City University
Faculty of Science & Engineering
Department of Computer Science and Engineering
CSE 231: Numerical Analysis, **Semester:** Fall 2018
Final Project , Submission date: 8.3.2019

Final Project: Data Analysis using Linear Regression.

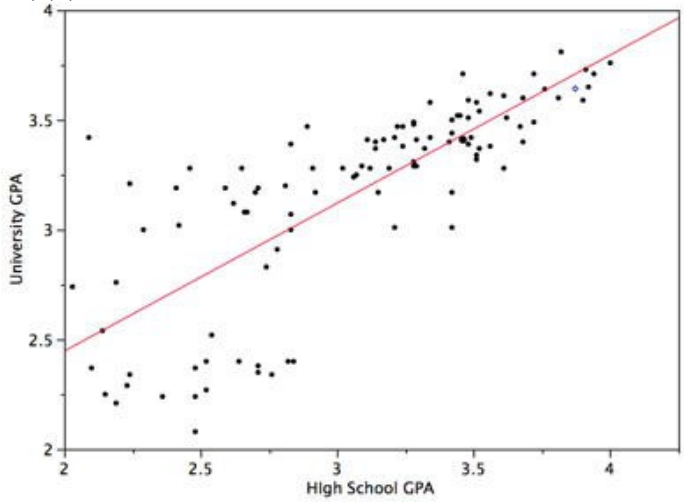
Linear regression is used for finding linear relationship between target and one or more predictors. linear regression is useful for finding relationship between two continuous variables. One is predictor or independent variable and other is response or dependent variable. It looks for statistical relationship but not deterministic relationship[1].

A Real Example
The case study "SAT and College GPA"contains high school and university grades for 105 computer science majors at a local state school. We now consider how we could predict a student's university GPA if we knew his or her high school GPA.
Figure shows a scatter plot of University GPA as a function of High School GPA. You can see from the figure that there is a strong positive relationship. The correlation is 0.78.

The regression equation is
University GPA' = (0.675)(High School GPA) + 1.097

Therefore, a student with a high school GPA of 3 would be predicted to have a university GPA of

University GPA' = (0.675)(3) + 1.097 = 3.12.



How Much Do Car Maintenance Costs Increase with Mileage?

Mileage(Thousand Kilo)	Cost per 25 kilo in $
0-25	1400
25-50	2200
50-75	3000
75-100	3900
100-125	4100
125-150	4400
150-175	4800
175-200	5000

Catering costs for an event
Maybe you know how much catering costs for an event with 10 people and also 50 people as well as 100 people, but you need an accurate estimate of how much catering will cost for 25 people or 75. That's a useful thing to know just for hosting a nice party.

No. of Person	Cost in TK
5	2000
7	2500
10	3200
13	3900
18	5200
20	5900
25	6700
50	14000
100	26000

In the report, you will include the following heading.

1. Introduction
2. Data collection
3. Linear Regression theory
4. Linear Regression in matlab
5. Regression graph and Discussion
6. conclusion

Reference

[1] https://towardsdatascience.com/linear-regression-detailed-view-ea73175f6e86
[2] http://onlinestatbook.com/2/regression/intro.html