Session 11 project

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1 Decision tree

Split the houses in two sets, one training set and one test set. Then the price labels were either set to 0 or 1 depending on if its price value was below or above the mean respectively.

1.1 Classification Results

```
Tree Depth: None, Training Accuracy: 1.0000, Test Accuracy: 0.8365
Tree Depth: 3, Training Accuracy: 0.7938, Test Accuracy: 0.7897
Tree Depth: 5, Training Accuracy: 0.8302, Test Accuracy: 0.8227
Tree Depth: 10, Training Accuracy: 0.9095, Test Accuracy: 0.8442
```

1.2 Regression Results

```
Tree Depth: None, Training MSE: 0.0000, Test MSE: 0.4952
Tree Depth: 3, Training MSE: 0.6177, Test MSE: 0.6424
Tree Depth: 5, Training MSE: 0.4843, Test MSE: 0.5245
Tree Depth: 10, Training MSE: 0.2209, Test MSE: 0.4155
```

2 Environment reproduction

To reproduce the environment used to build the excersise, follow these instructions:

```
python3 -m venv env
source env/bin/acivate
pip3 install numpy scikit matplotlib
```

After the above steps the program can be executed by typing

```
python3 ‘ProgramName.py’
```