Boston Housing Market

Problem: Predict the median value house price of the owner occupied houses.

Client: I am a data scientist working on a contract project for a Boston real estate company called Elevated Reality. The value of this project will enable management to set selling targets for future time periods and give real estate agents a good perspective on price negotiations. Both decisions will generate more revenue that would otherwise be missing from information provided from this project.

Data: The data I'm using was collected by the US Census Service from 1978 containing the 14 variables below.

1. CRIM - per capita crime rate by town
2. ZN - proportion of residential land zoned for lots over 25,000 sq.ft.
3. INDUS - proportion of non-retail business acres per town.
4. CHAS - Charles River dummy variable (1 if tract bounds river; 0 otherwise)
5. NOX - nitric oxides concentration (parts per 10 million)
6. RM - average number of rooms per dwelling
7. AGE - proportion of owner-occupied units built prior to 1940
8. DIS - weighted distances to five Boston employment centres
9. RAD - index of accessibility to radial highways
10. TAX - full-value property-tax rate per $10,000
11. PTRATIO - pupil-teacher ratio by town
12. B - 1000(Bk - 0.63)^2 where Bk is the proportion of blacks by town
13. LSTAT - % lower status of the population
14. MEDV - Median value of owner-occupied homes in $1000's

The link to the data can be found at http://lib.stat.cmu.edu/datasets/boston

Strategy: The target variable in this dataset for 506 housing locations. A regression analysis will be carried out among the variables from finding direct correlations between them. One or more models will be constructed and evaluated. The best model will be used to build an algorithm(s) to predict the value of variable 14 for future years that have passed.

Deliverables: A report will be created in Jupyter Notebook along with all the coding in representation of this project and can be found on my github page at https://github.com/mwallace123/Boston-Housing-Market-Project.