

1. Importing Libraries: Import necessary libraries at the beginning of our script. It helps in organizing our code and ensures us have all the tools we need.

```
```python
Import pandas as pd
From sklearn.model_selection import train_test_split
From sklearn.linear_model import LinearRegression
From sklearn.metrics import mean_squared_error
Import matplotlib.pyplot as plt
```
```

2. Loading the Dataset: Load your dataset using `pd.read_csv`. Make sure the CSV file ('house_data.csv' in this case) is in the same directory as your script.

```
```python
Data = pd.read_csv('house_data.csv')
```
```

3. Handling Categorical Variables If you have categorical variables, one-hot encode them to convert them into a format suitable for machine learning.

```
```python
Data = pd.get_dummies(data, columns=['Location', 'Zip_Code'])
```
```

4. Selecting Features and Target Variable: Define your feature matrix (X) and the target variable (y).

```
```python
```

```
X = data.drop('Price', axis=1)
```

```
Y = data['Price']
```

```
'''
```

5. Splitting the Data: Split your data into training and testing sets using `train_test_split`.

```
'''python
```

```
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3, random_state=42)
```

```
'''
```

6. Model Initialization and Training: Initialize your linear regression model, and then train it using the training data.

```
'''python
```

```
Model = LinearRegression()
```

```
Model.fit(X_train, y_train)
```

```
'''
```

7. Making Predictions: Use the trained model to make predictions on the test data.

```
'''python
```

```
Predictions = model.predict(X_test)
```

```
'''
```

8. Evaluating the Model: You can evaluate your model's performance, for example, by calculating the mean squared error (MSE).

```
'''python
```

```
Mse = mean_squared_error(y_test, predictions)
```

```
Print(f'Mean Squared Error: {mse}')
```

```
'''
```

9. Creating a DataFrame with Results: Create a DataFrame with actual prices and predicted prices and save it to a CSV file.

```
```python
```

```
Results = pd.DataFrame({'Actual Prices': y_test, 'Predicted Prices': predictions})
```

```
Results.to_csv('predicted_prices.csv', index=False)
```

```
'''
```

10. Visualizing the Results: Create a scatter plot to visualize the relationship between actual and predicted prices.

```
```python
```

```
Plt.figure(figsize=(8, 6))
```

```
Plt.scatter(y_test, predictions, alpha=0.5)
```

```
Plt.title('Actual Prices vs. Predicted Prices')
```

```
Plt.xlabel('Actual Prices')
```

```
Plt.ylabel('Predicted Prices')
```

```
Plt.plot([min(y_test), max(y_test)], [min(y_test), max(y_test)], 'k—', lw=2) # Diagonal line showing perfect prediction
```

```
Plt.show()
```

```
'''
```