Model Development Phase Template

Date	18 June 2024
Team ID	739768
Project Title	To Predict Consumer Price Index
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.ensemble import RandomForestRegressor
rfr=RandomForestRegressor()
rfr.fit(x_train,y_train)
```

```
▾ RandomForestRegressor
RandomForestRegressor()
```

```
from sklearn.metrics import accuracy_score
```

```
from sklearn.linear_model import LinearRegression,Lasso
lr=LinearRegression()
```

```
lr.fit(x_train,y_train)
```

```
▾ LinearRegression
LinearRegression()
```

Model Validation and Evaluation Report:

Model	Classification Report	F1 Score	Confusion Matrix

Random Forest	https://accounts.google.com/SignOutOptions?hl=en&continue=https://colab.research.google.com/drive/15eWnRR2VMOhgmmCTe_Ytbr5AdP-E7Ssd%3Fusp%3Dsharing&ec=GBRAqQM
	`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
		81%	`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
		79%	`confusion_matrix(y_test,ypred)`
			
			`array([[62, 13],`
			`[23, 71]])`

KNN	`print(classification_report(y_test,ypred))`
	
	precision recall f1-score support
	
	Loan will be Approved 0.60 0.57 0.59 75
	Loan will not be Approved 0.67 0.69 0.68 94
	
	accuracy 0.64 169
	macro avg 0.63 0.63 0.63 169
	weighted avg 0.64 0.64 0.64 169
		64%	`confusion_matrix(y_test,ypred)`
			
			`array([[43, 32],`
			`[29, 65]])`

Gradient Boosting	`print(classification_report(y_test,ypred))`
	
	precision recall f1-score support
	
	Loan will be Approved 0.71 0.84 0.77 75
	Loan will not be Approved 0.85 0.72 0.78 94
	
	accuracy 0.78 169
	macro avg 0.78 0.78 0.77 169
	weighted avg 0.79 0.78 0.78 169
		78%	`confusion_matrix(y_test,ypred)`
			
			`array([[63, 12],`
			`[26, 68]])`