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In [11]: import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
from sklearn.linear_model import LinearRegression
from sklearn.tree import DecisionTreeRegressor
from sklearn.ensemble import RandomForestRegressor
from sklearn.svm import SVR
from sklearn.metrics import mean_squared_error

In [12]: data = pd.read_csv('CC_GENERAL.csv')

In [13]: data = data.drop('CUST_ID', axis=1)

In [14]: imputer = SimpleImputer(strategy='mean')
data_imputed = pd.DataFrame(imputer.fit_transform(data), columns=data.columns)

In [15]: X = data_imputed.drop('BALANCE', axis=1)
y = data_imputed['BALANCE']

In [16]: X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=

In [17]: scaler = StandardScaler()
X_train_scaled = scaler.fit_transform(X_train)
X_test_scaled = scaler.transform(X_test)

In [18]: models = {
    "Linear Regression": LinearRegression(),
    "Decision Tree Regressor": DecisionTreeRegressor(random_state=42),
    "Random Forest Regressor": RandomForestRegressor(random_state=42),
    "Support Vector Regressor": SVR()
}

In [19]: for model_name, model in models.items():
    print(f"Training {model_name}...")
    model.fit(X_train_scaled, y_train)

    y_pred = model.predict(X_test_scaled)

    mse = mean_squared_error(y_test, y_pred)
    print(f"{model_name} Mean Squared Error: {mse}")

Training Linear Regression...
Linear Regression Mean Squared Error: 1527115.0109119546
Training Decision Tree Regressor...
Decision Tree Regressor Mean Squared Error: 366702.6830634899
Training Random Forest Regressor...
Random Forest Regressor Mean Squared Error: 237961.27027835845
Training Support Vector Regressor...
Support Vector Regressor Mean Squared Error: 3976184.5392024983

In [ ]:
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