

## 1. Random Forest Classification

### Recall:

1. What is the percentage of correct classification of “Purchased” to the total input of “Purchased” in the test set? 0.85
2. What is the percentage of correct classification of “Not Purchased” to the total input of “Not Purchased” in the test set? 0.91

### Precision:

1. What is the percentage of classification of “Purchased” to sum of correctly classified as “Purchased” and wrongly classified as “Purchased” in the test set? 0.83
2. What is the percentage of classification of “Not Purchased” to sum of correctly classified as “Not purchased” and wrongly classified as “Not purchased” in the test set? 0.92

### Accuracy:

What is the overall performance of the model? 0.89

### F1 Measure:

1. What is the overall performance of “Purchased” class? 0.84
2. What is the overall performance of “Not Purchased” class? 0.92

### Macro Average:

**Precision:** What is the overall performance of precision(correctly and wrongly classified)? 0.88

**Recall:** What is the average performance of recall (correctly classified)? 0.88

### F1 Measure:

What is the overall performance of F1 Measure? 0.88

### Weighted Average:

**Precision:** what is the sum of product of proportion rate of each class("Purchased" and "Not Purchased")? 0.89

**Recall:** What is the sum of product of proportion rate of each class? 0.89

**F1-Measure:** What is the sum of product of proportion rate of each class? 0.89

## 2. Decision Tree Classification

**Recall:**

3. What is the percentage of correct classification of "Purchased" to the total input of "Purchased" in the test set? 0.93
4. What is the percentage of correct classification of "Not Purchased" to the total input of "Not Purchased" in the test set? 0.90

**Precision:**

3. What is the percentage of classification of "Purchased" to sum of correctly classified as "Purchased" and wrongly classified as "Purchased" in the test set? 0.83
4. What is the percentage of classification of "Not Purchased" to sum of correctly classified as "Not purchased" and wrongly classified as "Not purchased" in the test set? 0.96

**Accuracy:**

What is the overall performance of the model? 0.91

**F1 Measure:**

3. What is the overall performance of "Purchased" class? 0.87
4. What is the overall performance of "Not Purchased" class? 0.93

**Macro Average:**

**Precision:** What is the overall performance of precision(correctly and wrongly classified)? 0.89

**Recall:** What is the average performance of recall (correctly classified)? 0.91

**F1 Measure:**

What is the overall performance of F1 Measure? 0.90

**Weighted Average:**

**Precision:** what is the sum of product of proportion rate of each class("Purchased" and "Not Purchased")? 0.91

**Recall:** What is the sum of product of proportion rate of each class? 0.91

**F1-Measure:** What is the sum of product of proportion rate of each class? 0.91

### 3. SVM Classification

**Recall:**

5. What is the percentage of correct classification of "Purchased" to the total input of "Purchased" in the test set? 0.44
6. What is the percentage of correct classification of "Not Purchased" to the total input of "Not Purchased" in the test set? 0.97

**Precision:**

5. What is the percentage of classification of "Purchased" to sum of correctly classified as "Purchased" and wrongly classified as "Purchased" in the test set? 0.90
6. What is the percentage of classification of "Not Purchased" to sum of correctly classified as "Not purchased" and wrongly classified as "Not purchased" in the test set? 0.77

**Accuracy:**

What is the overall performance of the model? 0.79

**F1 Measure:**

5. What is the overall performance of "Purchased" class? 0.59

6. What is the overall performance of “Not Purchased” class? 0.86

**Macro Average:**

**Precision:** What is the overall performance of precision (correctly and wrongly classified)? 0.83

**Recall:** What is the average performance of recall (correctly classified)? 0.71

**F1 Measure:**

What is the overall performance of F1 Measure? 0.79

**Weighted Average:**

**Precision:** what is the sum of product of proportion rate of each class (“Purchased” and “Not Purchased”)? 0.81

**Recall:** What is the sum of product of proportion rate of each class? 0.79

**F1-Measure:** What is the sum of product of proportion rate of each class? 0.77

Based on the evaluation metrics, Decision Tree Classifier model is the best model.