**MLA0201-Fundamentals of Machine Learning**

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Experiment 17:

Implement Mobile Price Prediction using appropriate machine learning algorithm.

**Code:**

import pandas as pd

import matplotlib.pyplot as plt

import numpy as np

from sklearn.model\_selection import train\_test\_split

from sklearn.preprocessing import LabelEncoder, StandardScaler

from sklearn.ensemble import RandomForestRegressor

from sklearn.metrics import r2\_score, mean\_squared\_error

data = pd.read\_csv("mobile\_price\_data.csv")

X = data.drop("Price", axis=1)

y = data["Price"]

encoder = LabelEncoder()

X["Brand"] = encoder.fit\_transform(X["Brand"])

scaler = StandardScaler()

X\_scaled = scaler.fit\_transform(X)

X\_train, X\_test, y\_train, y\_test = train\_test\_split(

X\_scaled, y, test\_size=0.3, random\_state=1

)

model = RandomForestRegressor(

n\_estimators=150,

random\_state=1

)

model.fit(X\_train, y\_train)

print("Mobile Price Prediction model trained successfully")

y\_pred = model.predict(X\_test)

r2 = r2\_score(y\_test, y\_pred)

rmse = np.sqrt(mean\_squared\_error(y\_test, y\_pred))

print("R² Score:", r2)

print("RMSE:", rmse)

new\_mobile = pd.DataFrame([{

"Brand": "Samsung",

"RAM\_GB": 8,

"Storage\_GB": 128,

"Battery\_mAh": 5000,

"Camera\_MP": 64,

"Screen\_Inches": 6.5

}])

new\_mobile["Brand"] = encoder.transform(new\_mobile["Brand"])

new\_mobile\_scaled = scaler.transform(new\_mobile)

predicted\_price = model.predict(new\_mobile\_scaled)

print("Predicted Mobile Price:", predicted\_price[0])

plt.figure()

plt.scatter(y\_test, y\_pred)

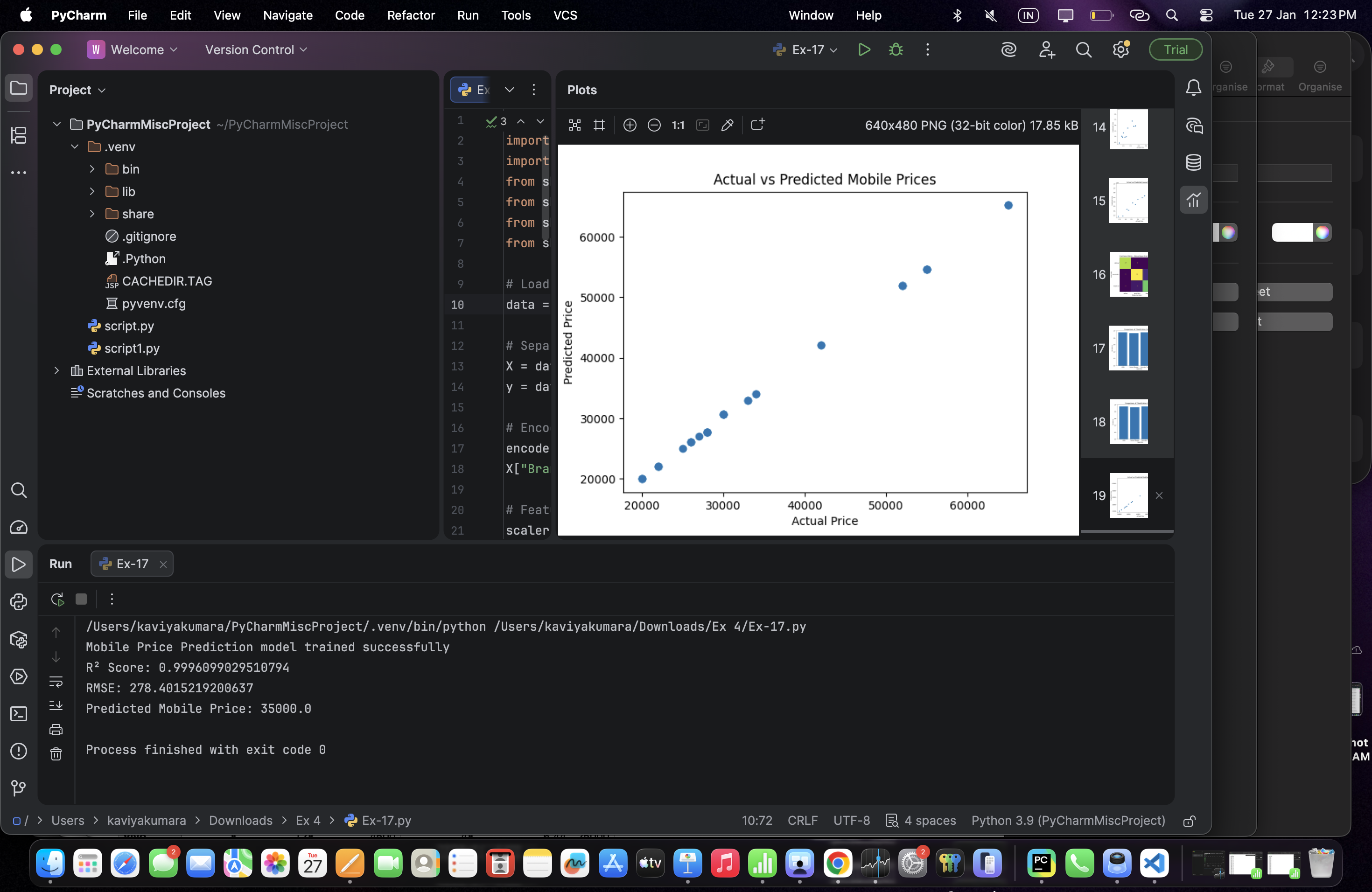
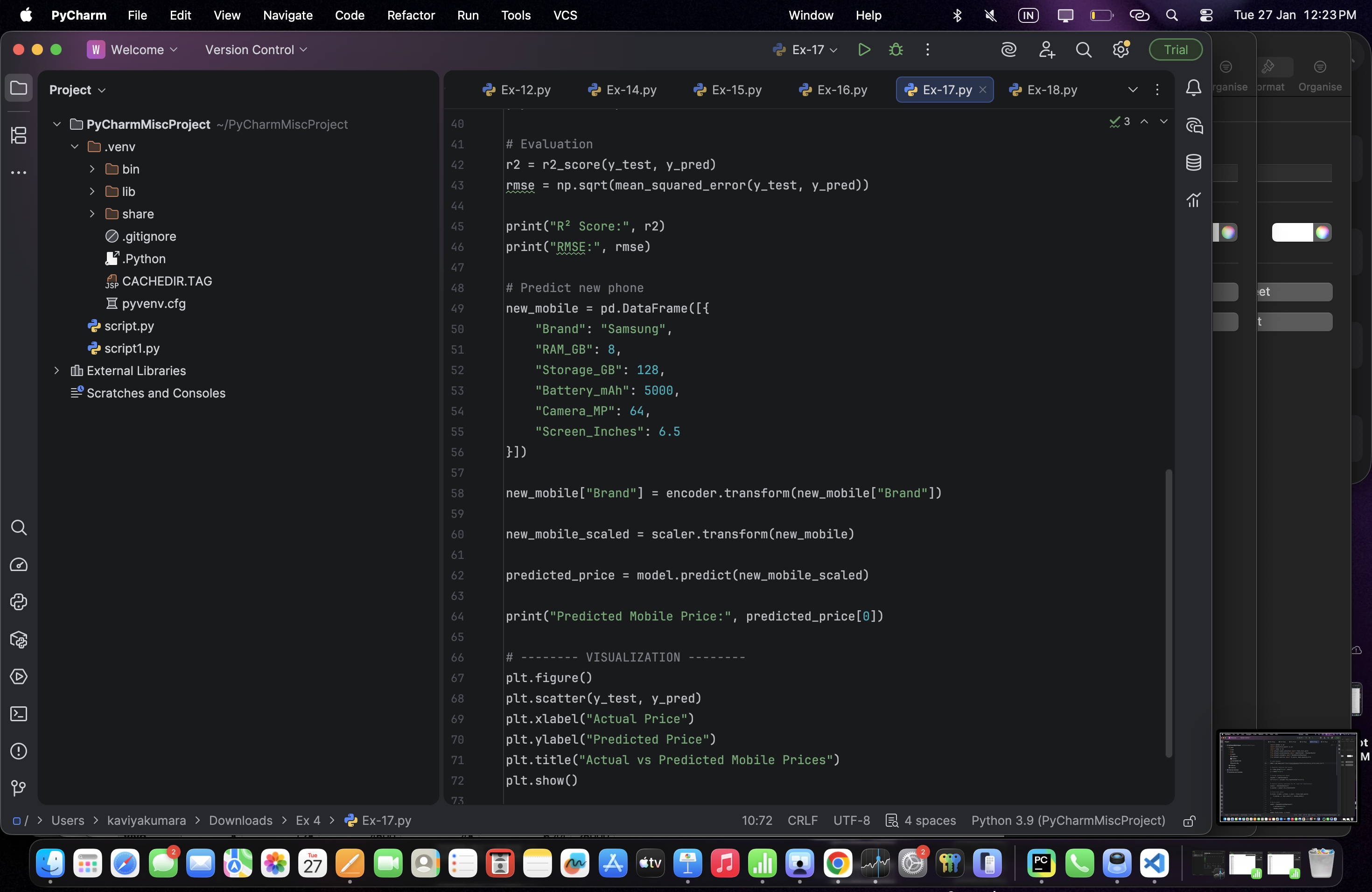
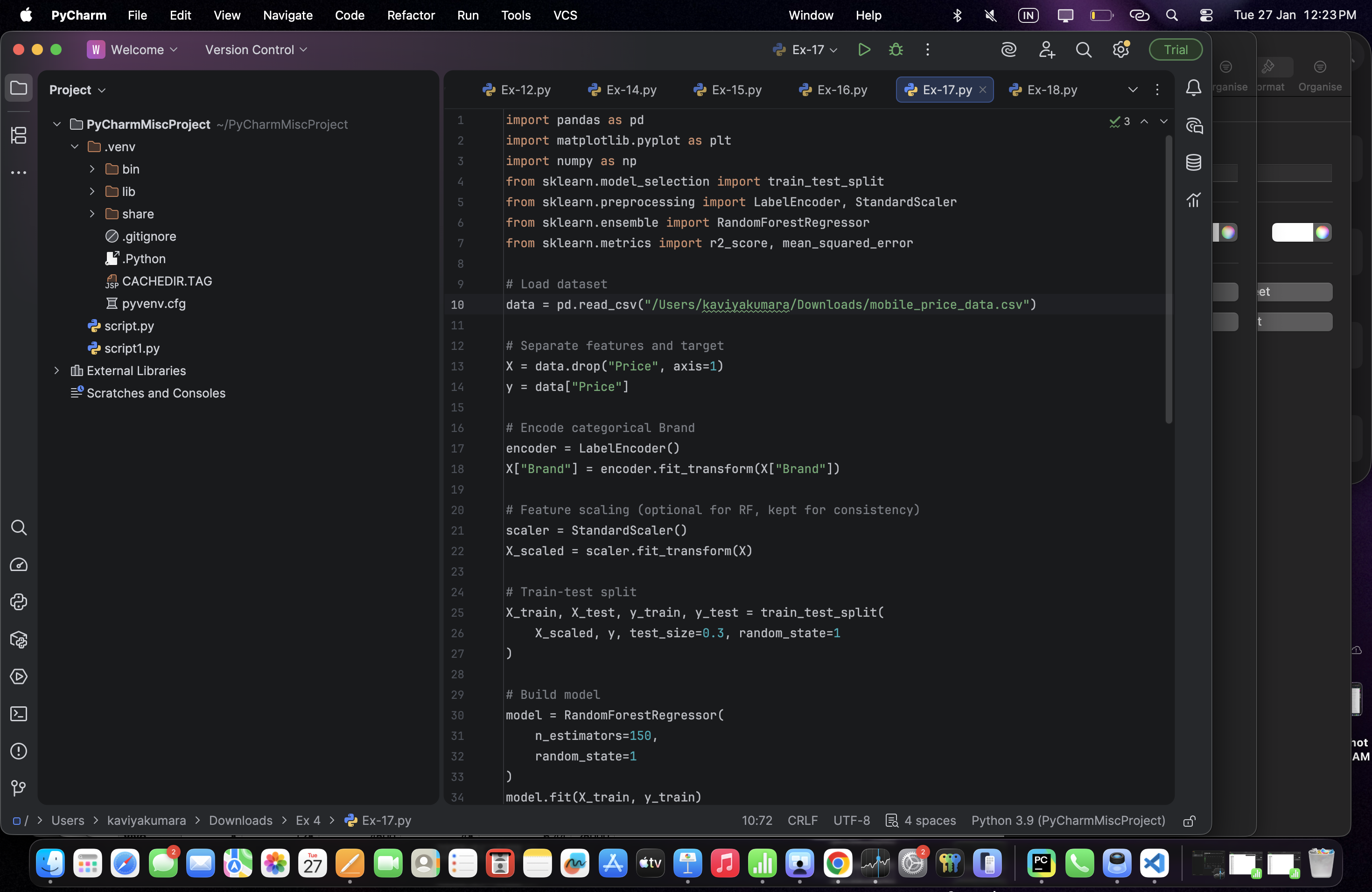
plt.xlabel("Actual Price")

plt.ylabel("Predicted Price")

plt.title("Actual vs Predicted Mobile Prices")

plt.show()

**Output:**

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