

[How to Perform Simple Linear Regression in Python \(Step-by-Step\) \(statology.org\)](#) — Links to an external site.

Linear regression is a basic technique used to calculate trends when the values are clearly trending upwards or downwards.

In this assignment, Your company is monitoring an asset that in the last 10 months had the following values (Low price) per stock:

Month1: 10.25, **Month2:** 10.45, **Month3:** 10.87, **Month4:** 10.75, **Month5:** 11.2, **Month6:** 12.01, **Month7:** 12.25, **Month8:** 12.95, **Month9:** 12.80, **Month10:** 13.05, **Month11:** 14.2.

Your company wants you to estimate the price this asset is going to reach in a Month12, so They can decide to invest in it or not now. (Month11 is the present time).

You decide to use Data Science techniques such as estimation with Linear regression.

You will need to:

- Import the Libraries in your program.
You can use the OLS function (included in the link): [statsmodels.regression.linear_model.OLS](#) — [statsmodels](#), Links to an external site.
- Or the model `sklearn.linear_model.LinearRegression` , Machine learning part of the package [scikit-learn 1.1.1](#) — [Links to an external site](#).
- Visualize the data with the plot command. (you can use Pyplot.)
- Calculate the line that best fit the trend of the asset.
- Calculate the estimated value by the trend.
- Would you recommend buying the asset?

Turn it in a Word document. Put your name, date, and class. Make sure you give a good description of the exercise. Do the assignment described above.

Put your assignment in one file as a `.doc` or `.docx` in the link at the top. It should be in one file with your `lastname.doc` .

Ten points off if you do not do this.