

## Evaluation Metrics of the Confusion Matrix for the Following Algorithms

### Random Forest -Classification Report

	precision	Recall	F1-score	Support
0	0.93	0.92	0.92	85
1	0.86	0.88	0.87	49
accuracy			0.90	134
Macro Avg	0.89	0.90	0.90	134
Weighted Avg	0.90	0.90	0.90	134

### Questions:

1. What is the **overall performance** of the model?

**Answer:** 0.90

2. What is the percentage of **correct classification** of each **respective class**?

**Answer:** 0 - 0.92, 1 - 0.88

3. What is the percentage of **correctly and wrongly classified individuals** of each class?

**Answer:** 0 - 0.93, 1 - 0.86

4. How will you **validate your model** if the recall value is low and the precision value is high?

**Answer:** F1-score of 0 - 0.92, F1-score of 1 - 0.87

5. What is the **Average of precision performance**?

**Answer:** 0.89

6. What is the **Average of recall performance**?

**Answer:** 0.90

7. What is the **Average of the F1 measure performance**?

**Answer:** 0.90

8. What is the **weight or proportion** of each participating class?

**Answer:** Weighted Avg of precision - 0.90,  
Weighted Avg of recall – 0.90,  
Weighted Avg of F1-score – 0.90

### Decision Tree – Classification Report

	precision	Recall	F1-score	Support
0	0.90	0.89	0.90	85
1	0.82	0.84	0.83	49
<b>accuracy</b>			0.87	134
<b>Macro Avg</b>	0.86	0.87	0.86	134
<b>Weighted Avg</b>	0.87	0.87	0.87	134

### Questions:

1. What is the **overall performance** of the model?

**Answer:** 0.87

2. What is the percentage of **correct classification** of each **respective class**?

**Answer: 0 – 0.89, 1 – 0.84**

3. What is the percentage of **correctly and wrongly classified individuals** of each class?

**Answer: 0 - 0.90, 1 - 0.82**

4. How will you **validate your model** if the recall value is low and the precision value is high?

**Answer: F1-score of 0 - 0.90, F1-score of 1 - 0.83**

5. What is the **Average of precision performance**?

**Answer: 0.86**

6. What is the **Average of recall performance**?

**Answer: 0.87**

7. What is the **Average F1 measure performance**?

**Answer: 0.86**

8. What is the **weight or proportion** of each participating class?

**Answer: Weighted Avg of precision - 0.87,**

**Weighted Avg of recall – 0.87,**

**Weighted Avg of F1-score – 0.87**

## Support Vector Machine – Classification Report

	precision	Recall	F1-score	Support
0	0.76	0.96	0.85	85
1	0.88	0.47	0.61	49
accuracy			0.78	134
Macro Avg	0.82	0.72	0.73	134
Weighted Avg	0.81	0.78	0.76	134

### Questions:

1. What is the **overall performance** of the model?

**Answer:** 0.78

2. What is the percentage of **correct classification** of each **respective class**?

**Answer:** 0 – 0.96, 1 – 0.47

3. What is the percentage of **correctly and wrongly classified individuals** of each class?

**Answer:** 0 – 0.76, 1 – 0.88

4. How will you **validate your model** if the recall value is low and the precision value is high?

**Answer:** F1-score of 0 - 0.85, F1-score of 1 - 0.61

5. What is the **Average of the precision performance**?

**Answer:** 0.82

6. What is the **Average of recall performance?**

**Answer:** 0.72

7. What is the **Average of the F1 measure performance?**

**Answer:** 0.73

8. What is the **weight or proportion** of each participating class?

**Answer:** **Weighted Avg of precision** - 0.81,

**Weighted Avg of recall** – 0.78,

**Weighted Avg of F1-score** – 0.76