

### Exercise 1:

Line 50: Compare models with contingency tables (1)

```
Model 1 Contingency Table
> print(table.1)
      actual
predicted young adult old
young      288   108  34
adult      107   415 207
old         12    37  45
```

Line 53: Compare model accuracy (1)

```
Model 1 Accuracy = 0.597
```

Line 63: Compare models with contingency tables (2)

```
Model 2 Contingency Table
> print(table.2)
      actual
predicted young adult old
young      302   105  25
adult      103   414 144
old         2    41 117
```

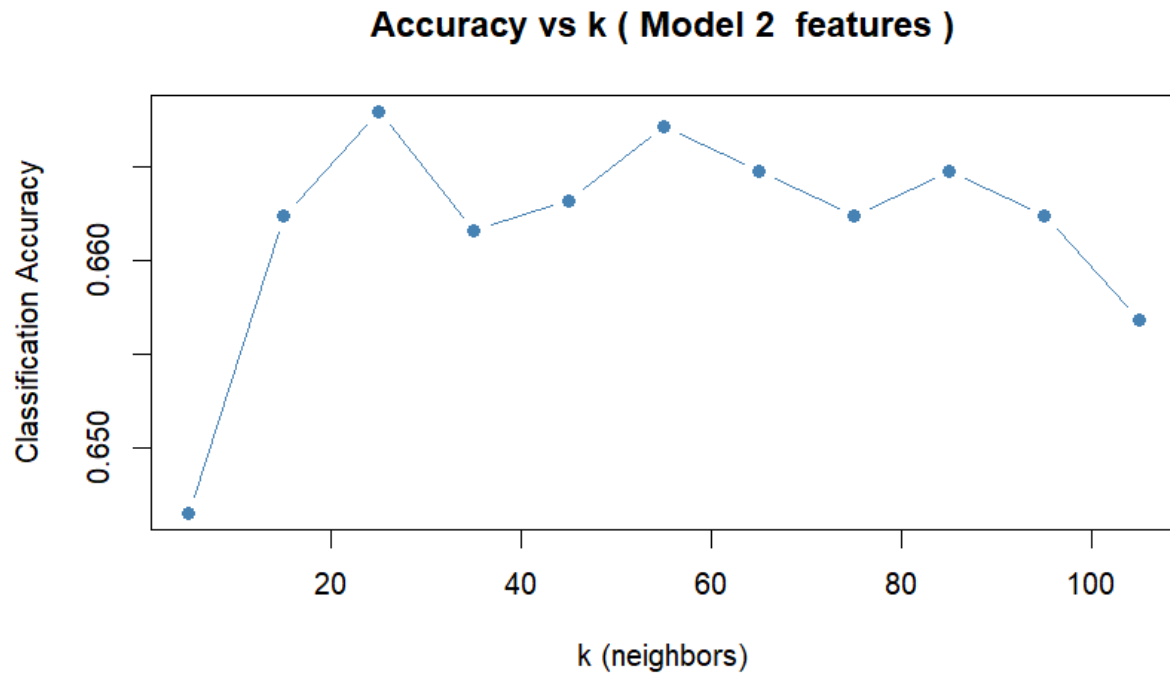
Line 66: Compare model accuracy (2)

```
Model 2 Accuracy = 0.6648
```

Line 79: Determine that the better performing model is Model 2 with accuracy of 66.5%

```
Better performing model = Model 2 with accuracy = 0.6648
```

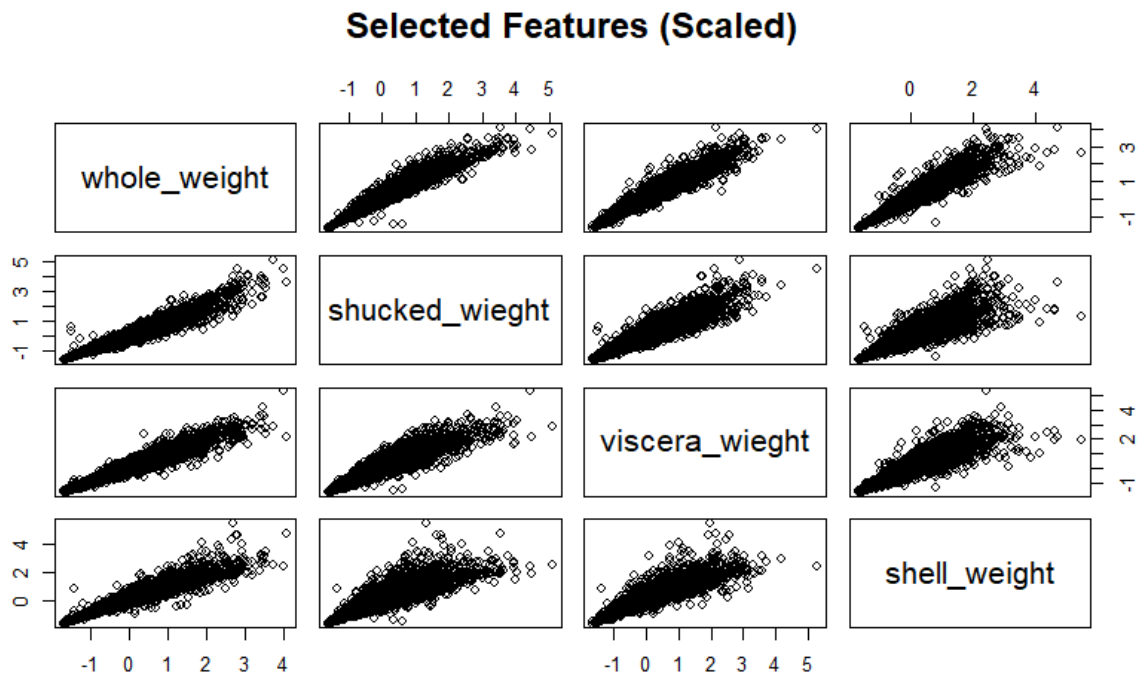
Line 97-99: Create a plot of accuracy vs k value to determine the optimal value for k for each model



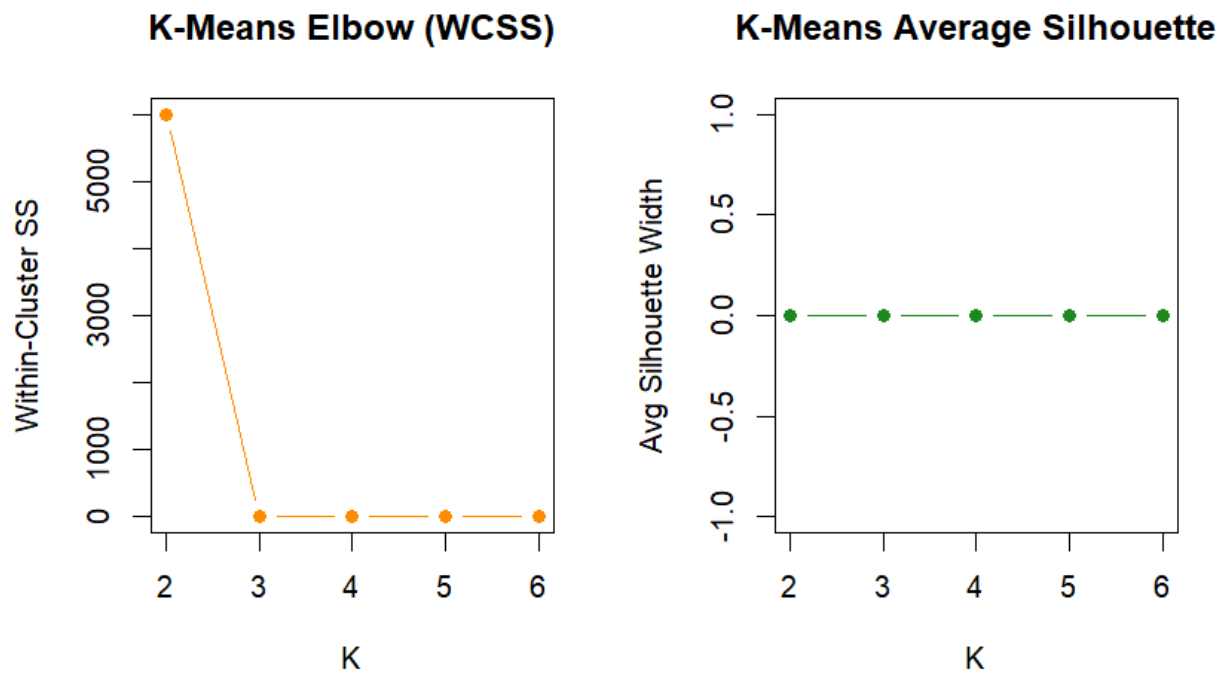
Line 102: Determined that the optimal k value is 25 with an accuracy of 66.8% via the previous plot.

Optimal k = 25 with accuracy = 0.668

Line 117:



Line 131-136: K means and silhouette models



Line 139: Determine best K value for K means models (2) from the previous plot.

Best K for K-Means = 2