

Using Personal Risk Indicators to identify Heart Disease in patients



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Why is this important?

- According to CDC, heart disease or CVD (cardiovascular disease) is the leading cause of death in the U.S.
- The increase in hospital admissions since 2020 could impact the quality of care, so providing something to help clinical staff quickly and effectively assess potential heart disease in a patient, is useful.
- Heart disease prevention only starts with awareness!!

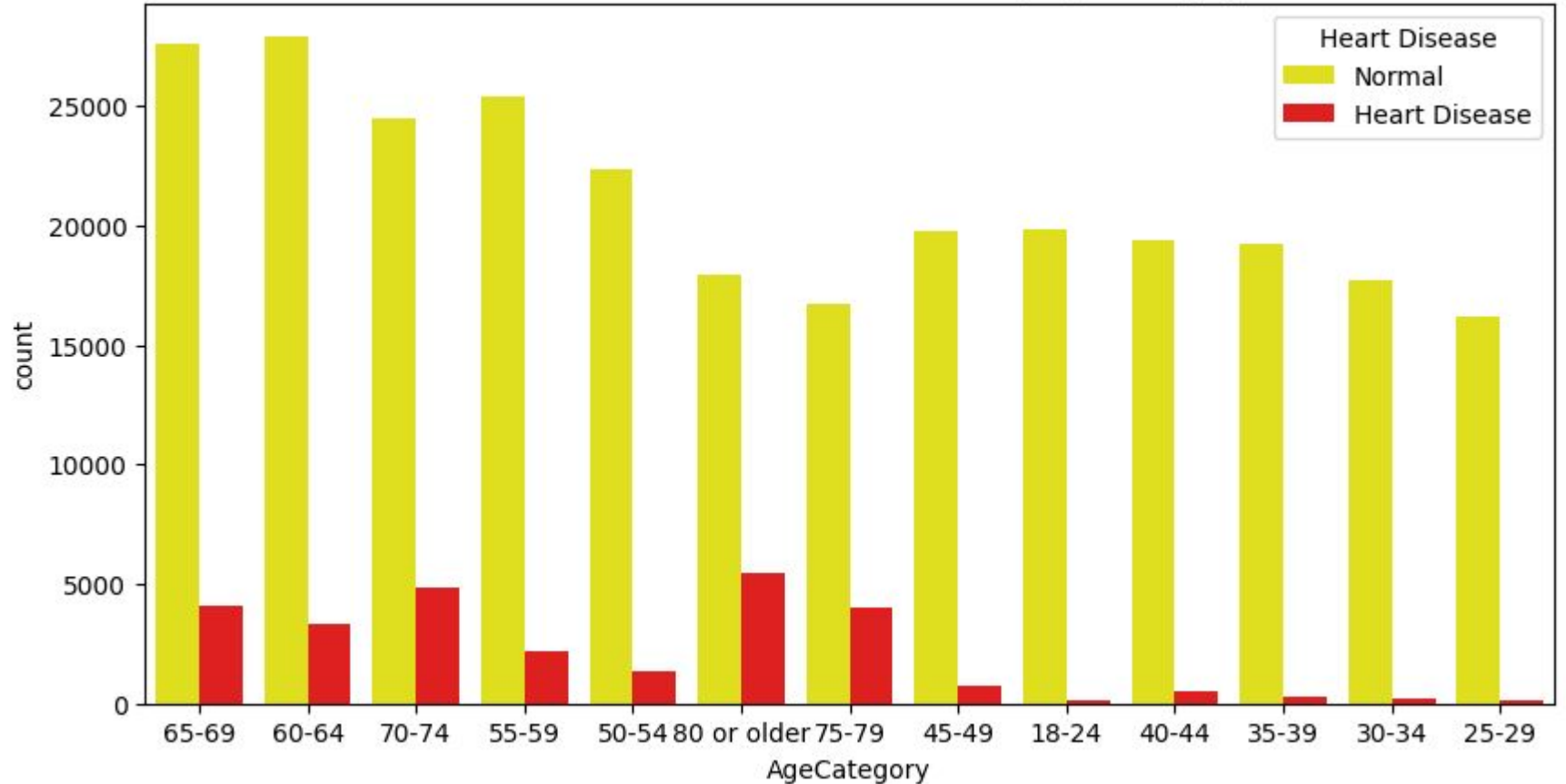


Variables

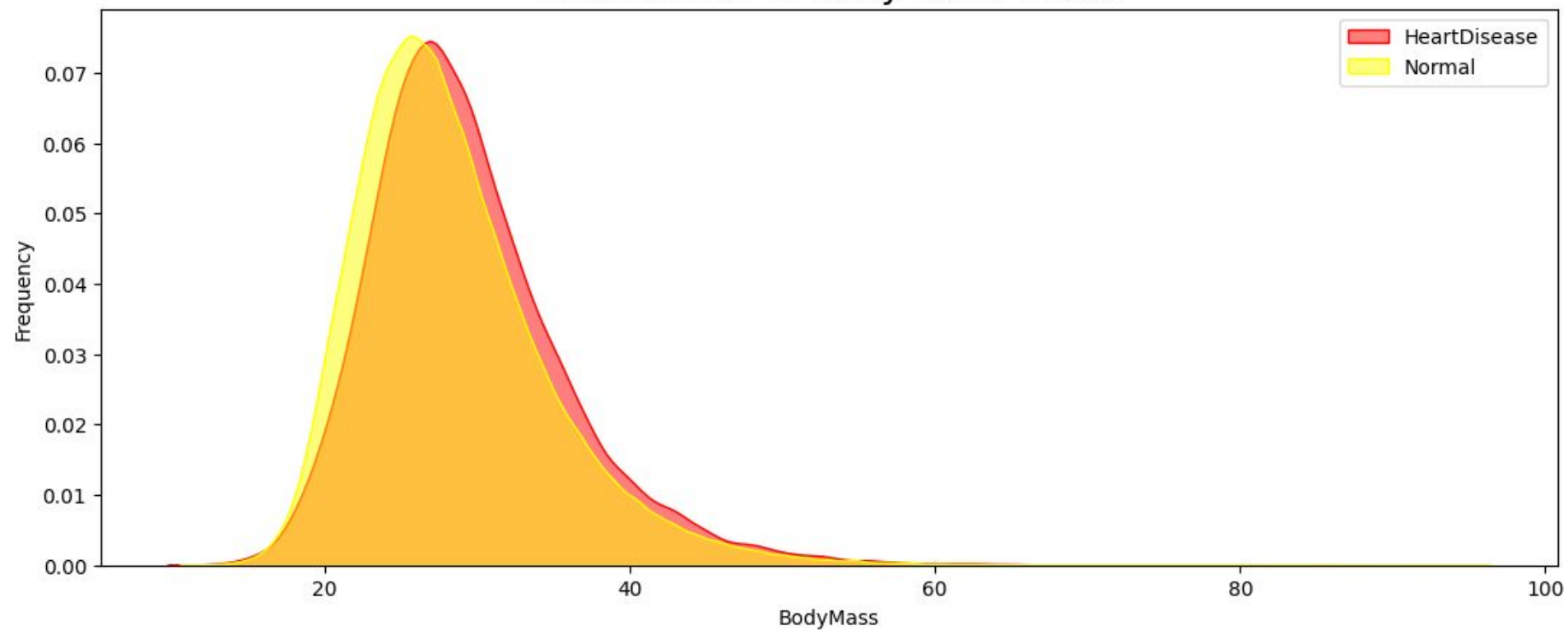
- Heart Disease
- BMI
- Smoking
- Alcohol Drinking
- Stroke
- Physical Health
- Mental Health
- Difficulty Walking
- Sex
- Age Category
- Race
- Diabetic
- Physical Activity
- General Health
- Sleep Time
- Asthma
- Kidney Disease



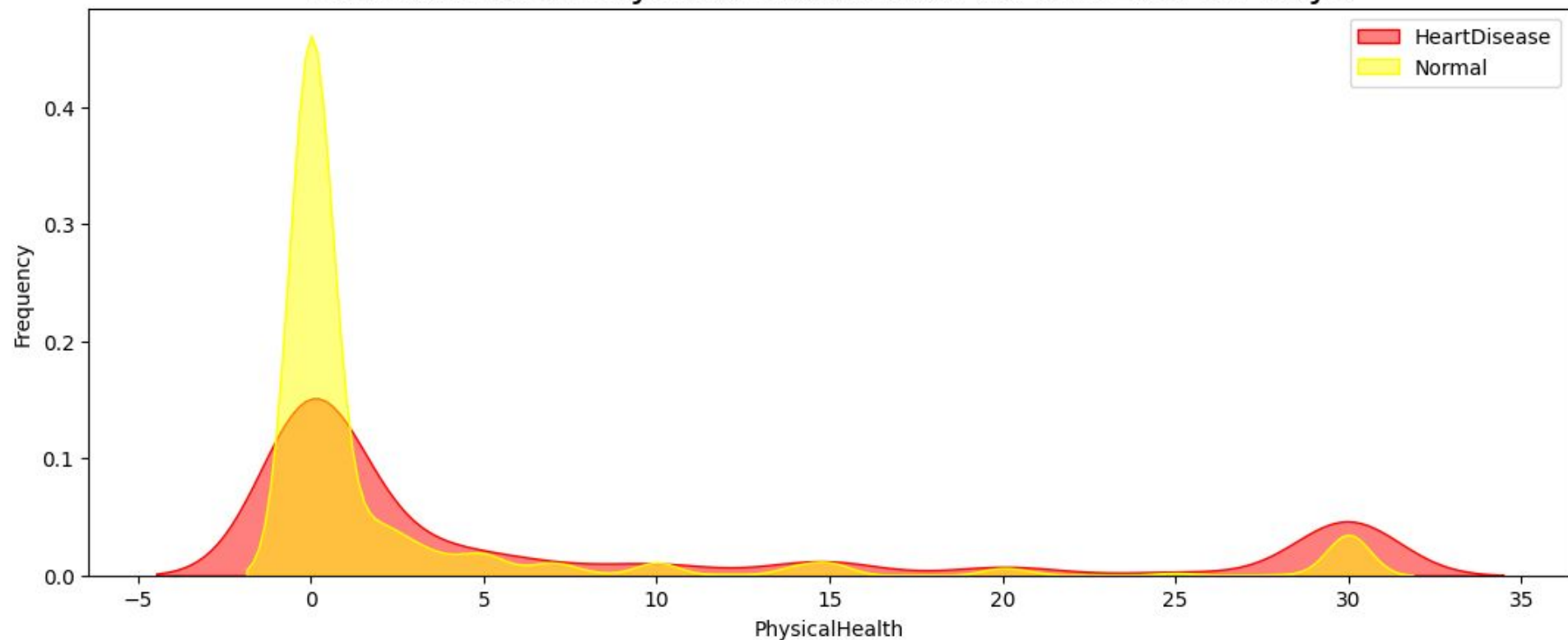
Distribution of Heart Disease Cases by AgeCategory



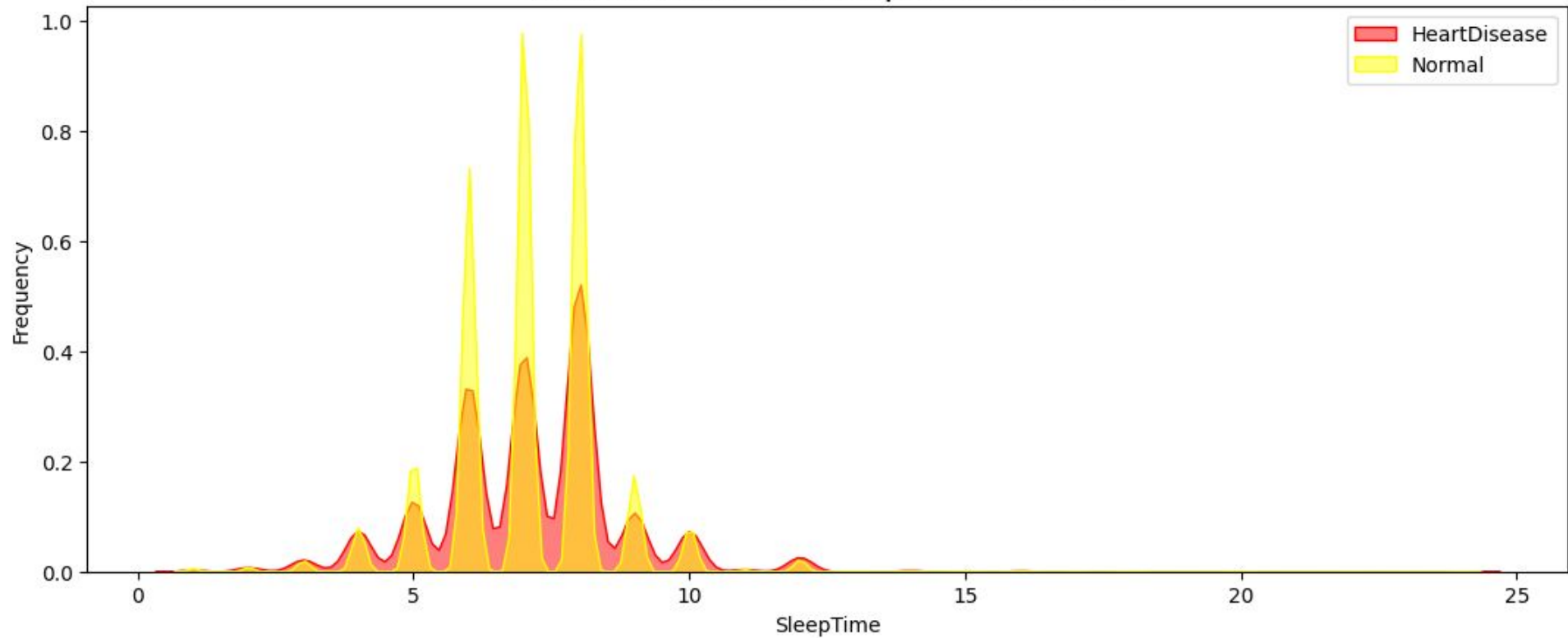
Distribution of Body Mass Index



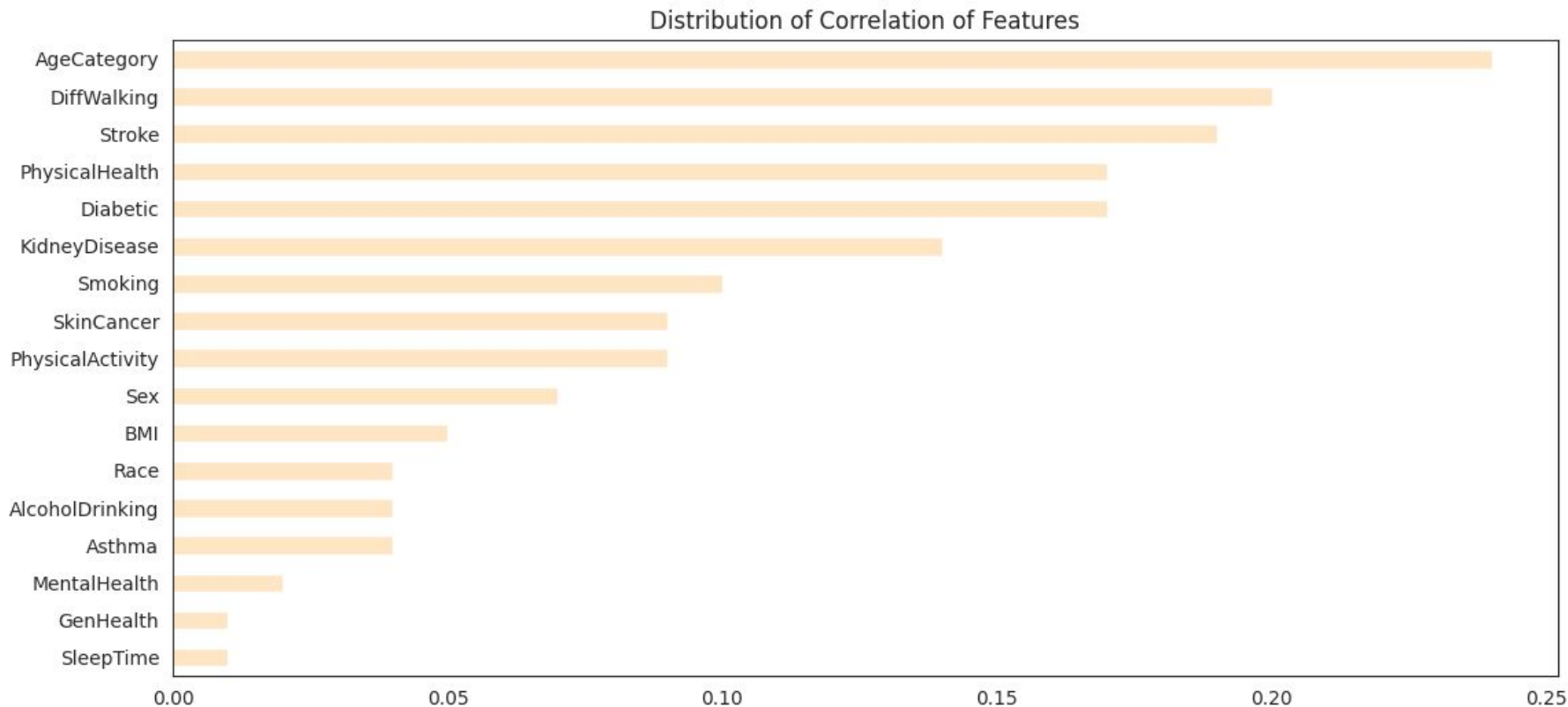
Distribution of PhysicalHealth State for the Last 30 Days



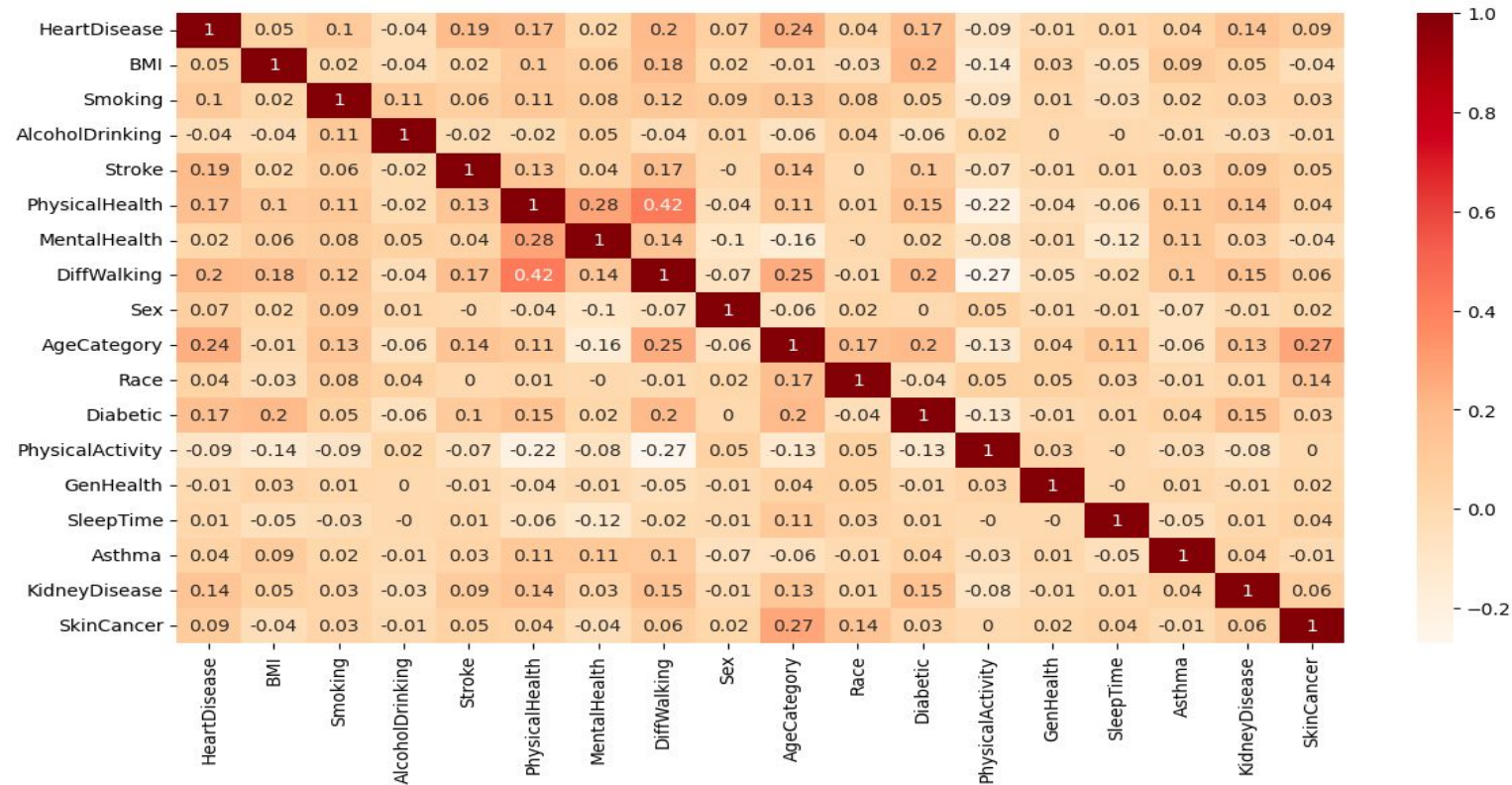
Distribution Of SleepTime Values



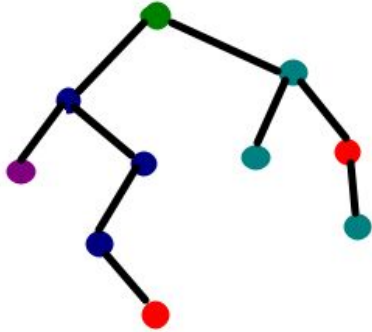
Correlation



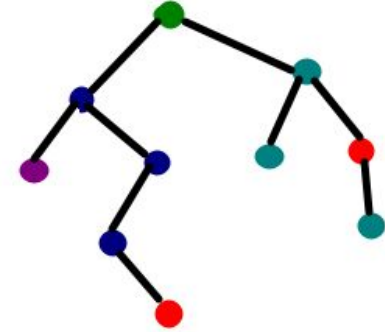
Correlation Between Variables



Machine Learning Method Chosen



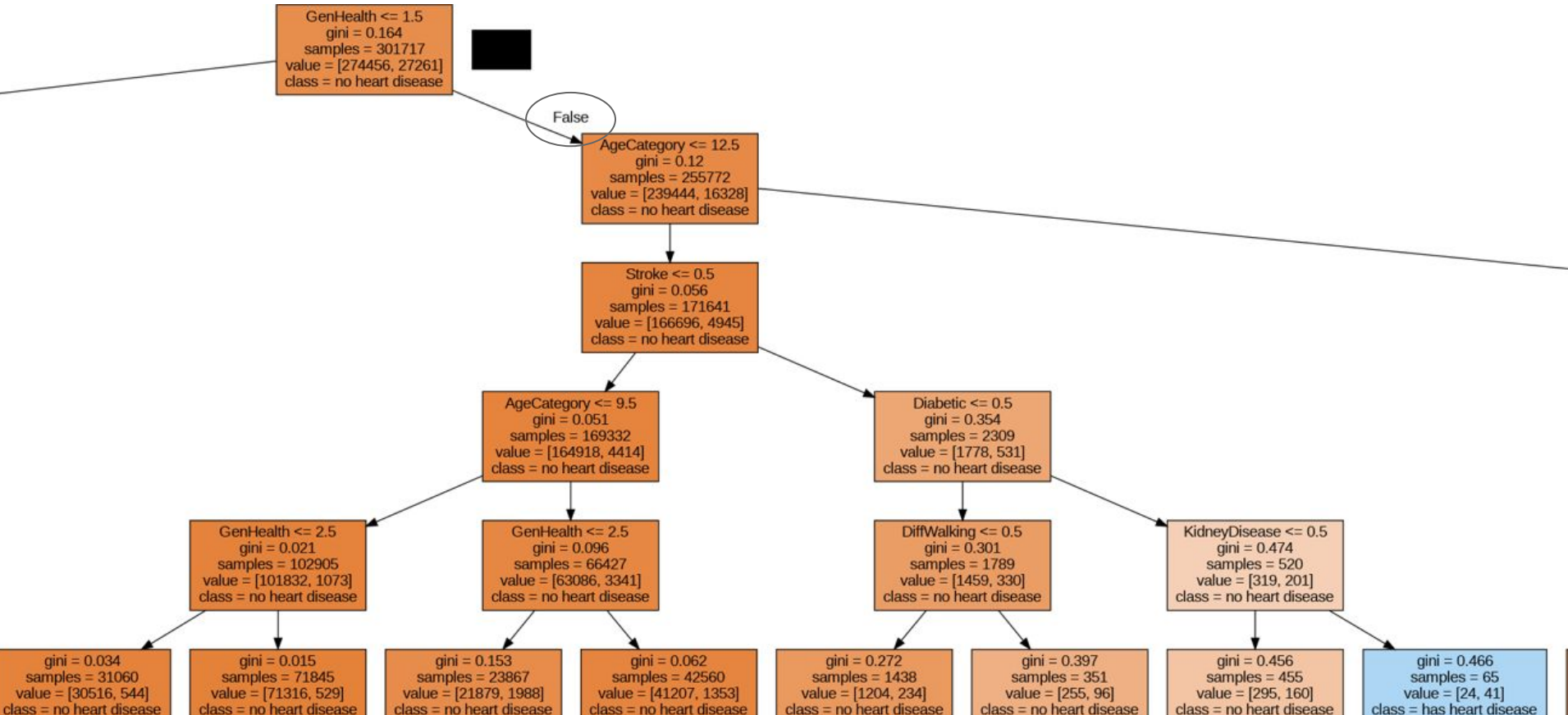
Decision Tree was 92% accurate



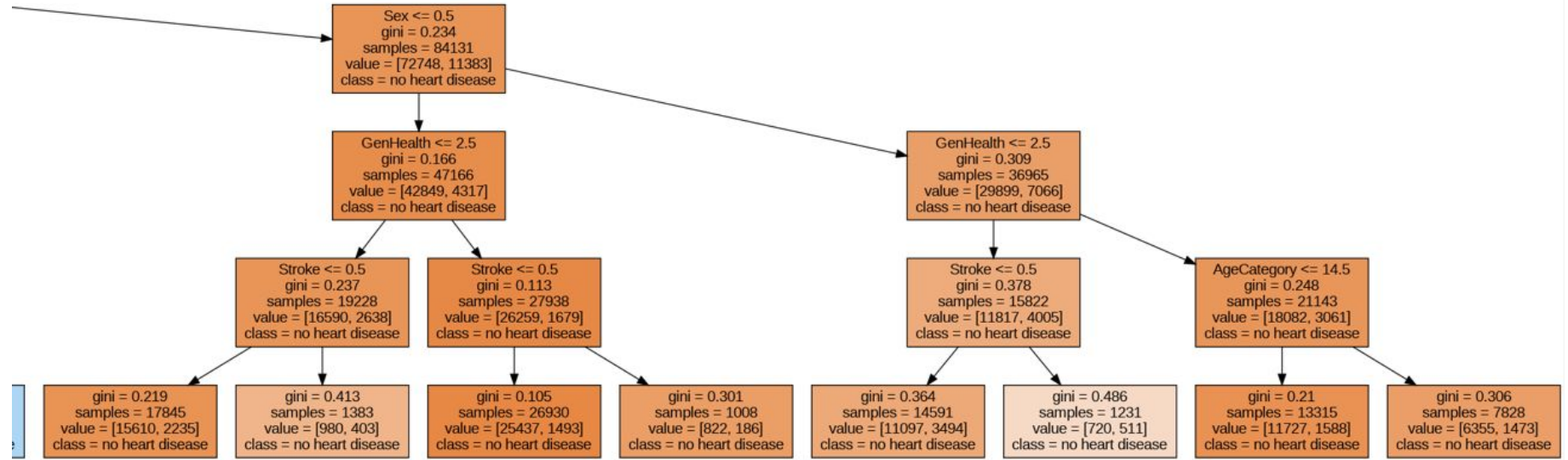
Limitations

- Missing BMI, Mental Health, Sleep Time, Physical Health
- Pediatrics is not listed
- Gen Health is a factor that is based off of patient opinion

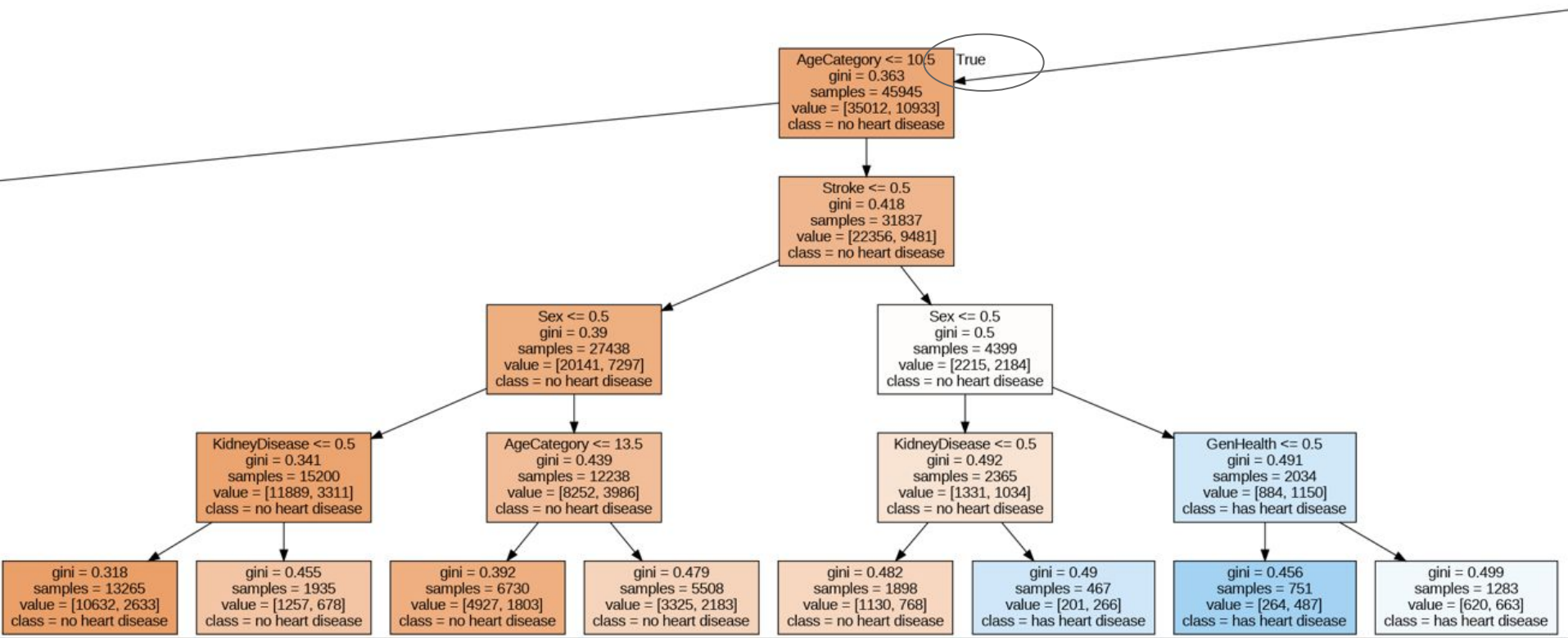
Our Decision tree (Right side)



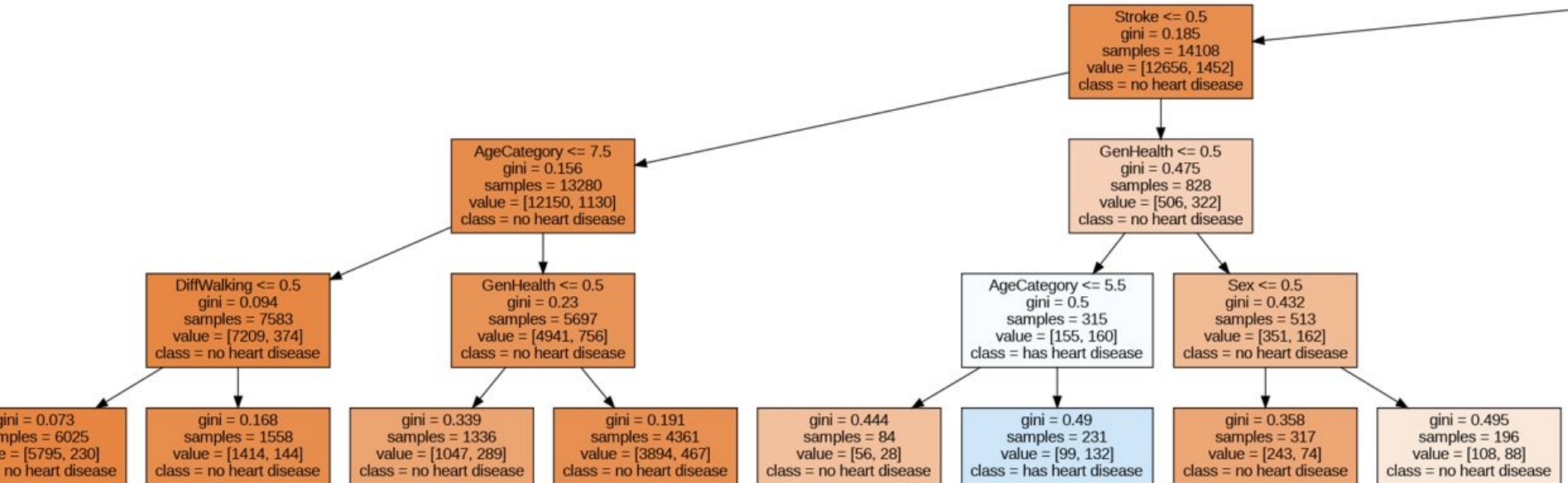
Our Decision tree (Right side)



Our Decision tree (Left side)



Our Decision tree (Left side)



Key Variables:

Along with other variables, kidney disease & stroke is the closest indicator to having heart disease.

Who our model helps CVD awareness in Hospitals

- **Heart Doctors/Surgeon** can use it for better patient care and to view findings that can help with case studies
- **CNA's and RN's** a better analysis on patient care with these findings
- **Dietitians** can limit patient diet that could be related to CVD

