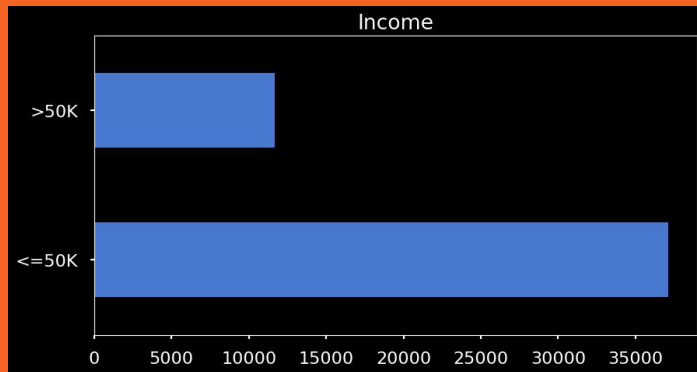

Prediction of Adult Income



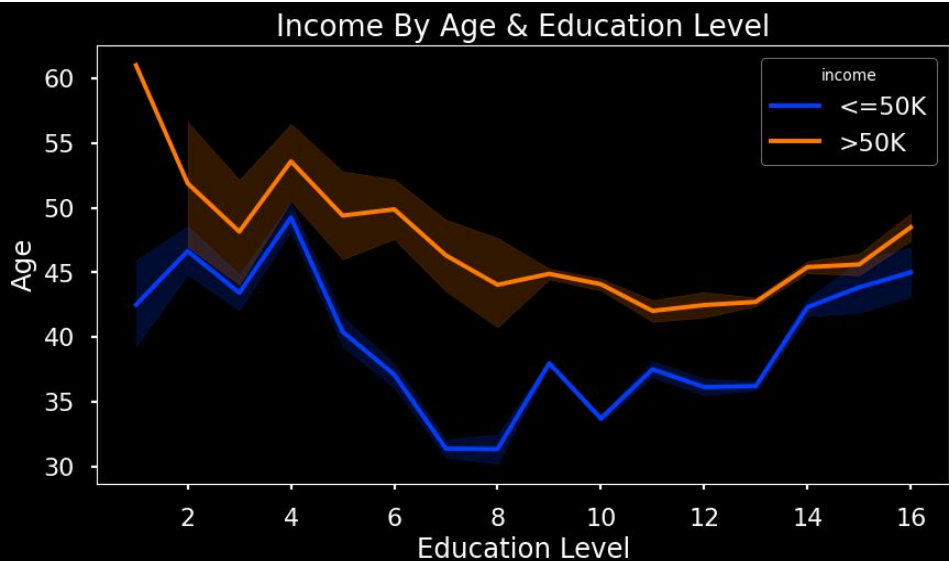
Using machine learning in order to predict yearly income.

About This Data Set

This data set includes key information in potentially predicting a person's income level. Some of the more vital data given includes the following.

- Capital gains
- Age
- Hours worked per week
- Level of education
- Marital status
- Gender
- Race

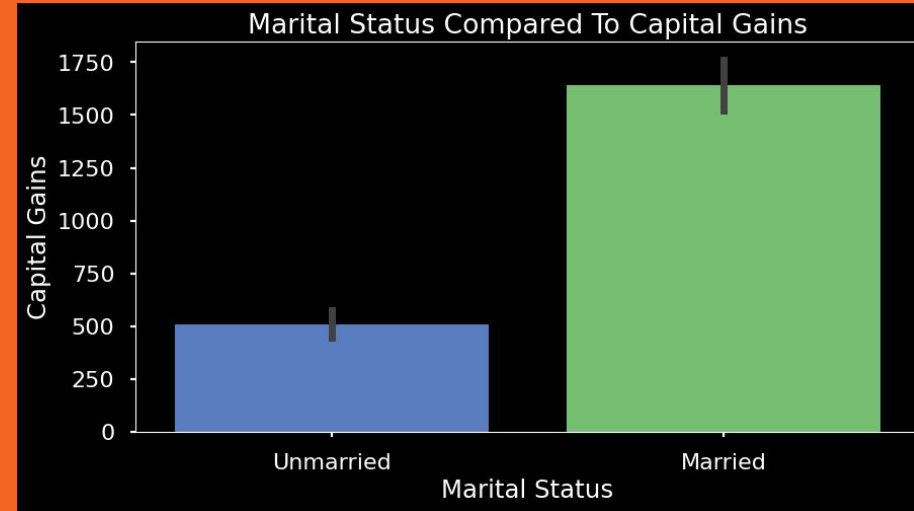
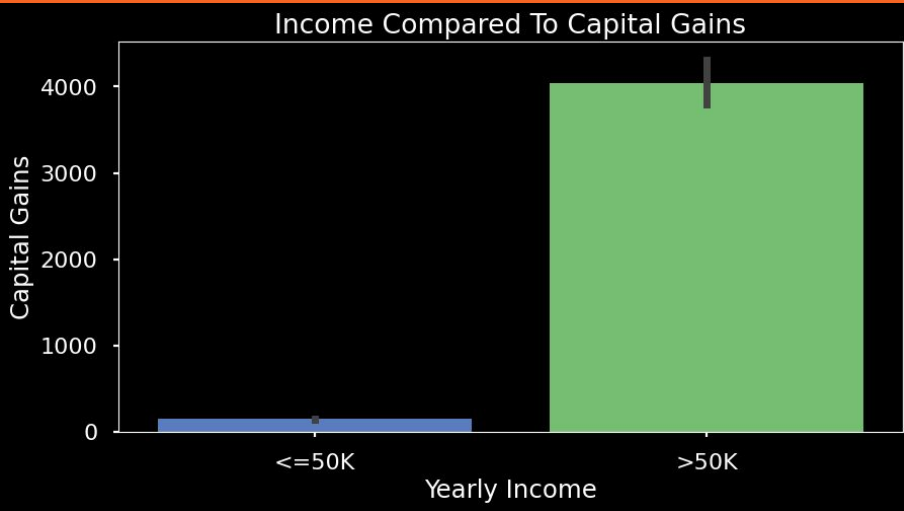
Purpose of Data Analysis



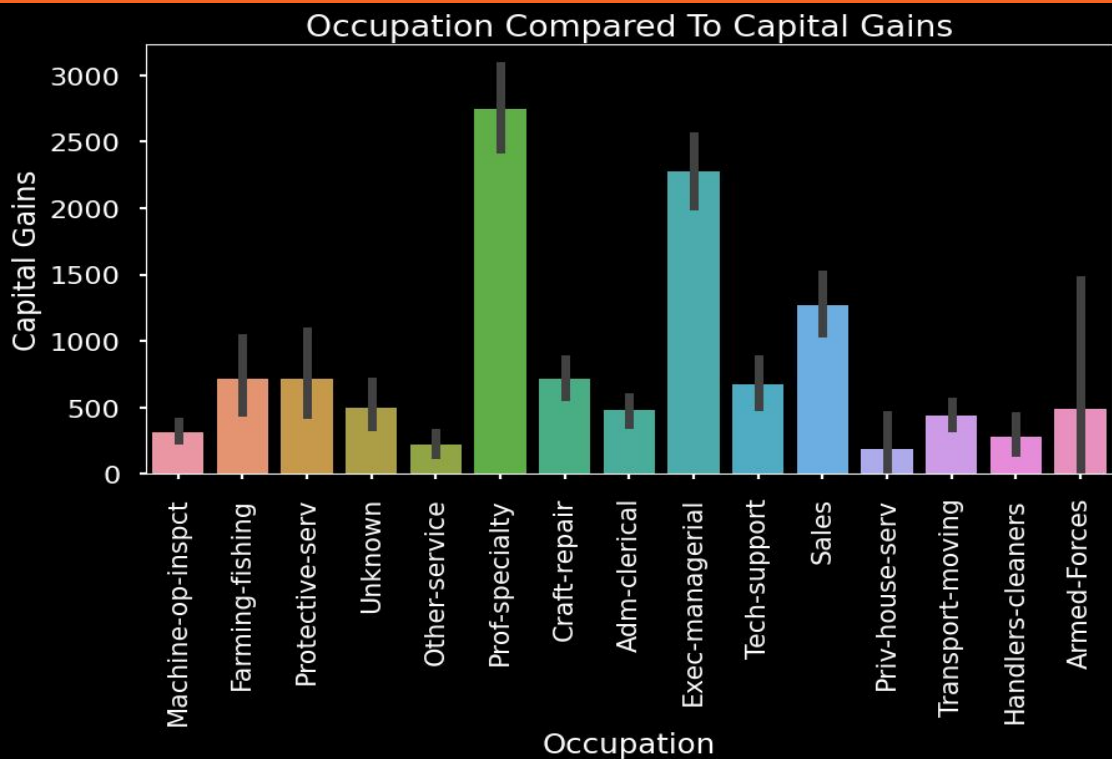
The goal of this data analysis is to predict adult income based on the features listed prior.

Capital Gains & Income

Capital gains, income, and marriage have significant correlations.



Occupation



Highest earners:

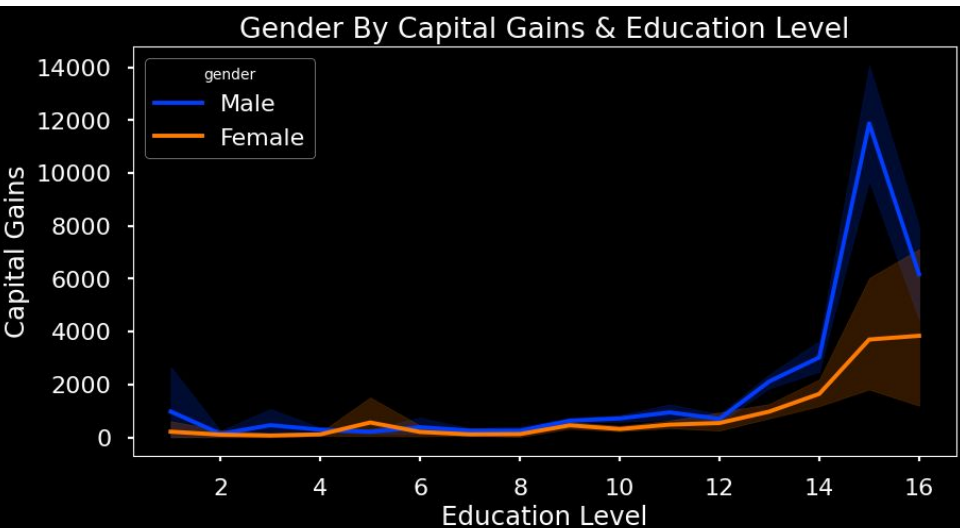
- Professional specialties
- Executive management

Lowest earners:

- Transportation
- Sanitation

Capital Gains By Gender

Capital gains remains similar between men and women who have below a high school education.



Men's capital gains begin to exceed those of women after both have higher than a high school education.

Machine Learning Model

	precision	recall	f1-score	support
<=50K	0.92	0.87	0.89	9700
>50K	0.59	0.69	0.63	2498
accuracy			0.84	12198
macro avg	0.75	0.78	0.76	12198
weighted avg	0.85	0.84	0.84	12198

Gradient Boosting Model

Strengths

- Accurate prediction within 16%
- High precision when predicting low income

Weaknesses

- Mid-range amounts of false negatives and false positives
 - Lower precision predicting high income earners
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