Model Development Phase Template

Date	15 July 2024
Team ID	739846
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:

```python
# 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]]