lower Oldpeak is seen for those without heart disease

Average Oldpeak for ST Slope compared with Heart Disease



# Limitations



## Limitations

- This model was able to limit false negatives down to 17 on the testing set, But that is still a significant number of individuals being told they don't have heart disease when they actually do and need treatment.



## Recommendations

Next Steps, would be to work with a Subject Matter expert to find out which features are the most important, and what we could do for feature engineering to better improve the number of false negatives. Minimizing that number is the most important part of being able to properly treat individuals that may have Heart Disease.