

Heart Attack Analysis & Prevention Data

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&

Thank You National Science
Foundation

Who we are



Alexis Perkins

Health Sciences

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Computer Science and Electrical
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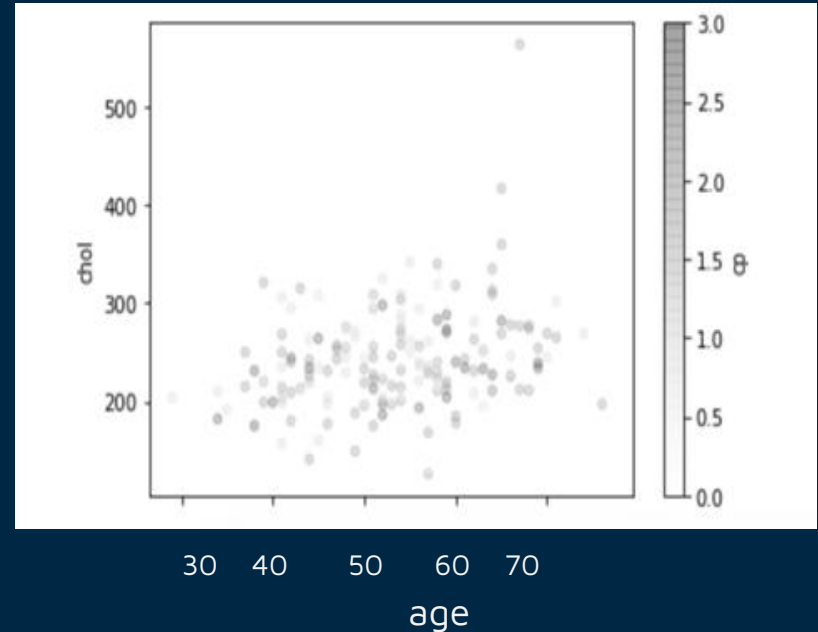
Incoming Freshman
Washington DC and Accra,
Ghana

Hypothesis & Research Question

- “Those with high levels of cholesterol have a higher chance of having a heart attack.”
- Is there a correlation between cholesterol, chest pain, age?

Our Data

- Making predictions about chest pain (cp), cholesterol (chol), & age
- Predicting if there's a correlation between chest pain and cholesterol levels
- High cholesterol: 240 mg/dl & up
- 303 patients
- Average cholesterol: 246 mg/dl



Why It is Important

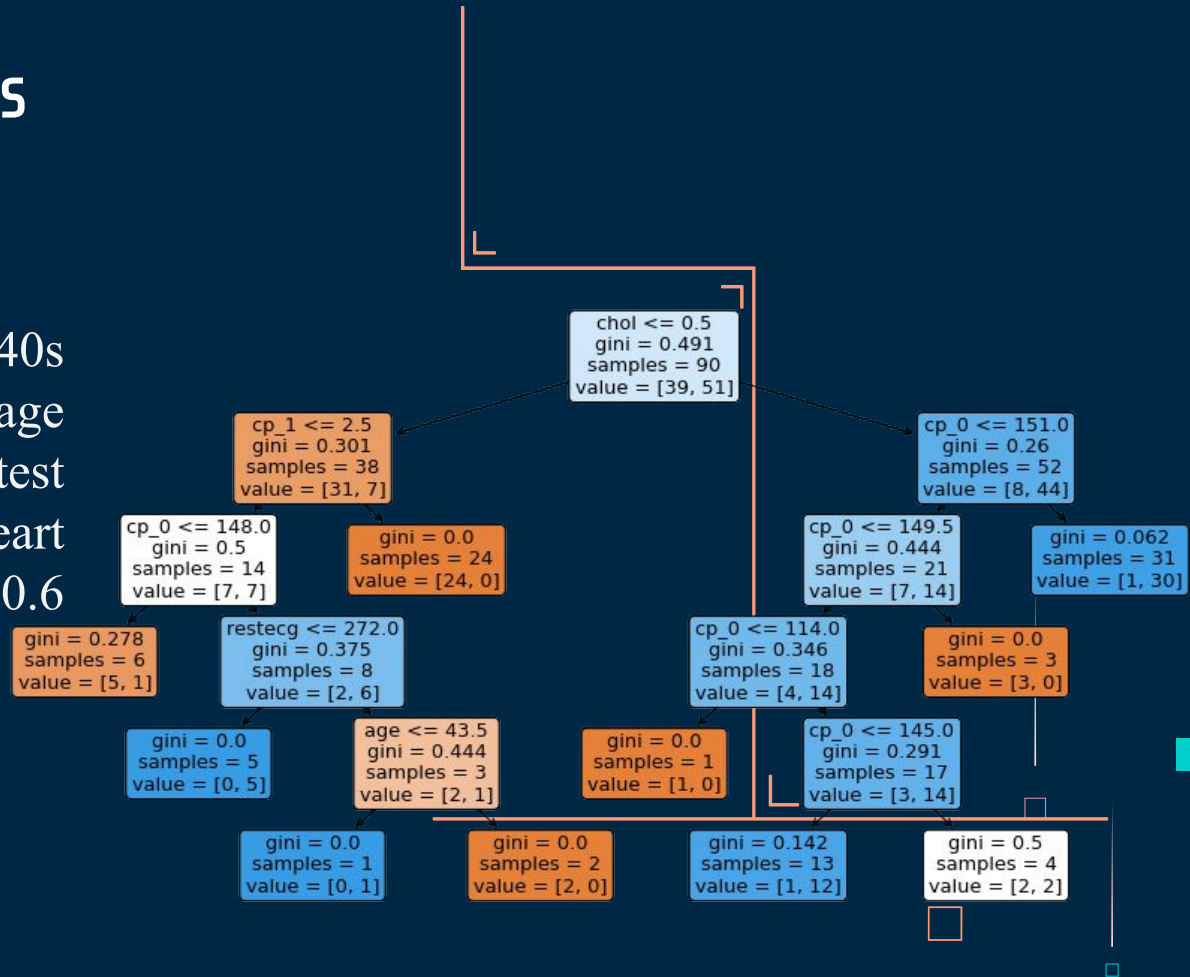
By randomly choosing 3 variables, and focusing on 1 we can further analyze the variables that are important for concluding heart attacks , and remove the factors that prove little to nothing.

Description of Methods

- Python programming
- How we analyzed the data
 - Random Sampling
 - Decision Tree Classifier
 - Confusion Matrix
 - Data Cleansing
 - Scatter Plots

Analysis & Results

- test subjects in their 30 - 40s with heart attacks have average 1.5 chest pain comparing to test subjects who did not have heart attacks with a chest pain of 0.6 and 0.4
- Accuracy of 63%



Accuracy Dataset

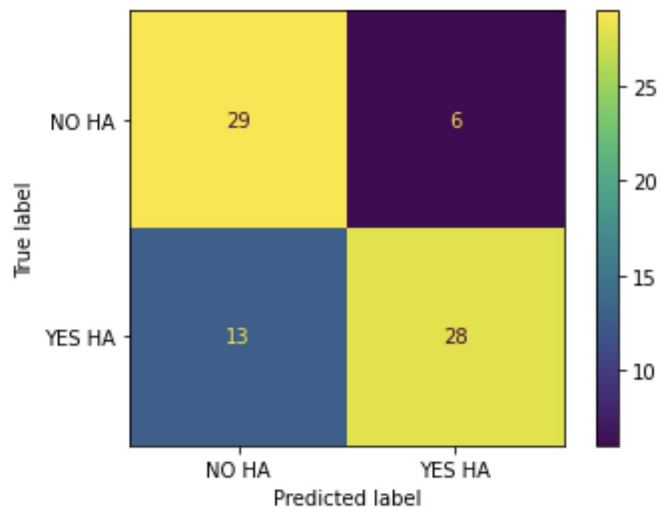


Chart 1: Test
DataSet

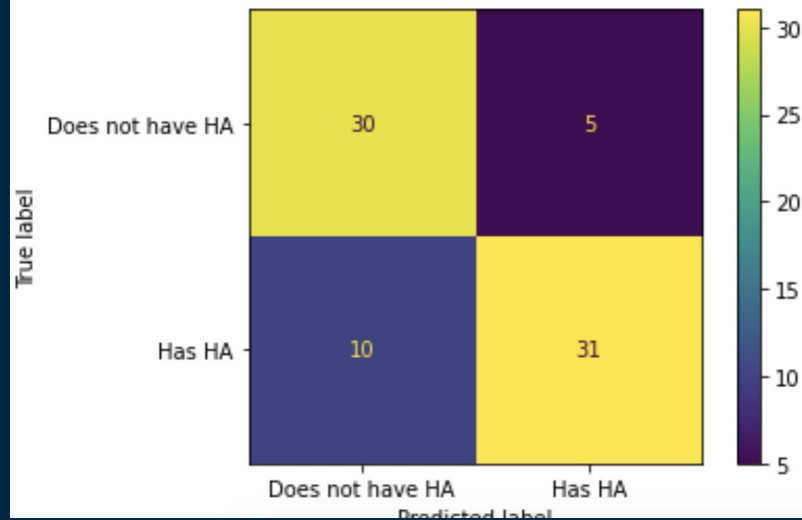
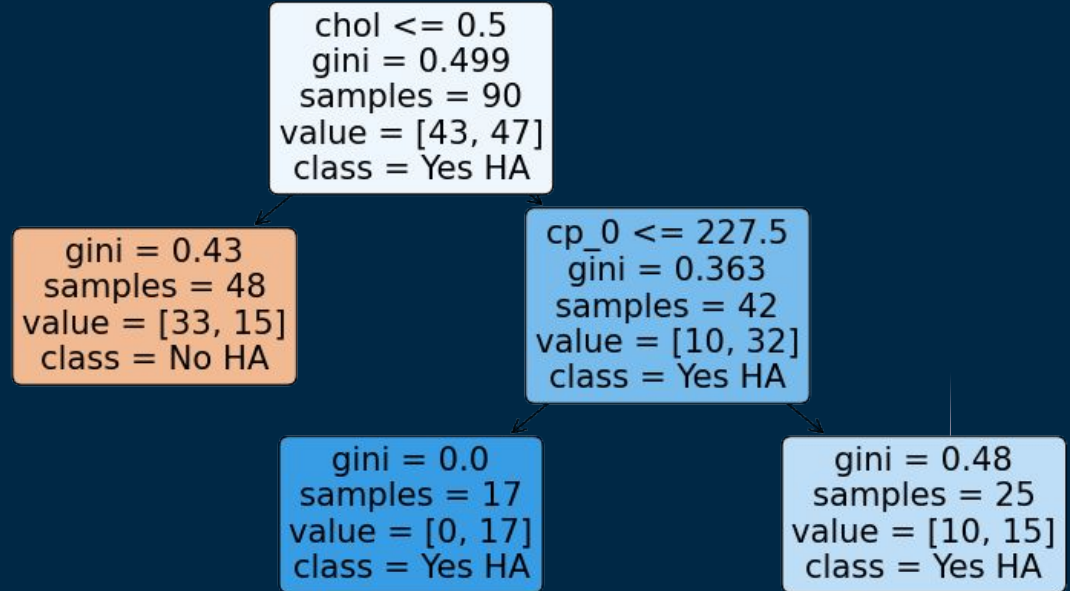


Chart 2: Trained
DataSet

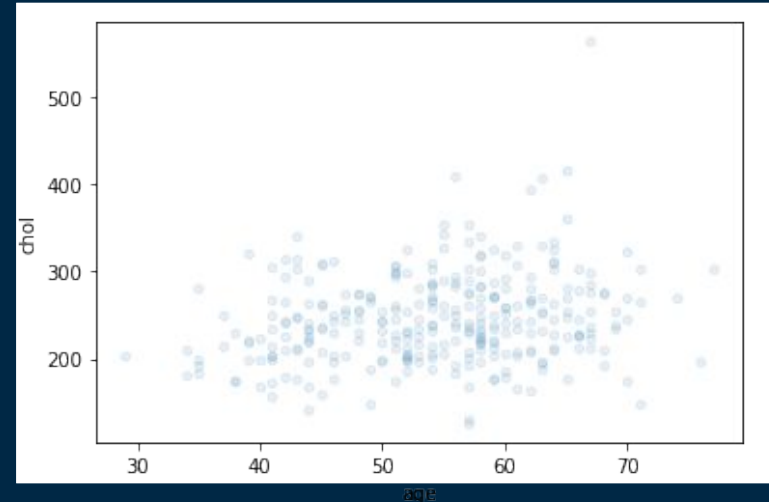
Predictions Results & Conclusion

- Cholesterol higher than 227 has a 46% chance of getting a heart attack
- Chest Pain higher than 2.5 has a 55% chance of a heart attack.



Conclusion

- Reject Hypothesis
- People aged 50-70 have higher cholesterol levels.



Limitations

Small Sample Size



Uncertain of How
Data was
collected

Predictions Only
Apply to Dataset



Mentors

Thank you to...

Dr. Donald Williamson

Dr. Jeticia
Sistrunk

National Science
Association

The background is a dark blue field decorated with a pattern of small squares and thin vertical lines. The squares are in three colors: light blue, pink, and orange. Some squares are solid, while others are hollow. The vertical lines are thin and white, extending from the top or bottom of the frame. The overall aesthetic is modern and minimalist.

THANK YOU