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| Assignment 4 | |
| Due Date | March 4, 2019 |
| Date of Submission | March 3, 2019 |

# Problem 1

## Objective

Do a third order polynomial fit to the following data using Linear Least Squares Optimization.

## Solution

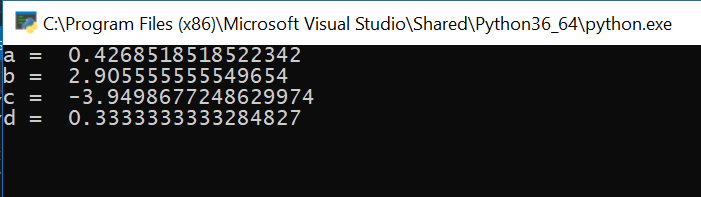
Create a cost function C:

Take the partial derivatives of the Cost function with respect to each parameter (a, b, c, d) and equate to zero (0):

Combine the equations into a Matrix Equation:

## Result

The values for the parameters are:



The resulting plot is shown below:

