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import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from sklearn.model selection import train test split
from sklearn.tree import DecisionTreeRegressor
from sklearn.ensemble import RandomForestRegressor
from sklearn.metrics import mean squared error, r2 score
df = pd.read csv('student scores.csv')
df.columns = ['Hours Studied', 'Test Score']
X = df[['Hours Studied']]
y = df['Test Score']
X_train, X_test, y_train, y_test = train_test_split(X, y,
test size=0.2, random state=42)
dt model = DecisionTreeRegressor(random state=42)
dt_model.fit(X_train, y_train)
dt pred = dt model.predict(X test)
dt mse = mean squared error(y test, dt pred)
dt r2 = r2 score(y test, dt pred)
rf model = RandomForestRegressor(n estimators=100, random state=42)
rf model.fit(X train, y train)
rf pred = rf model.predict(X test)
rf_mse = mean_squared_error(y test, rf pred)
rf r2 = r2 score(y test, rf pred)
print("Model Comparison:")
print("-" * 30)
print(f"Decision Tree Regressor:")
print(f" Mean Squared Error (MSE): {dt mse:.2f}")
print(f" R-squared (R2) Score: {dt_r2:.2f}")
print("-" * 30)
print(f"Random Forest Regressor:")
print(f" Mean Squared Error (MSE): {rf mse:.2f}")
print(f" R-squared (R2) Score: {rf_r2:.2f}")
print("-" * 30)
Model Comparison:
Decision Tree Regressor:
  Mean Squared Error (MSE): 31.70
 R-squared (R2) Score: 0.95
Random Forest Regressor:
  Mean Squared Error (MSE): 13.05
 R-squared (R2) Score: 0.98
```