```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns

from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_squared_error , r2_score

boston = pd.read_csv('boston.csv')
boston.head()
```

```
   Unnamed: 0     crim    zn  indus  chas    nox     rm   age     dis
rad  \
0           1  0.00632  18.0   2.31     0  0.538  6.575  65.2  4.0900
1
1           2  0.02731   0.0   7.07     0  0.469  6.421  78.9  4.9671
2
2           3  0.02729   0.0   7.07     0  0.469  7.185  61.1  4.9671
2
3           4  0.03237   0.0   2.18     0  0.458  6.998  45.8  6.0622
3
4           5  0.06905   0.0   2.18     0  0.458  7.147  54.2  6.0622
3

   tax  ptratio   black  lstat  medv
0  296     15.3  396.90   4.98  24.0
1  242     17.8  396.90   9.14  21.6
2  242     17.8  392.83   4.03  34.7
3  222     18.7  394.63   2.94  33.4
4  222     18.7  396.90   5.33  36.2
```

```
print(boston.columns)
```

```
Index(['Unnamed: 0', 'crim', 'zn', 'indus', 'chas', 'nox', 'rm',
'age', 'dis',
       'rad', 'tax', 'ptratio', 'black', 'lstat', 'medv'],
      dtype='object')
```

```
# Features (X) = all columns except 'medv'
X = boston.drop('medv' , axis = 1)
# Target(y) = 'medv'
y = boston['medv']

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

# Create model
model = LinearRegression()
```

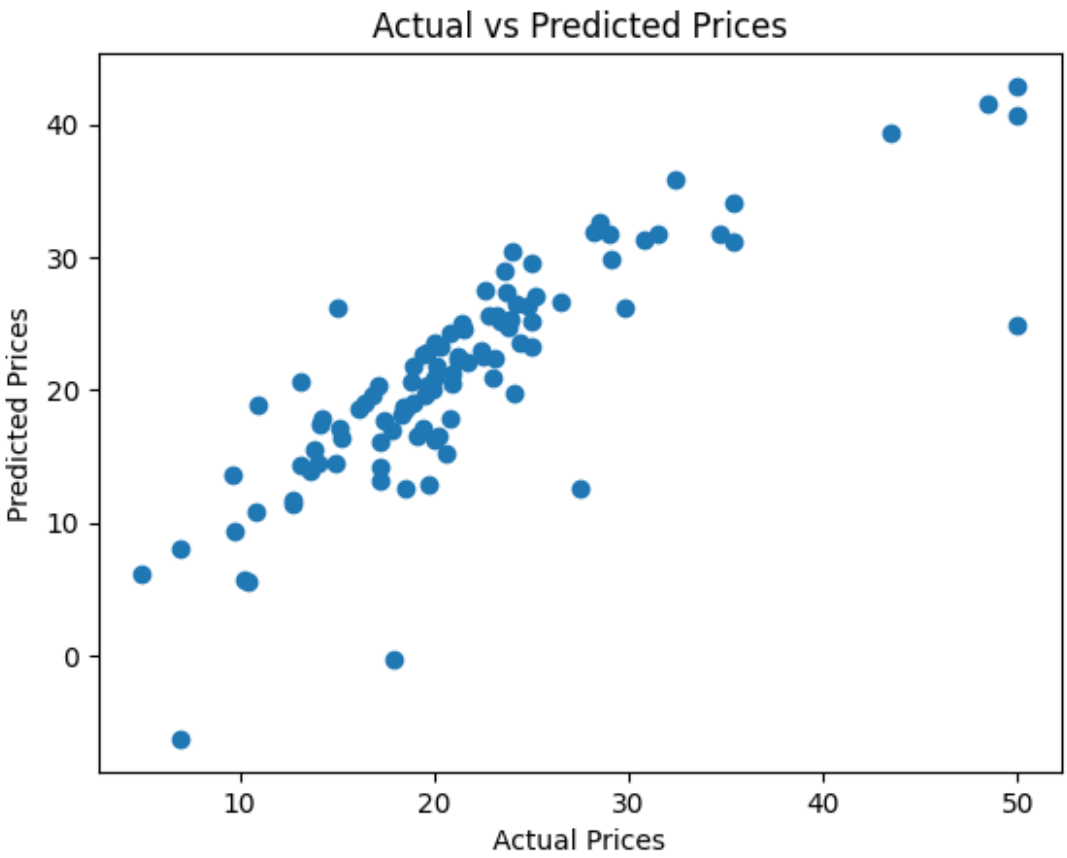
```
# Train model
model.fit(X_train,y_train)
```

```
LinearRegression()
```

```
# Predict
y_pred = model.predict(X_test)

# mean squared error
mse = mean_squared_error(y_test,y_pred)

# r2 score
r2 = r2_score(y_test,y_pred)

print(f"Mean Squared Error :{mse}")
print(f"R2 Score :{r2}")
```

```
Mean Squared Error :24.497819777630266
R2 Score :0.6659408703343053
```

```
#plot

plt.scatter(y_test,y_pred)
plt.xlabel("Actual Prices")
plt.ylabel("Predicted Prices")
plt.title("Actual vs Predicted Prices")
plt.show()
```


Actual vs Predicted Prices
Predicted Prices
Actual Prices
40
30
20
10
0
10
20
30
40
50