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

```
df = pd.read_csv("PriceDataSet.csv")
```

```
df.head()
```

| | weight | price |
|---|---|---|
| **0** | 1 | 10 |
| **1** | 2 | 20 |
| **2** | 3 | 25 |
| **3** | 4 | 40 |
| **4** | 5 | 45 |

```
df.head(10)
```

| | weight | price |
|---|---|---|
| **0** | 1 | 10 |
| **1** | 2 | 20 |
| **2** | 3 | 25 |
| **3** | 4 | 40 |
| **4** | 5 | 45 |
| **5** | 6 | 75 |
| **6** | 7 | 90 |
| **7** | 8 | 100 |
| **8** | 9 | 115 |
| **9** | 10 | 120 |

```
df.shape
```

```
(15, 2)
```

```
df.isnull().sum()
```

```
weight    0
price     0
dtype: int64
```

```
df.columns
```

```
Index(['weight', 'price'], dtype='object')
```

```
X=df[['weight']].values
y=df['price']
```

```
X[0:10]
```

```
array([[ 1],
       [ 2],
       [ 3],
       [ 4],
       [ 5],
       [ 6],
       [ 7],
       [ 8],
       [ 9],
       [10]])
```

```
X
```

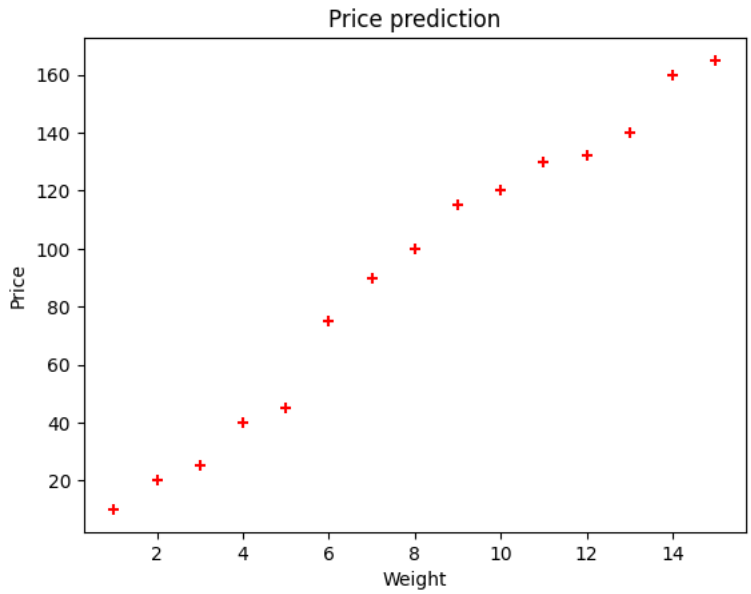
```
array([[ 1],
       [ 2],
       [ 3],
       [ 4],
       [ 5],
       [ 6],
       [ 7],
       [ 8],
       [ 9],
       [10],
       [11],
       [12],
       [13],
       [14],
       [15]])
```

```
X.max()
```

```
15
```

```
plt.scatter(X,y, marker='+',color='red')
plt.xlabel("Weight")
plt.ylabel("Price")
plt.title("Price prediction")
```

```
Text(0.5, 1.0, 'Price prediction')
```




```
from sklearn.model_selection import train_test_split
```

```
X_train,X_test,y_train,y_test=train_test_split(X,y,test_size=.25,random_state=1)
```

```
X_test
```

```
array([[4],
       [8],
       [7],
       [3]])
```

```
y_test
```

```
3     40
7    100
6     90
2     25
Name: price, dtype: int64
```

```
from sklearn.linear_model import LinearRegression
```

```
reg=LinearRegression()
```

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

```
▾ LinearRegression
LinearRegression()
```

```
reg.predict(X_test)
```

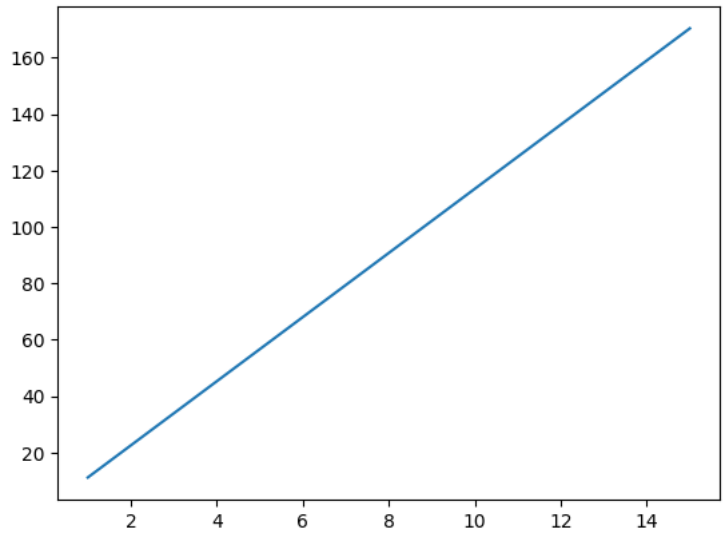
```
array([45.28752979, 90.75694996, 79.38959492, 33.92017474])
```

```
y_test
```

```
3     40
7    100
6     90
2     25
Name: price, dtype: int64
```

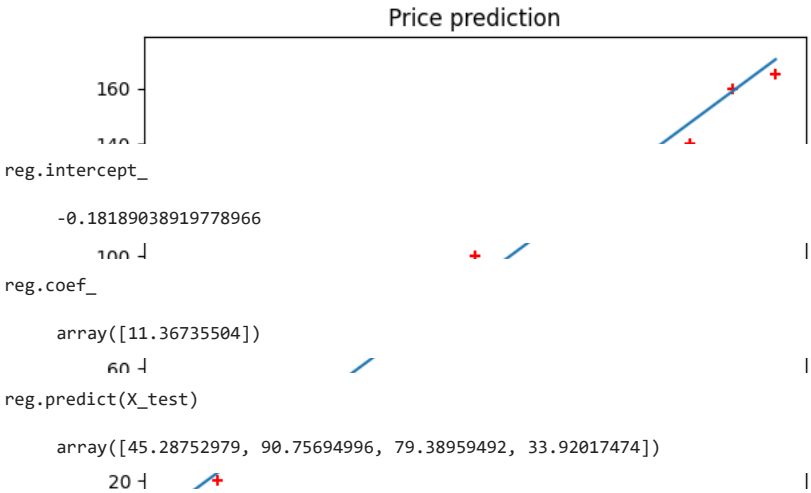
```
plt.plot(df['weight'],reg.predict(df[['weight']]))
```

```
/usr/local/lib/python3.10/dist-packages/sklearn/base.py:432: UserWarning: X has feature names, but LinearRegression was fitted without f
  warnings.warn(
[<matplotlib.lines.Line2D at 0x79815a1e62c0>]
```




```
plt.scatter(X,y, marker='+',color='red')
plt.xlabel("Weight")
plt.ylabel("Price")
plt.title("Price prediction")
plt.plot(df['weight'],reg.predict(df[['weight']]))
```

```
/usr/local/lib/python3.10/dist-packages/sklearn/base.py:432: UserWarning: X has feature names, but LinearRegression was fitted without f
  warnings.warn(
[<matplotlib.lines.Line2D at 0x79815a0313f0>]
```




```
reg.intercept_
```

```
-0.18189038919778966
```

```
reg.coef_
```

```
array([11.36735504])
```

```
reg.predict(X_test)
```

```
array([45.28752979, 90.75694996, 79.38959492, 33.92017474])
```

```
y_test
```

```
3     40
7    100
6     90
2     25
Name: price, dtype: int64
```

```
b= 11.3674*3 -.018189
```

```
b
```

```
34.084011
```

```
reg.predict([[3]])
```

```
array([33.92017474])
```

```
reg.score(X_test,y_test)
```

```
0.924905153000603
```