

Homework N 1

1. State the problem

Suppose that we performed an experiment, and then we obtained experiment data as shown belows:

x	1	2	3	4	5	6	7	8	9	10
y	1.3	3.2	11.3	15.1	25.5	38.2	47.1	68.2	81.3	98.2

Based on data we have obtained, the first thing we have to think about data is to guess the trend of the data. Is it tend to linear, quadratic or other. It is crucial because one is to determine the order of polynomial.

2. Define the inputs and output

The inputs of this program are data as shown on data table above. There are data of independent variables x and data of dependent variables y . Make them as vector. Then, the outputs of this data fitting program are a specific polynomial p and data evaluation of p . You can use *polyval* to evaluate the polynomial.

3. Describe the algorithm

This problem can be broken down into three steps:

- Read the values of input, namely, x and y as a vector of each.
- Apply the predefined functions, these are *polyfit* to fit the data to specific polynomial and *polyval* to evaluate the polynomial at any points.
- Write out the output (e.g the polynomial p and evaluation data table of p)