

# CLASSIFICATION REPORT

## RANDOM FOREST:

1. What is the overall performance for random forest model?

Accuracy – 0.90

2. What is the correct classification of not purchased?

Recall – 0.92

3. What is the correct classification of purchased?

Recall – 0.88

4. What is the correct & wrong classification of not purchased?

Precision – 0.93

5. What is the correct & wrong classification of purchased?

Precision – 0.86

6. What is the overall performance not purchased classification?

f1\_score – 0.92

7. What is the overall performance purchased classification?

f1\_score – 0.87

8. What is the average performance of precision?

Macro average – 0.89

9. What is the average performance of recall?

Macro average – 0.90

10. What is the average performance of f1\_score?

Macro average – 0.90

11. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.90

12. What is the sum of product of proportion rate (weight) of recall class?

Weighted average – 0.90

13. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.90

### **DECISION TREE:**

1. What is the overall performance for random forest model?

Accuracy – 0.87

2. What is the correct classification of not purchased?

Recall – 0.89

3. What is the correct classification of purchased?

Recall – 0.84

4. What is the correct & wrong classification of not purchased?

Precision – 0.90

5. What is the correct & wrong classification of purchased?

Precision – 0.82

6. What is the overall performance not purchased classification?

f1\_score – 0.90

7. What is the overall performance purchased classification?

f1\_score – 0.83

8. What is the average performance of precision?

Macro average – 0.86

9. What is the average performance of recall?

Macro average – 0.87

10. What is the average performance of f1\_score?

Macro average – 0.86

11. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.87

12. What is the sum of product of proportion rate (weight) of recall class?

Weighted average – 0.87

13. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.87

## **SVM:**

1. What is the overall performance for random forest model?

Accuracy – 0.78

2. What is the correct classification of not purchased?

Recall – 0.96

3. What is the correct classification of purchased?

Recall – 0.47

4. What is the correct & wrong classification of not purchased?

Precision – 0.76

5. What is the correct & wrong classification of purchased?

Precision – 0.88

6. What is the overall performance not purchased classification?

f1\_score – 0.85

7. What is the overall performance purchased classification?

f1\_score – 0.61

8. What is the average performance of precision?

Macro average – 0.82

9. What is the average performance of recall?

Macro average – 0.72

10. What is the average performance of f1\_score?

Macro average – 0.73

11. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.81

12. What is the sum of product of proportion rate (weight) of recall class?

Weighted average – 0.78

13. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.76

## **LOGISTIC REGRESSION :**

1. What is the overall performance for random forest model?

Accuracy – 0.89

2. What is the correct classification of not purchased?

Recall – 0.93

3. What is the correct classification of purchased?

Recall – 0.82

4. What is the correct & wrong classification of not purchased?

Precision – 0.90

5. What is the correct & wrong classification of purchased?

Precision – 0.87

6. What is the overall performance not purchased classification?

f1\_score – 0.91

7. What is the overall performance purchased classification?

f1\_score – 0.84

8. What is the average performance of precision?

Macro average – 0.88

9. What is the average performance of recall?

Macro average – 0.87

10. What is the average performance of f1\_score?

Macro average – 0.88

11. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.89

12. What is the sum of product of proportion rate (weight) of recall class?

Weighted average – 0.89

13. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.89

## **KNN:**

1. What is the overall performance for random forest model?

Accuracy – 0.84

2. What is the correct classification of not purchased?

Recall – 0.93

3. What is the correct classification of purchased?

Recall – 0.67

4. What is the correct & wrong classification of not purchased?

Precision – 0.83

5. What is the correct & wrong classification of purchased?

Precision – 0.85

6. What is the overall performance not purchased classification?

f1\_score – 0.88

7. What is the overall performance purchased classification?

f1\_score – 0.75

8. What is the average performance of precision?

Macro average – 0.84

9. What is the average performance of recall?

Macro average – 0.80

10. What is the average performance of f1\_score?

Macro average – 0.81

11. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.84

12. What is the sum of product of proportion rate (weight) of recall class?

Weighted average – 0.84

13. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.83

**Navie Byes:**

**GaussianNB**

1. What is the overall performance for random forest model?

Accuracy – 0.90

2. What is the correct classification of not purchased?

Recall – 0.94

3. What is the correct classification of purchased?

Recall – 0.84

4. What is the correct & wrong classification of not purchased?

Precision – 0.91

5. What is the correct & wrong classification of purchased?

Precision – 0.89

6. What is the overall performance not purchased classification?

f1\_score – 0.92

7. What is the overall performance purchased classification?

f1\_score – 0.86

8. What is the average performance of precision?

Macro average – 0.90

9. What is the average performance of recall?

Macro average – 0.89

10. What is the average performance of f1\_score?

Macro average – 0.89

11. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.90

12. What is the sum of product of proportion rate (weight) of recall class?

Weighted average – 0.90

13. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.90

### **MultinomialNB**

1. What is the overall performance for random forest model?

Accuracy – 0.63

2. What is the correct classification of not purchased?

Recall – 1.00

3. What is the correct classification of purchased?

Recall – 0.00

4. What is the correct & wrong classification of not purchased?

Precision – 0.63

5. What is the correct & wrong classification of purchased?

Precision – 0.00

6. What is the overall performance not purchased classification?

f1\_score – 0.78



7. What is the overall performance purchased classification?

f1\_score – 0.00

8. What is the average performance of precision?

Macro average – 0.32

9. What is the average performance of recall?

Macro average – 0.50

10. What is the average performance of f1\_score?

Macro average – 0.39

11. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.40

12. What is the sum of product of proportion rate (weight) of recall class?

Weighted average – 0.63

13. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.49

## **BernoulliNB**

1. What is the overall performance for random forest model?

Accuracy – 0.63

2. What is the correct classification of not purchased?

Recall – 1.00

3. What is the correct classification of purchased?

Recall – 0.00

4. What is the correct & wrong classification of not purchased?

Precision – 0.63

5. What is the correct & wrong classification of purchased?

Precision – 0.00

6. What is the overall performance not purchased classification?

f1\_score – 0.78

7. What is the overall performance purchased classification?

f1\_score – 0.00

8. What is the average performance of precision?

Macro average – 0.32

9. What is the average performance of recall?

Macro average – 0.50

10. What is the average performance of f1\_score?

Macro average – 0.39

11. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.40

12. What is the sum of product of proportion rate (weight) of recall class?

Weighted average – 0.63

13. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.49

### **CategoricalNB**

1. What is the overall performance for random forest model?

Accuracy – 0.84

2. What is the correct classification of not purchased?

Recall – 0.96

3. What is the correct classification of purchased?

Recall – 0.63

4. What is the correct & wrong classification of not purchased?

Precision – 0.82

5. What is the correct & wrong classification of purchased?

Precision – 0.91

6. What is the overall performance not purchased classification?

f1\_score – 0.89

7. What is the overall performance purchased classification?

f1\_score – 0.75

8. What is the average performance of precision?

Macro average – 0.87

9. What is the average performance of recall?

Macro average – 0.80

10. What is the average performance of f1\_score?

Macro average – 0.82

11. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.85

12. What is the sum of product of proportion rate (weight) of recall class?

Weighted average – 0.84

13. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.84

## **ComplementNB**

1. What is the overall performance for random forest model?

Accuracy – 0.51

2. What is the correct classification of not purchased?

Recall – 0.47

3. What is the correct classification of purchased?

Recall – 0.59

4. What is the correct & wrong classification of not purchased?

Precision – 0.67

5. What is the correct & wrong classification of purchased?

Precision – 0.39

6. What is the overall performance not purchased classification?

f1\_score – 0.55

7. What is the overall performance purchased classification?

f1\_score – 0.47

8. What is the average performance of precision?

Macro average – 0.53

9. What is the average performance of recall?

Macro average – 0.53

10. What is the average performance of f1\_score?

Macro average – 0.51

11. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.57

12. What is the sum of product of proportion rate (weight) of recall class?

Weighted average – 0.51

13. What is the sum of product of proportion rate (weight) of precision class?

Weighted average – 0.52

