In [1]:

```python
#Step 1: Import packages and classes
import numpy as np
from sklearn.linear_model import LinearRegression
```

In [2]:

```python
#Step 2: Provide data
x = np.array([5, 15, 25, 35, 45, 55]).reshape((-1, 1))#because x must be 2D
y = np.array([5, 20, 14, 32, 22, 38])
```

In [4]:

```python
#Step 3: Create a model and fit it
model = LinearRegression()
model.fit(x, y)
#model = LinearRegression().fit(x, y)
#out[]:LinearRegression()
```

Out[4]:

```
LinearRegression(copy_X=True, fit_intercept=True, n_jobs=None, normalize=False)
```

In [5]:

```python
#Step 4: Get results
r_sq = model.score(x, y)
print(f"coefficient of determination: {r_sq}")
print(f"intercept: {model.intercept_}")
print(f"slope: {model.coef_}")
```

```
coefficient of determination: 0.715875613747954
intercept: 5.633333333333329
slope: [0.54]
```

In [6]:

```python
#Step 5: Predict response
y_pred = model.predict(x)
print(f"predicted response:\n{y_pred}")
```

```
predicted response:
[ 8.33333333 13.73333333 19.13333333 24.53333333 29.93333333 35.33333333]
```

In [7]:

```python
m = np.array([4, 12, 28, 37, 41, 54]).reshape((-1, 1))
y_pred1 = model.predict(m)
print(f"predicted response:\n{y_pred1}")
```

```
predicted response:
[ 7.79333333 12.11333333 20.75333333 25.61333333 27.77333333 34.79333333]
```