**Name:** Sanket Prabhu

**Net ID**: srp140430

**Execution Information:**

Extract prabhu\_srp140430.

From the command prompt navigate to **/prabhu\_srp140430/MachineLearningHW2** and then run the following commands

*javac hw2/ml/\*.java*

And then run the following command to execute:

*java hw2.ml.srp140430 1000 8 training\_set.csv validation\_set.csv test\_set.csv no*

Where the numeric digits are L and K.

**To change the data set to test the program on:**

Copy the files to **/prabhu\_srp140430/MachineLearningHW2** folder and then pass the name of the files as parameter to above execution command.

**Test Result:**

**Information Gain Heuristic:**

**Data\_set1:**

Decision Tree Accuracy based on Training data: 75.94999999999

|  |  |  |  |
| --- | --- | --- | --- |
| L | K | Accuracy without Pruning | Accuracy after Pruning |
| 253 | 6 | 75.949 | 76.4 |
| 6761 | 9 | 75.949 | 76.5 |
| 4003 | 10 | 75.949 | 76.1 |
| 2867 | 10 | 75.949 | 76.1 |
| 955 | 1 | 75.949 | 76.4 |
| 1235 | 7 | 75.949 | 75.8 |
| 6481 | 6 | 75.949 | 76.4 |
| 7716 | 3 | 75.949 | 76.449 |
| 9358 | 7 | 75.949 | 76.449 |
| 2 | 3 | 75.949 | 75.949 |

**Data\_set2:**

Decision Tree Accuracy based on Training data: 72.83333333333

|  |  |  |  |
| --- | --- | --- | --- |
| L | K | Accuracy without Pruning | Accuracy after Pruning |
| 6754 | 12 | 72.83 | 72.5 |
| 615 | 27 | 72.83 | 72.1667 |
| 1050 | 52 | 72.83 | 71.5 |
| 714 | 89 | 72.83 | 72.5 |
| 2965 | 17 | 72.83 | 72.5 |
| 1228 | 64 | 72.83 | 73.0 |
| 1357 | 84 | 72.83 | 73.0 |
| 5063 | 83 | 72.83 | 72.1667 |
| 8548 | 44 | 72.83 | 72.83 |
| 192 | 62 | 72.83 | 72.83 |