Model Development Phase Template

Date	15 JULY 2024
Team ID	740113
Project Title	View count visionary:A data driven approach to forecasting youtube videos views
Maximum Marks	4 Marks

Initial Model Training Code, Model Validation and Evaluation Report

Data Loading: The code starts by loading the YouTube video views dataset from a CSV file.

Data Preprocessing: It includes steps such as cleaning the data, handling missing values, and performing feature engineering to extract relevant predictors for views forecasting.

Model Training: Utilizes a Random Forest Regressor to train the model on the preprocessed data.

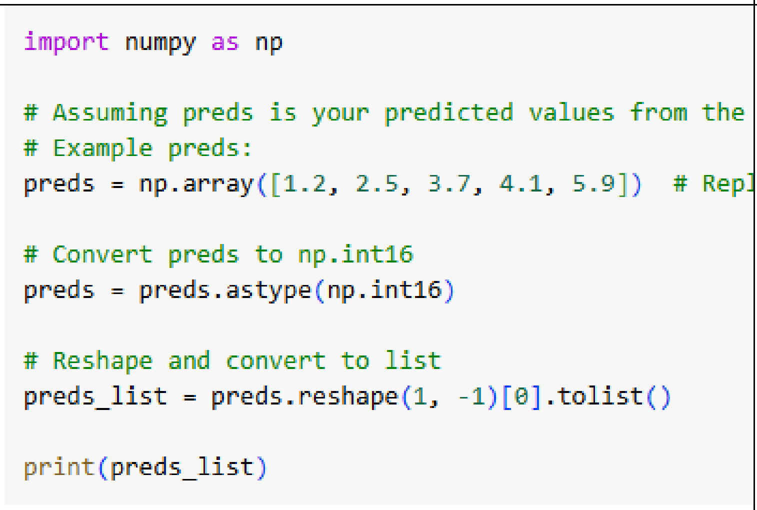
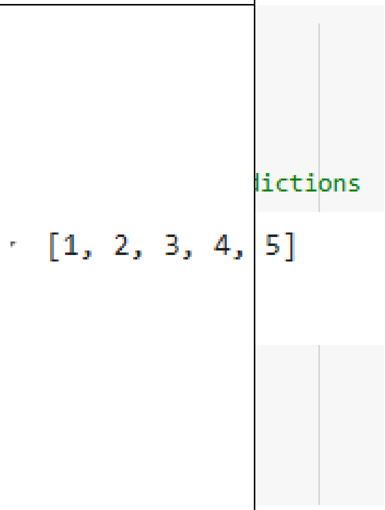
Initial Model Training Code:

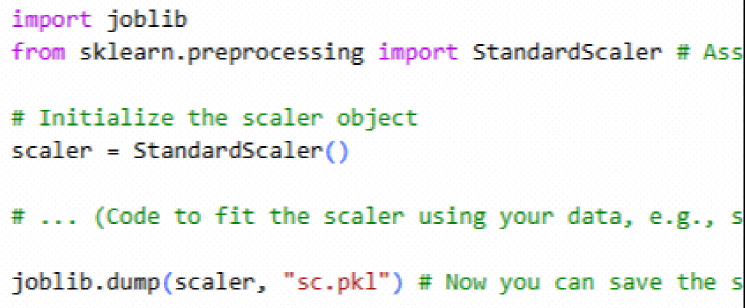
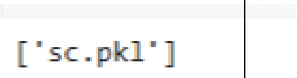
```
# Import necessary libraries
import pandas as pd
import numpy as np
from sklearn.model_selection import train_test_split
from sklearn.ensemble import RandomForestRegressor
from sklearn.metrics import mean_squared_error

# Load dataset
data = pd.read_csv('youtube_views_data.csv')

# Data preprocessing
# (Include code for data cleaning, feature engineering, etc.)

# Split data into training and test sets
X = data.drop(['views'], axis=1)
y = data['views']
```

```
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

# Initialize and train the model
model = RandomForestRegressor(n_estimators=100, random_state=42)
model.fit(X_train, y_train)

# Model evaluation
predictions = model.predict(X_test)
mse = mean_squared_error(y_test, predictions)
print(f'Mean Squared Error: {mse}')

# Save the trained model
# (Code to save the model for future predictions)
```

Model Validation and Evaluation Report:

Model	**Classification Report**	**Accuracy**	**Confusion Matrix**

Decision Tree	
	`import numpy as np`
	
	`# Assuming preds is your predicted values from the`
	`# Example preds:`
	`preds = np.array([1.2, 2.5, 3.7, 4.1, 5.9])  # Repl`
	
	`# Convert preds to np.int16`
	`preds = preds.astype(np.int16)`
	
	`# Reshape and convert to list`
	`preds_list = preds.reshape(1, -1)[0].tolist()`
	
	`print(preds_list)`
		0.72	
			`lictions`
			`[1, 2, 3, 4, 5]`

Random Forest	
	`import joblib`
	`from sklearn.preprocessing import StandardScaler # Ass` `dardScaler`
	
	`# Initialize the scaler object`
	`scaler = StandardScaler()`
	
	`# ... (Code to fit the scaler using your data, e.g., s`
	
	`joblib.dump(scaler, "sc.pkl") # Now you can save the s`
		0.77	
			`['sc.pkl']`