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Model Development Phase Template

Date	15 March 2024
Team ID	xxxxxx
Project Title	Forecasting Economic Prosperity: Leveraging Machine Learning For GDP Per Capita Prediction
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.

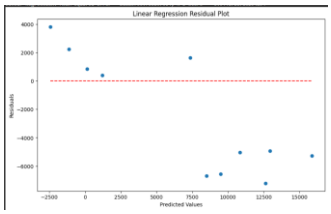
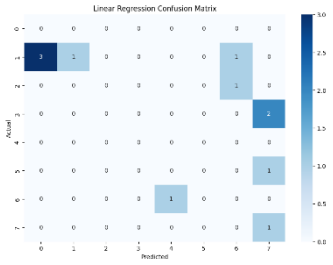
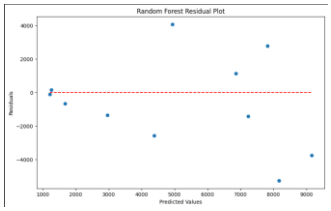
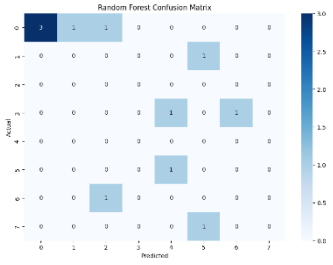
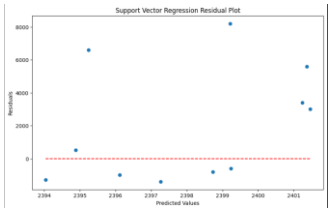
Initial Model Training Code:

Paste the screenshot of the model training code

```
# Model Building
models = {
    'Linear Regression': LinearRegression(),
    'Random Forest': RandomForestRegressor(n_estimators=100, random_state=42),
    'Support Vector Regression': SVR(kernel='rbf')
}
```

```
# Train and evaluate each model
for name, model in models.items():
    model.fit(X_train, y_train)
    y_pred = model.predict(X_test)
    mse = mean_squared_error(y_test, y_pred)
    r2 = r2_score(y_test, y_pred)
    print(f'{name}: Mean Squared Error = {mse}, R^2 Score = {r2}')
```

Model Validation and Evaluation Report:

Model	Classification Report	Accuracy	Confusion Matrix
Linear Regression		Mean Squared Error = 21883733.766837504, R^2 Score = -0.9441781713294894	
Random Forest		Mean Squared Error = 7133952.090909091, R^2 Score = 0.36621080852875953	
Support Vector Regression		Mean Squared Error = 15330417.613966553, R^2 Score = -0.3619733999691279