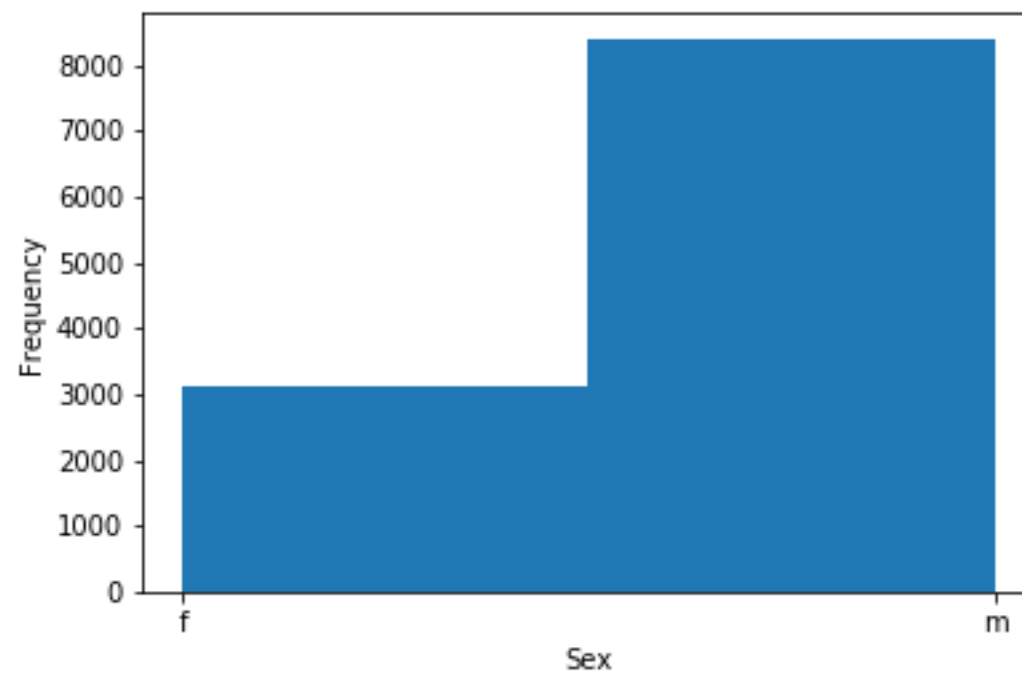
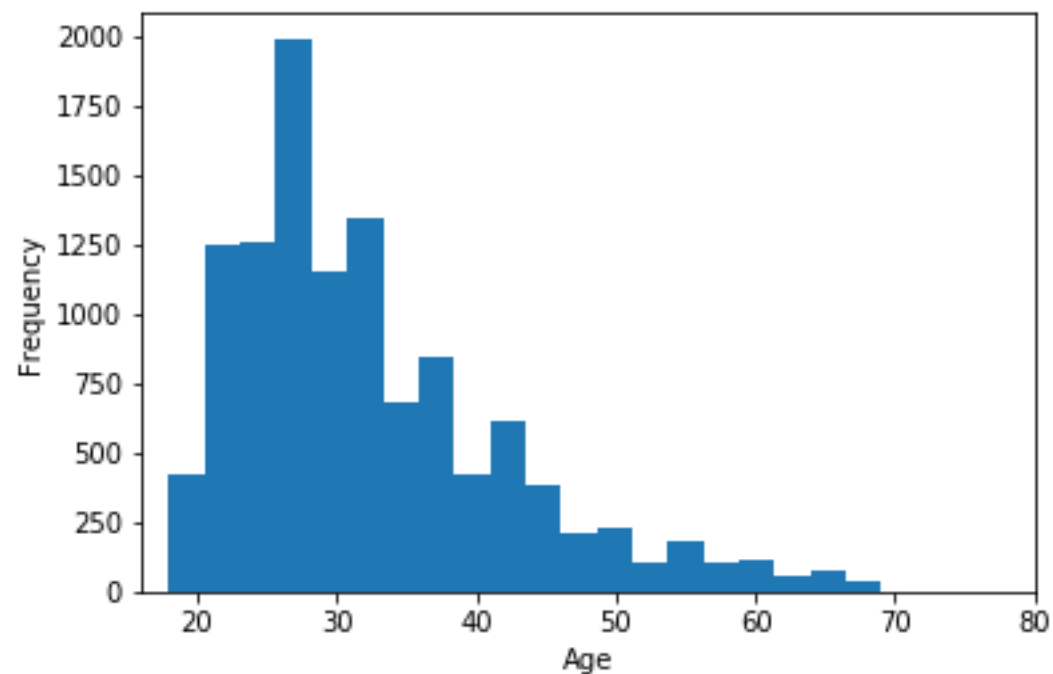


Machine Learning Fundamentals

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Graphs of Data



Statement/Questions

- Predict orientation based on income level?

Does orientation affect how much a person is paid?

- Guess pet “status” based on income and orientation?

Does income and sexual orientation affect whether a person own/likes/dislikes pets/animals?

Added Data Columns

- Added a column for sex mapping using the following:
 - "m": 0, "f": 1
- Added a column for income mapping with less categories using the following:
 - 20-40k, 50-99k, 100-499k, 500+k
- Added a column for pet mapping with less categories using the following:
 - #0: dislikes pets, #1: likes pets does not have, #2: Like one not the other, #3: Owns one but dislikes other, #4: Owns one likes other, #5: owns 1, #6: has both
- Added a column for orientation mapping using the following:
 - "straight": 0, "gay": 1, "bisexual": 2

MLR/KNR Comparison

Predict orientation based on income level?

Multiple Linear Regression

Fit Time: 0.0s

Accuracy: 0.014995

K-Neighbors Regressor

Fit Time: 0.578492s

Accuracy: -0.234118

K-NB/SVM Comparison

Guess pet "status based on income and orientation?

K-Nearest Neighbors

Fit Time: 0.023939s

Accuracy: 0.324061

Precision: 0.24

Recall: 0.32

F1-Score: 0.27

Support Vector Machines

Fit Time: 2.279284s

Accuracy: 0.412378

Precision: 0.17

Recall: 0.41

F1-Score: 0.24

Conclusion

Question: Predict orientation based on income level?

Question: Guess pet “status based on income and orientation?

Based on my test and results I was not able to predict the outcome of either question. Maybe I need to add more information to help with decision making or maybe there is no correlation between orientation and income and in the second case orientation, income and pet status.