MACHINE LEARNING - LAB - 13 - SPOT- RANDOM FOREST CLASSIFIER

CODE:-

```python
import pandas as pd
from sklearn import model_selection
from sklearn.ensemble import RandomForestClassifier
from sklearn.model_selection import train_test_split

df = pd.read_csv('iris.csv')
array = df.values

X = df.iloc[:, :-1]
y = df.iloc[:, -1]
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size = 0.3)
```

Python

```python
num_trees = 50
max_features = 4

model = RandomForestClassifier(n_estimators=num_trees, max_features=max_features)

model.fit(X_train, y_train)

y_pred = model.predict(X_test)
```

Python

+ Code + Markdown

```python
from sklearn.metrics import confusion_matrix
from sklearn.metrics import classification_report
from sklearn.metrics import accuracy_score

print('Accuracy = ',accuracy_score(y_pred, y_test))

y_true = y_test
print('\nConfusion Matrix: \n', confusion_matrix(y_true, y_pred))

matrix = classification_report(y_true,y_pred)
print('\nClassification report : \n',matrix)
```

Python

```
Accuracy =  0.9333333333333333

Confusion Matrix:
 [[17  0  0]
 [ 0 15  0]
 [ 0  3 10]]

Classification report :
              precision    recall  f1-score   support

           1       1.00      1.00      1.00        17
           2       0.83      1.00      0.91        15
           3       1.00      0.77      0.87        13

    accuracy                           0.93        45
   macro avg       0.94      0.92      0.93        45
weighted avg       0.94      0.93      0.93        45
```