Linear regression is a statistical modeling technique that establishes a linear relationship between a dependent variable and one or more independent variables. The model seeks to determine the coefficients of the linear equation that best fits the observed data, minimizing the difference between actual and predicted values. It assumes that the relationship between variables is linear, with each independent variable having a constant effect on the dependent variable. Linear regression is widely used for making predictions and understanding the relationship between variables in fields such as economics, finance, and social sciences. By analyzing the coefficients and assessing the model's performance, practitioners can gain insights into the underlying dynamics of the data. Despite its simplicity, linear regression remains a powerful and essential tool in statistical analysis and predictive modeling.

Area	**Price**
1500	200000
2000	250000
2500	300000
3000	350000
3500	400000

```
import numpy as np

from sklearn.linear_model import LinearRegression


X = np.array([[1500], [2000], [2500], [3000], [3500]])

y = np.array([200000, 250000, 300000, 350000, 400000])


model = LinearRegression()

model.fit(X, y)


new_area = np.array([[4000]])

predicted_price = model.predict(new_area)

print("Predicted price:", predicted_price[0])
```