Model Development Phase Template

Date	9 July 2024
Team ID	team-739994
Project Title	Precise Coffee Quality Prediction
Maximum Marks	4 Marks

Initial Model Training Code, Model Validation and Evaluation Report

The initial model training code will be showcased in the future through a screenshot. The model validation and evaluation report will include classification reports, accuracy, and confusion matrices for multiple models, presented through respective screenshots.

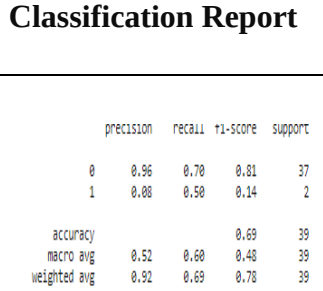
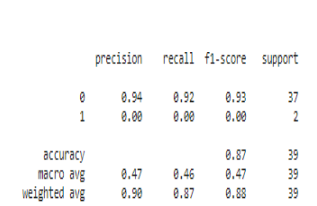
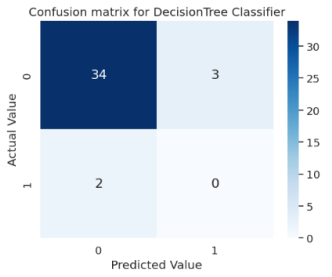
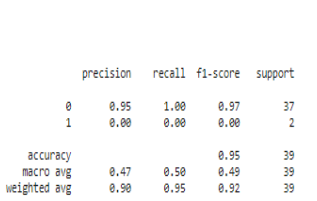
Initial Model Training Code:

```
from sklearn.metrics import accuracy_score
from sklearn.linear_model import LogisticRegression
from sklearn.preprocessing import StandardScaler
from sklearn.metrics import classification_report
accuracy_lr=accuracy_score(y_test,y_test_pred)
print('-------Model Accuracy--------')
print(accuracy_score(y_test,y_test_pred))
print(accuracy_score(y_train,y_train_pred))
accuracy=LR.score(x_test,y_test)
print('-------Logistic Regression--------')
print("Model Accuracy\t\t",{accuracy})
print(f'Accuracy in percentage\t{"{:.1%}".format(accuracy)}')
print(classification_report(y_test,y_test_pred))
print(classification_report(y_train,y_train_pred))
```

```
from sklearn.metrics import accuracy_score
from sklearn.tree import DecisionTreeClassifier
from sklearn.preprocessing import StandardScaler
from sklearn.metrics import classification_report
accuracy_dtc=accuracy_score(y_test,y_test_pred1)
print('-------Model Accuracy--------')
print(accuracy_score(y_test,y_test_pred1))
print(accuracy_score(y_train,y_train_pred1))
accuracy=DTC.score(x_test,y_test)
print('-------DecisionTree Classifier--------')
print("Model Accuracy\t\t",{accuracy})
print(f'Accuracy in percentage\t{"{:.1%}".format(accuracy)}')
print(classification_report(y_test,y_test_pred1))
print(classification_report(y_train,y_train_pred1))
```

```
from sklearn.metrics import accuracy_score
from sklearn.ensemble import RandomForestClassifier
from sklearn.preprocessing import StandardScaler
from sklearn.metrics import classification_report
accuracy_rfc=accuracy_score(y_test,y_test_pred2)
print('-------Model Accuracy--------')
print(accuracy_score(y_test,y_test_pred2))
print(accuracy_score(y_train,y_train_pred2))
accuracy=RFC.score(x_test,y_test)
print('-------Random Forest Classifier--------')
print("Model Accuracy\t\t",{accuracy})
print(f'Accuracy in percentage\t{"{:.1%}".format(accuracy)}')
print(classification_report(y_test,y_test_pred2))
print(classification_report(y_train,y_train_pred2))
```

Model Validation and Evaluation Report:

Model	Classification Report	Accuracy	Confusion Matrix
Logistic Regression		69.2%	
Decision Tree Classifier		87.2%	
Random Forest Classifier		94.9%