Project 3

Group 3

4/4/2021

Group Leader: Brianna Johnson

Member Names: Marco Sousa, Ben Pfeffer, Nikita Seleznev, Brianna Johnson

Introduction to the US Census Binary Income Dataset

Credited to Ronny Kohavi and Barry Becker, The 1994 United States Census Bureau data has several features describing an individual to predict in a binary manner whether that individual will earn more or less than \$50,000 per year.

[1] 30162

[1] 15060

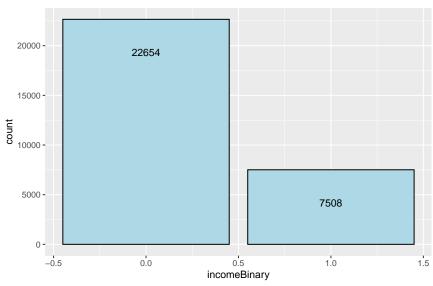
The training data is displayed as follows.

| ## | | age | work | class | fnlwgt | edu | cation | educati | ion.num | ma | arital.status |
|----|---|------|--------------|-------|----------|------|---------------|----------------|---------|--------|---------------|
| ## | 1 | 39 | Stat | e-gov | 77516 | Bacl | helors | | 13 | 1 | Never-married |
| ## | 2 | 50 | Self-emp-no | t-inc | 83311 | Bacl | helors | | 13 | Marrie | ed-civ-spouse |
| ## | 3 | 38 | Pr | ivate | 215646 | H | S-grad | | 9 | | Divorced |
| ## | 4 | 53 | Pr | ivate | 234721 | | 11th | | 7 | Marrie | ed-civ-spouse |
| ## | 5 | 28 | Pr | ivate | 338409 | Bacl | helors | | 13 | Marrie | ed-civ-spouse |
| ## | 6 | 37 | Pr | ivate | 284582 | Ma | asters | | 14 | Marrie | ed-civ-spouse |
| ## | | | occupati | on r | elations | ship | race | sex | capita | l.gain | capital.loss |
| ## | 1 | | Adm-cleric | al No | t-in-far | nily | White | Male | | 2174 | 0 |
| ## | 2 | Ez | kec-manageri | al | Husl | band | White | Male | | 0 | 0 |
| ## | 3 | Hand | dlers-cleane | rs No | t-in-far | nily | White | Male | | 0 | 0 |
| ## | 4 | Hand | dlers-cleane | rs | Husl | band | Black | Male | | 0 | 0 |
| ## | 5 | I | Prof-special | ty | I | Wife | ${\tt Black}$ | ${\tt Female}$ | | 0 | 0 |
| ## | 6 | Ez | kec-manageri | al | 1 | Wife | White | ${\tt Female}$ | | 0 | 0 |
| ## | | hour | rs.per.week | nativ | e.count | ry i | ncome : | incomeBi | inary | | |
| ## | 1 | | 40 | Unit | ed-State | es · | <=50K | | 0 | | |
| ## | 2 | | 13 | Unit | ed-State | es · | <=50K | | 0 | | |
| ## | 3 | | 40 | Unit | ed-State | es · | <=50K | | 0 | | |
| ## | 4 | | 40 | Unit | ed-State | es · | <=50K | | 0 | | |
| ## | 5 | | 40 | | Cul | ba · | <=50K | | 0 | | |
| ## | 6 | | 40 | Unit | ed-State | es · | <=50K | | 0 | | |

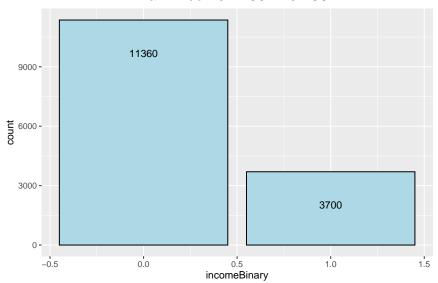
Exploratory Data Analysis

Binary Income Count

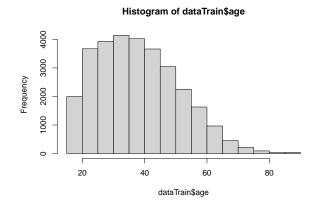
Train Income <=50K vs >50K

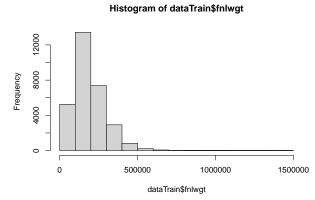


Train Income <=50K vs >50K

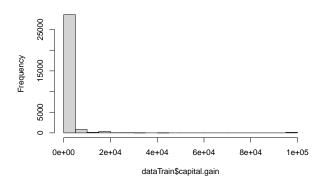


Quick Histograms

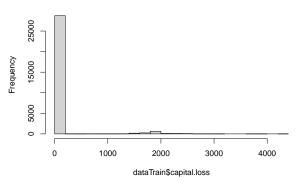




Histogram of dataTrain\$capital.gain







EDA Next

Logistic Regression

Naive Bayes