***Random Forest Algorithm***

***Quiz:***

1. **Prefermance evaluation**

**Compute the accuracy score, confusion matrix, precision and recall using the testing dataset.**

Then select the correct answers

The precision is 0.89

The accuracy score is higher than 0.70

The precision is 0.948 and the recall is 0.958

The accuracy score is 0.75

2. **Compute precision and recall of the following example**

For this task, use the following dataset:

Max depth: 10 = Accuracy: 0.89,Precision: 0.92 and Recall: 0.86

Max depth: 10 = Accuracy: 0.85,Precision: 0.91 and Recall: 0.79

Max depth: 6 = Accuracy: 0.79, Precision: 0.81 and Recall: 0.85

Max depth: 4 = Accuracy: 0.85,Precision: 0.89 and Recall: 0.84

3. **Select the correct sentences about Random Forest**

The number of trees in a Random Forest model should always be large to achieve better performance.

The Random Forest algorithm constructs multiple decision trees and combines their outputs to make a final prediction

In a Random Forest model, each decision tree is trained on a random subset of the features.

Random Forest is a type of clustering algorithm.

Random Forest is a type of supervised learning algorithm.

The output of a Random Forest model is a probability score for each class.

The hyperparameters of a Random Forest model include the number of trees, the maximum depth of each tree, and the minimum number of samples required to split a node.

The Random Forest algorithm is prone to overfitting when the maximum depth of the trees is too small.

4. **True or False: Random Forest models generate non-linear decision boundaries.**

False

True

5. **True or False: Random Forest models are highly interpretable due to the simplicity of the decision trees that they are composed of.**

True

False

6. **Based on the previous example, which feature contributed more?**

Feature 5

Feature 7

Feature 4

Feature 1

7. **The feature importance score for a feature in a machine learning model indicates how much the feature contributes to the target variable.**

False

True