Potential question raised for Confusion matrix – evaluation metric or validating parameters

- Algorithm ran using Decision Tree

1. What is the problem statement?
   It is a classification problem and it has 2 class under one input column "Male" or "Female".

	precision	recall	f1-score	support
0	0.92	0.90	0.91	79
1	0.81	0.85	0.83	41
accuracy			0.88	120
macro avg	0.87	0.88	0.87	120
weighted avg	0.89	0.88	0.88	120

2. What is the overall accuracy or output?
   Overall refers to the accuracy, hence in this algorithm it is 88% (0.88)

3. What the percentage of correctly classified as 'Purchased' and 'Not purchased'?
   It refers to Recall, hence for 'Purchased' 85% (0.85) and 'Not purchased' 90% (0.90)

4. What is the percentage of correctly and wrongly classified 'Purchased'?
   It refers to Precision, hence for purchased it is 92% (0.92)

5. What is the percentage of correctly and wrongly classified 'Not Purchased'?
   It refers to Precision, hence for Not purchased it is 81% (0.81)

6. What is the overall performance of 'Purchased' and 'Not purchased'?
   It refers to Macro avg
   It refers to F1 measure, hence for Purchased' 83% (0.83) and 'Not purchased' 91% (0.91)

7. What is the Average performance? Or what is the average performance of Precision, Recall, F1 measure?

Precision	Recall	F1 Measure
87%	88%	87%

8. What is the proportionate of each class or what is the Weight Average of each class?

Precision	Recall	F1 Measure
89%	88%	88%

➢ Algorithm ran using Random Forest

	precision	recall	f1-score	support
0	0.99	0.99	0.99	257
1	0.98	0.98	0.98	143
accuracy			0.98	400
macro avg	0.98	0.98	0.98	400
weighted avg	0.98	0.98	0.98	400

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1. What is the overall accuracy or output?
   Overall refers to the accuracy, hence in this algorithm it is 98% (0.98)

2. What the percentage of correctly classified as 'Purchased' and 'Not purchased'?
   It refers to Recall, hence for 'Purchased' 99% (0.99) and 'Not purchased' 99% (0.99)

3. What is the percentage of correctly and wrongly classified 'Purchased'?
   It refers to Precision, hence for purchased it is 98% (0.98)

4. What is the percentage of correctly and wrongly classified 'Not Purchased'?
   It refers to Precision, hence for Not purchased it is 99% (0.99)

5. What is the overall performance of 'Purchased' and 'Not purchased'?
   It refers to F1 measure, hence for Purchased' 98% (0.98) and 'Not purchased' 99% (0.99)

6. What is the Average performance? Or what is the average performance of Precision, Recall, F1 measure?
   It refers to Macro avg

Precision	Recall	F1 Measure
98%	98%	98%

7. What is the proportionate of each class or what is the Weight Average of each class?

Precision	Recall	F1 Measure
98%	98%	98%

Conclusion:

Since Random forest gives better result confusion matrix: overall 98%, hence will deploy this model in the production environment. However, determining result through SVMC is running indefinite, hence couldn't verify the result for the same.