**Comsats University Islamabad**

**Assignment 2**

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| **Program** | BCS | **Semester** | SP21 |
| **Subject** | Topics in CS II | **Subject Code** | CSC 483 |
| **Section** | 7A, 7B, 7C | **Instructor** | Dr. Sohaib Ali |

**Question: CLO-3**

* Please submit the binder or colab link to your respective CRs
* Visit <https://github.com/MadhumithaKannan/linear-regression-using-only-numpy> and familiarize yourself with the data available in lin\_reg\_data.csv and the code of different regression schemes.
* Randomly divide 50% data as your training set and the remaining 50% as your test set.
* Using training set, your goal is to find the parameters of line using linear regression, ridge regression and lasso regression respectively. Plot all three lines overlaid with original training and test data in a single figure and use legends to label the three lines in the figure. Show training and test sets in two different colors in that figure.
* In order to see how the three lines fit the training and test set, calculate the sum of square residuals of the three lines with the training and test set respectively and display the 6 values in a tabulated form.