Classification Report for SVM_Grid

```
print(cm)
```

```
[[80  5]
 [ 7 42]]
```

```
print(clf_report)
```

	precision	recall	f1-score	support
0	0.92	0.94	0.93	85
1	0.89	0.86	0.88	49
accuracy			0.91	134
macro avg	0.91	0.90	0.90	134
weighted avg	0.91	0.91	0.91	134

*(0-Not Purchased, 1-Purchased)

Accuracy:

What is the percentage of correct classification of both (0 & 1) to the total input of the test set?

Accuracy =T(0)+T(1)/T(0)+T(1)+F(0)+F(1)

Accuracy = 80+42/80+42+5+7

=122/134

= 0.9104477611940299

```
accuracy                           0.91
```

Recall:

1.What is the percentage of correct classification of (0) to the total input of (0) in the test set?

Recall = T(0)/T(0)+F(0)

=80/80+5

=80/85

= 0.9411764705882353

```
recall

  0.94
  0.86
```

2. What is the percentage of correct classification of (1) to the total input of (1) in the test set?

Recall = T(1)/T(1)+F(1)

=42/42+7

= 0.8571428571428571

```
recall

  0.94
  0.86
```

Precision:

1. What is the percentage of correct and wrong classification of (0) to the total input of (0) in the test set?

Precision = T(0)/T(0)+F(1)

=80/80+7

= 0.9195402298850575

```
precision

0.92
0.89
```

2. 2. What is the percentage of correct and wrong classification of (1) to the total input of (1) in the test set?

Precision = T(1)/T(1)+F(0)

=42/42+5

= 0.89361702127659 57

```
precision

0.92
0.89
```

F1 Measure:

1. What is the percentage of overall performance of (0) to the total input of (0) in the test set?

F1 Measure(0)=2*Recall(0)*Precision(0)/ Recall(0)+Precision(0)

=2*0.94*0.92/0.94+0.92

=1.7296/1.86

= 0.9298924

```
f1-score

0.93
0.88
```

2. 2. What is the percentage of overall performance of (1) to the total input of (1) in the test set?

F1 Measure (1) =2*Recall(1)*Precision(1)/ Recall(1)+Precision(1)

=2*0.86*0.89/086+0.89

=1.5308/1.75

=0.87474286

```
f1-score

0.93
0.88
```

Macro Average:

1.What is the average performance of precision?

Macro Average=Precision(0)+Precision(1)/2
=0.92+0.89/2
= 0.905

2.What is the average performance of Recall?

Macro Average=Recal(0)+Recal(1)/2
=0.94+0.86
=0.90

3.What is the average performance of F1 Measure?

Macro Average=F1 Measure(0)+ F1_Measure (1)/2
=0.93+0.88/2

=0.90

accuracy			0.91	134
macro avg	0.91	0.90	0.90	134

Weighted Average:

1.What is the sum of product of proportion rate of Precision?

Weighted Average=Precision(0)*[Total of (0) in the TestSet/All count in the Testset]
+precision(1)*[Total of (1) in the TestSet/All count in the Testset]

=0.92*85/134+0.89*49/134

= 0.5835+ 0.90894

=0.91

2. What is the sum of product of proportion rate of of recall?

Weighted Average=recall(0)*[Total of (0) in the TestSet/All count in the Testset] +recall(1)*[Total of (1) in the TestSet/All count in the Testset]

=0.94*85/134+0.86*49/134

=0.91

3.What is the sum of product of proportion rate of F1 Measure?

Weighted Average= F1 Measure l(0)*[Total of (0) in the TestSet/All count in the Testset] + F1 Measure (1)*[Total of (1) in the TestSet/All count in the Testset]

=0.93*85/134+0.88*49/134

=0.91

weighted avg	0.91	0.91	0.91	134