

Project Development Phase
Model Performance Test

Date	10 November 2022
Team ID	PNT2022TMID18347
Project Name	Project - Web Phishing Detection
Maximum Marks	10 Marks

Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No.	Parameter	Values
1.	Metrics	Random Forest Classifier Accuracy score-96.653
2.	Tune the Model	Hyperparameter Tuning - Validation Method -

1. METRICS

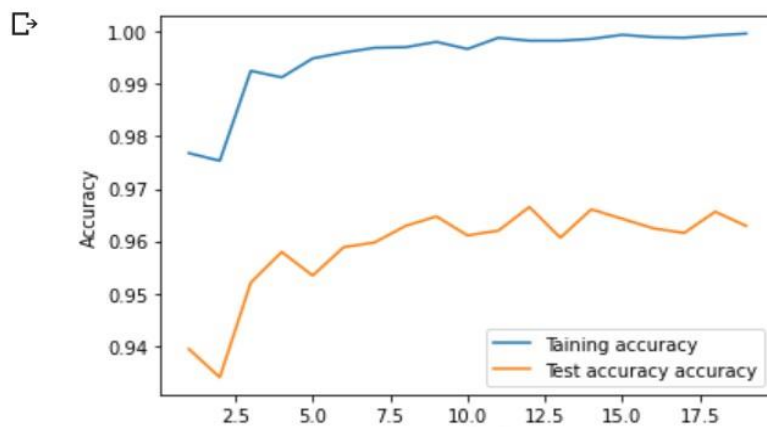
Classification Report:

```
[ ] #classification report of Randomm Forest model  
    print(metrics.classification_report(y_test,y_test_rf))
```

	precision	recall	f1-score	support
-1	0.98	0.95	0.96	1014
1	0.96	0.98	0.97	1197
accuracy			0.97	2211
macro avg	0.97	0.97	0.97	2211
weighted avg	0.97	0.97	0.97	2211

Performance:

```
training_accuracy=[]
test_accuracy=[]
depth=range(1,20)
for n in depth:
    rf_test=RandomForestClassifier(n_estimators=n)
    rf_test.fit(x_train,y_train)
    training_accuracy.append(rf_test.score(x_train,y_train))
    test_accuracy.append(rf_test.score(x_test,y_test))
plt.figure(figsize=None)
plt.plot(depth,training_accuracy,label="Taining accuracy")
plt.plot(depth,test_accuracy,label="Test accuracy accuracy")
plt.ylabel("Accuracy")
plt.xlabel("max_depth")
plt.legend();
```



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2. Tune the model

[]					
	ML Model	Accuracy	f1_score	Recall	Precision
0	Logistic Regression	91.814	92.567	94.496	94.496
1	Random Forest	96.653	96.942	100.000	100.000
2	XgbClassifier	94.754	95.207	96.714	96.714
3	Decision tree	95.206	95.605	100.000	100.000

```
[ ] sorted_result=result.sort_values(by=['Accuracy', 'f1_score'],ascending=False).reset_index(drop=True)
sorted_result
```

	ML Model	Accuracy	f1_score	Recall	Precision
0	Random Forest	96.653	96.942	100.000	100.000
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2	XgbClassifier	94.754	95.207	96.714	96.714
3	Logistic Regression	91.814	92.567	94.496	94.496