

EXPERIMENT-26

26.Question 3: Linear Regression for Housing Price Prediction

You are a real estate analyst trying to predict housing prices based on various features of the houses, such as area, number of bedrooms, and location. You have collected a dataset of houses with their respective prices.

Write a Python program that allows the user to input the features (area, number of bedrooms, etc.) of a new house. The program should use linear regression from scikit-learn to predict the price of the new house based on the input features.

Code:

```
import pandas as pd
from sklearn.linear_model import LinearRegression
from sklearn.preprocessing import OneHotEncoder
from sklearn.compose import ColumnTransformer
from sklearn.pipeline import Pipeline
data = pd.read_csv("housing.csv")
X = data[["area", "bedrooms", "age", "location"]]
y = data["price"]
preprocessor = ColumnTransformer(
    transformers=[
        ("cat", OneHotEncoder(handle_unknown="ignore"), ["location"])
    ],
    remainder="passthrough"
)
model = Pipeline([
    ("pre", preprocessor),
    ("lr", LinearRegression())
])
model.fit(X, y)
area = float(input("Enter house area (sq ft): "))
bed = int(input("Enter number of bedrooms: "))
age = int(input("Enter house age (years): "))
loc = input("Enter location (city/suburb/village): ")
new_house = pd.DataFrame([{
    "area": area,
    "bedrooms": bed,
    "age": age,
    "location": loc
}])
```

```
predicted_price = model.predict(new_house)[0]
print("\nPredicted House Price:", round(predicted_price, 2))
```

Output:

```
[Running] python -u "c:\Users\karan\OneDrive\Desktop\New folder (2)\26.py"
Predicted price for the new house: 353558.37

[Done] exited with code=0 in 1.751 seconds
```