Model Development Phase Template

Date	10 July 2024
Team ID	739943
Project Title	Early Prediction Of Chronic Kidney Disease
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:

```
# Make predictions with both models
Y_pred_lgr = pipelines['Logistic Regression'].predict(X_test)
Y_pred_rf = pipelines['Random Forest'].predict(X_test)

# Evaluate the Logistic Regression model
print("\nLogistic Regression Model Evaluation:")
accuracy_lgr = accuracy_score(Y_test, Y_pred_lgr)
conf_mat_lgr = confusion_matrix(Y_test, Y_pred_lgr)
class_report_lgr = classification_report(Y_test, Y_pred_lgr)
print(f"Accuracy: {accuracy_lgr}")
print(f"Confusion Matrix:\n {conf_mat_lgr}")
print(f"Classification Report:\n {class_report_lgr}")
```

```
# Evaluate the Random Forest model
print("\nRandom Forest Model Evaluation:")
accuracy_rf = accuracy_score(Y_test, Y_pred_rf)
conf_mat_rf = confusion_matrix(Y_test, Y_pred_rf)
class_report_rf = classification_report(Y_test, Y_pred_rf)
print(f"Accuracy: {accuracy_rf}")
print(f"Confusion Matrix:\n {conf_mat_rf}")
print(f"Classification Report:\n {class_report_rf}")
```

Model Validation and Evaluation Report:

Model	Classification Report	Accuracy	Confusion Matrix
Logistic Regression	Classification Report: precision recall f1-score support 0 1.00 0.85 0.92 54 1 0.76 1.00 0.87 26 accuracy 0.90 80 macro avg 0.88 0.93 0.89 80 weighted avg 0.92 0.90 0.90 80	90%	Logistic Regression Model Evaluation: Accuracy: 0.9 Confusion Matrix: [[46 8] [0 26]]
Random Forest	Classification Report: precision recall f1-score support 0 0.96 0.96 0.96 54 1 0.92 0.92 0.92 26 accuracy 0.95 80 macro avg 0.94 0.94 0.94 80 weighted avg 0.95 0.95 0.95 80	95%	Random Forest Model Evaluation: Accuracy: 0.95 Confusion Matrix: [[52 2] [2 24]]