1. Hyperparameters for leaves problem

Decision Tree:

Random Forest:

* Random\_state = 0
* Max\_depth = 5
* Max\_features = 5
* Criterion=entropy

Validation dataset: 0.7205882352941176

Test dataset: 0.7014925373134329

* Random\_state = 0
* Max\_depth = None
* Max\_features = 3
* Criterion=entropy

Validation dataset: 0.7352941176470589

Test dataset: 0.6417910447761194

* Random\_state = 0
* Max\_depth = 15
* Max\_features = 5
* Criterion=entropy

Validation dataset: 0. 7794117647058824

Test dataset: 0. 7164179104477612

Logistic Regression:

SVM:

* C = 1000.0
* Kernel = rbf
* Gamma = auto

Validation dataset = 0.7647058823529411

Test dataset = 0.6417910447761194

* C = 1000.0
* Kernel = linear
* Gamma = linear

Validation dataset = 0.75

Test dataset = 0.6417910447761194

* C = 100.0
* Kernel = rbf
* Gamma = auto

Validation dataset = 0.6323529411764706

Test dataset = 0.5373134328358209

1. Hyperparameters for mpg problem

SGD Regressor:

Ridge Regression: