

CONFUSION MATRIX AND CLASSIFICATION REPORT

1-a) Confusion matrix for SVM

```
array([[82, 3],  
       [30, 19]], dtype=int64)
```

1-b) Classification report for SVM

	precision	recall	f1-score	support
0	0.73	0.96	0.83	85
1	0.86	0.39	0.54	49
accuracy			0.75	134
macro avg	0.80	0.68	0.68	134
weighted avg	0.78	0.75	0.72	134

2-a) Confusion matrix for Decision Tree

```
array([[80, 5],  
       [13, 36]], dtype=int64)
```

2-b) Classification report for Decision Tree

	precision	recall	f1-score	support
0	0.86	0.94	0.90	85
1	0.88	0.73	0.80	49
accuracy			0.87	134
macro avg	0.87	0.84	0.85	134
weighted avg	0.87	0.87	0.86	134

3-a) Confusion matrix for Random Forest

```
array([[78, 7],  
       [ 5, 44]], dtype=int64)
```

3-b) Classification report for Random Forest

	precision	recall	f1-score	support
0	0.94	0.92	0.93	85
1	0.86	0.90	0.88	49
accuracy			0.91	134
macro avg	0.90	0.91	0.90	134
weighted avg	0.91	0.91	0.91	134

Possible questions for each parameter from classification report

S.No	Question	Representing parameter	Result		
			SVM	D-TREE	R-Forest
1	a) What is the overall performance of the model? b) What is the percentage of the correct classification of both classes?	Accuracy	0.75	0.87	0.91
2	What is the percentage of correct and wrong classification of Non purchased?	precision for Non purchased	0.73	0.86	0.94
3	What is the percentage of correct and wrong classification of purchased?	precision for purchased	0.86	0.88	0.86
4	What is the percentage of correct classification of Non purchased?	recall for Non purchased	0.96	0.94	0.92
5	What is the percentage of correct classification of purchased?	recall for purchased	0.39	0.73	0.90
6	What is the overall performance of Non purchased?	f1-Score for Non purchased	0.83	0.90	0.93
7	What is the overall performance of purchased?	f1-Score for purchased	0.54	0.80	0.88
8	a)What is the average performance of precision? b)What is the average performance of correctly and wrongly classified?	macro avg for precision	0.80	0.87	0.90
9	a)What is the average performance of recall? b)What is the average performance of correctly and classified?	macro avg for recall	0.68	0.84	0.91
10	a)What is the average performance of f1-score? b)What is the average performance of overall classification?	macro avg for f1-Score	0.68	0.85	0.90
11	What is the precision sum of product of proportion of each class?	weighted avg for precision	0.78	0.87	0.91
12	What is the recall sum of product of proportion of each class?	weighted avg for recall	0.75	0.87	0.91
13	What is the f1-score sum of product of proportion of each class?	weighted avg for f1-Score	0.72	0.86	0.91