Model Development Phase

Date	15 March 2024
Team ID	xxxxxx
Project Title	xxxxxx
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:

```
#importing and building the random forest model
def RandomForest(X_tarin,X_test,y_train,y_test):
    model = RandomForestClassifier()
    model.fit(X_train,y_train)
    y_tr = model.predict(X_train)
    print(accuracy_score(y_tr,y_train))
    yPred = model.predict(X_test)
    print(accuracy_score(yPred,y_test))
```

Model Development Phase

```
#importing and building the Decision tree model
def decisionTree(X_train,X_test,y_train,y_test):
    model = DecisionTreeClassifier()
    model.fit(X_train,y_train)
    y_tr = model.predict(X_train)
    print(accuracy_score(y_tr,y_train))
    yPred = model.predict(X_test)
    print(accuracy_score(yPred,y_test))
```

Model Validation and Evaluation Report:

Model	Classification Report	Accuracy	Confusion Matrix

Random forest	`print(classification_report(y_test,ypred))`
	precision recall f1-score support
	Loan will be Approved 0.78 0.83 0.80 75
	Loan will not be Approved 0.85 0.81 0.83 94
	accuracy 0.82 169
	macro avg 0.81 0.82 0.82 169
	weighted avg 0.82 0.82 0.82 169
		75%	`confusion_matrix(y_test,ypred)`
			`array([[62, 13],`
			`[18, 76]])`

Decision tree	`print(classification_report(y_test,ypred))`
	precision recall f1-score support
	Loan will be Approved 0.73 0.83 0.77 75
	Loan will not be Approved 0.85 0.76 0.80 94
	accuracy 0.79 169
	macro avg 0.79 0.79 0.79 169
	weighted avg 0.79 0.79 0.79 169
		80%	`confusion_matrix(y_test,ypred)`
			`array([[62, 13],`
			`[23, 71]])`

...	...	...	...