**REPORT**

**Data set 1:**

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 75.95%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 76.05%

**Data set 2:**

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 73.05%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 73.55%

**Data Set 1 :**

java decisionTree.java 100 10 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 75.05%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 74.5%

java decisionTree.java 100 5 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 74.5%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 74.95%

java decisionTree.java 200 10 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 75.85%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 75.75%

java decisionTree.java 100 15 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 75.53%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 75.76%

java decisionTree.java 100 14 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 75.60%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 75.45%

java decisionTree.java 200 12 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 75.44%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 75.95%

java decisionTree.java 80 19 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 75.09%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 75.35%

java decisionTree.java 150 20 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 76.01%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 75.95%

java decisionTree.java 130 20 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 75.19%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 74.96%

java decisionTree.java 170 30 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 76.20%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 75.85%

**Data Set 2** :

java decisionTree.java 100 10 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 73.0%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 74.5%

java decisionTree.java 100 5 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 73.5%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 73.95%

java decisionTree.java 200 10 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 73.05%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 73.5%

java decisionTree.java 100 15 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 73.45%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 73.75%

java decisionTree.java 100 14 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 73.0%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 74.5%

java decisionTree.java 200 12 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 73.04%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 74.65%

java decisionTree.java 80 19 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 73.09%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 74.35%

java decisionTree.java 150 20 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 73.20%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 73.55%

java decisionTree.java 130 20 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

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Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 73.0%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 74.5%

java decisionTree.java 170 30 C:\eclipse\Tree\training\_set1.csv C:\eclipse\Tree\validation\_set1.csv C:\eclipse\Tree\test\_set1.csv no

Inducing Decision Trees

1. Information Gain Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 73.0%

2. Variance Impurity Heuristic

Decision Tree constructed using Training Set:C:\eclipse\Tree\training\_set.csv

Accuracy of pruned decision tree on Test Set: C:\eclipse\Tree\test\_set.csv: 74.5%