Import necessary libraries

In [3]:
```
import numpy as np
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
from sklearn.datasets import load_boston
import matplotlib.pyplot as plt
```

Load the Boston Housing dataset

In [4]:
```
boston = load_boston()
data = pd.DataFrame(boston.data, columns=boston.feature_names)
```

In [14]:
```
data
```

Out[14]:

	CRIM	ZN	INDUS	CHAS	NOX	RM	AGE	DIS	RAD	TAX	PTRATIO	B
0	0.00632	18.0	2.31	0.0	0.538	6.575	65.2	4.0900	1.0	296.0	15.3	396.90
1	0.02731	0.0	7.07	0.0	0.469	6.421	78.9	4.9671	2.0	242.0	17.8	396.90
2	0.02729	0.0	7.07	0.0	0.469	7.185	61.1	4.9671	2.0	242.0	17.8	392.83
3	0.03237	0.0	2.18	0.0	0.458	6.998	45.8	6.0622	3.0	222.0	18.7	394.63
4	0.06905	0.0	2.18	0.0	0.458	7.147	54.2	6.0622	3.0	222.0	18.7	396.90
...	...	...	...	...	...	...	...	...	...	...	...	...
501	0.06263	0.0	11.93	0.0	0.573	6.593	69.1	2.4786	1.0	273.0	21.0	391.99
502	0.04527	0.0	11.93	0.0	0.573	6.120	76.7	2.2875	1.0	273.0	21.0	396.90
503	0.06076	0.0	11.93	0.0	0.573	6.976	91.0	2.1675	1.0	273.0	21.0	396.90
504	0.10959	0.0	11.93	0.0	0.573	6.794	89.3	2.3889	1.0	273.0	21.0	393.45
505	0.04741	0.0	11.93	0.0	0.573	6.030	80.8	2.5050	1.0	273.0	21.0	396.90

506 rows × 14 columns

In [ ]:
```
data['PRICE'] = boston.target
```

Select features and target variable

In [17]:
```
X = data.drop('PRICE', axis=1)
y = data['PRICE']
```

Split the data into training and testing sets

In [18]:
```
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, ra
```

Create a Linear Regression model

In [19]:
```
model = LinearRegression()
```

Train the model

In [20]:
```
model.fit(X_train, y_train)
```

Out[20]:
```
LinearRegression(copy_X=True, fit_intercept=True, n_jobs=None, normalize=F
alse)
```

Make predictions on the test set

In [21]:
```
y_pred = model.predict(X_test)
```

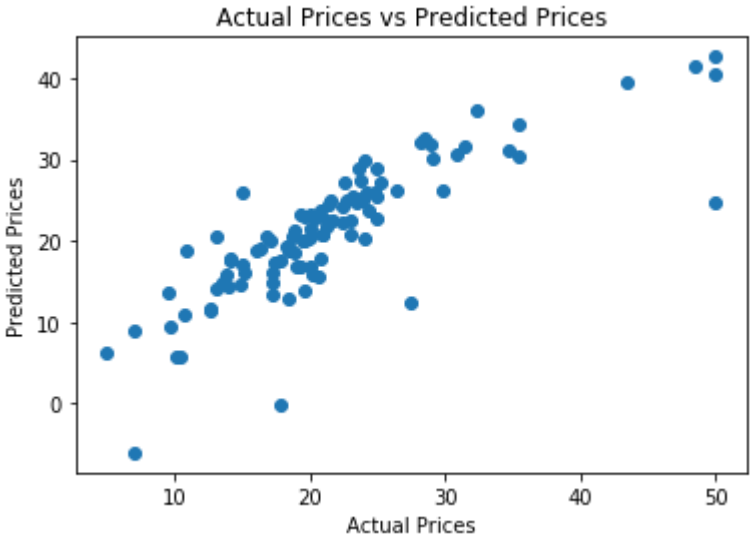
Evaluate the model

In [22]:
```
mse = mean_squared_error(y_test, y_pred)
rmse = np.sqrt(mse)
print(f'Mean Squared Error: {mse}')
print(f'Root Mean Squared Error: {rmse}')
```

```
Mean Squared Error: 24.291119474973538
Root Mean Squared Error: 4.928602182665339
```

Visualize predictions vs actual values

In [23]:
```
plt.scatter(y_test, y_pred)
plt.xlabel('Actual Prices')
plt.ylabel('Predicted Prices')
plt.title('Actual Prices vs Predicted Prices')
plt.show()
```



In [ ]: