**CS 474-574**

**Programming Assignment 1**

(200pts.)

**Name:**

**Date: 9-18-18**

**Problem 1:** Using a linear regression model fit the best line to the following data:

x = [ 0.0, 0.1,0.2,0.3,0.4,0.5,0.6,0.7,0.8,0.9,1.0]’

y = [0.73,0.85,0.92,1.23,1.73,1.95,2.11,2.71,3.43,4.42,4.85]’

Hint: Utilize the pseudo-inverse method to solve the above problem.

Remember: **y=mx +b** is the best fit line.

**Problem 2:** Using the linear regression model fit the best plane to the following data:

x = [ -0.1, -0.2,-0.3,-0.4,-0.5, 0.0, 0.1,0.2,0.3,0.4,0.5]’

y = [0.0,1.0,2.0,3.0,4.0,5.0,6.0,7.0,8.0,9.0,10.0]’

z = [0,127,255,200,100,65,30,255,128,89,230]’

Hint: Utilize the pseudo-inverse method to solve the above problem.

Remember: z**=m1\*x + m2\*y +b** is the best fit plane.