Model Development Phase Template

Date	15 March 2024
Team ID	SWTID1720452383
Project Title	Ecommerce Shipping Prediction Using Machine Learning
Maximum Marks	4 Marks

Initial Model Training Code, Model Validation and Evaluation Report

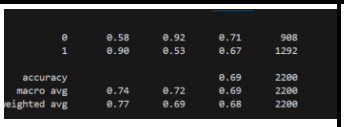
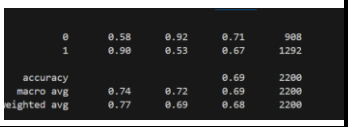
The initial model training code will be showcased in the future through a screenshot. The model validation and evaluation report will include classification reports, accuracy, and confusion matrices for multiple models, presented through respective screenshots.

Initial Model Training Code:

```
rfc = RandomForestClassifier(random_state=0)
param_grid = {
    'max_depth': [4, 8, 12, 16],
    'min_samples_leaf': [2, 4, 6, 8],
    'min_samples_split': [2, 4, 6, 8],
    'criterion': ['gini', 'entropy']
}
grid_rfc = GridSearchCV(estimator=rfc, param_grid=param_grid, cv=5, n_jobs=-1, verbose=2, scoring='accu
grid_rfc.fit(X_train, y_train)
best_params_rfc = grid_rfc.best_params_
print('Best parameters for Random Forest Classifier:', best_params_rfc)

rfc_final = RandomForestClassifier(**best_params_rfc, random_state=0)
rfc_final.fit(X_train, y_train)
rfc_pred = rfc_final.predict(X_test)
print('Accuracy for Random Forest Classifier:', accuracy_score(y_test, rfc_pred))
print('Confusion Matrix for Random Forest Classifier:\n', confusion_matrix(y_test, rfc_pred))
print('Classification Report for Random Forest Classifier:\n', classification_report(y_test, rfc_pred))
```

Model Validation and Evaluation Report:

Model	Classification Report	Accuracy	Confusion Matrix
Random forest classifier		71%	
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