# Technical Terms For IRIS Flower Classification

**1. Confusion Matrix :-**

The confusion matrix is a table that shows how well your model is performing by comparing its predictions to the actual results. It helps to see where the model is making errors. Here's how to understand it:

* True Positive (TP) :- The number of times the model correctly predicted a class (species) as that class.
* False Positive (FP) :- The number of times the model incorrectly predicted a class, meaning it predicted something as a species that it wasn’t.
* True Negative (TN) :- The number of times the model correctly predicted a sample as not belonging to a specific class.
* False Negative (FN) :- The number of times the model predicted a species incorrectly, missing the correct class.
* A table that shows how many correct and incorrect predictions the model made.

[ [ 15 0 0 ]

[ 0 14 1 ]

[ 0 1 14 ] ]

**2. Precision :-**

* Precision tells you how accurate the positive predictions are.
* For example, if the model says an Iris flower is Setosa, how often is it actually Setosa?
* High precision means the model is good at not making false positive mistakes (i.e., it rarely labels something as Setosa when it’s not).
* How many times the model was right when it predicted a class as that class.
* Formula :-

Precision = True Positives / ( True Positives + False Positives

**3. Recall :-**

* Recall tells you how well the model identifies actual instances of a class.
* For example, out of all the actual Setosa flowers, how many did the model correctly identify as Setosa?
* High recall means the model is good at finding most of the actual instances of a species, even if it makes some mistakes.
* How many actual instances of a class (like Setosa) the model successfully identified.
* Formula :-

Recall = True Positives / ( True Positives + False Negatives )

**4. F1-Score :-**

* The F1-score is a balance between precision and recall.
* If your model has both high precision and high recall, then it will have a high F1-score.
* It’s especially useful when you care about both the false positives and false negatives equally.
* A combined measure that balances both precision and recall. It’s helpful when you want a balance between minimizing mistakes.
* Formula :-

F1-Score = 2 × Precision × Recall / ( Precision + Recall )

**5. Accuracy :-**

* Accuracy simply tells you the percentage of correct predictions out of all predictions.
* If your model predicted 90 out of 100 samples correctly, the accuracy would be 90%.
* The overall percentage of correct predictions made by the model.
* Formula :-

Accuracy = ( True Positives + True Negatives ) / Total Samples