MA227 (Assignment-4)

An experiment has been performed where the following data has been collected

x_i	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	11.0
y_i	0.0	0.0	1.0	1.5	2.5	3.5	4.5	5.0	6.5	8.0	10.0

1. Find a best fit line $f(x) = c_1 x + c_0$ that approximate the data

   (i) By using the function *LSSNEqn.m* (of Assignment 3). Plot the obtained line $f(x)$ and also plot the points (x_i, y_i) in the same window and then save this plot as Figure 1.

   (ii) By using the function *GramSelf.m* (of Assignment 3). Plot the obtained line $f(x)$ and also plot the points (x_i, y_i) in the same window and then save this plot as Figure 2.

   (iii) By using the function *HouseSelf.m* (of Assignment 3). Plot the obtained line $f(x)$ and also plot the points (x_i, y_i) in the same window and then save this plot as Figure 3.

   (iv) By using the MP-inverse of the associated matrix. Use the built-in function **svd** to find the MP-inverse. Plot the obtained line $f(x)$ and also plot the points (x_i, y_i) in the same window and then save this plot as Figure 4.

2. Repeat all parts of Problem 1 to find a best fit curve $f(x) = c_2 x^2 + c_1 x + c_0$ that approximate the data. Save the figures as Figure 5, 6, 7, and 8, respectively.