- Zip all your files and label the zip file as **[Roll number in lower case]_hw1.zip**
- The scripts will be executed and compared against the submitted PDF file.
- Submit a single zip file containing `.tex, .py, .pdf` and image files only.
- Each figure should have a description about it in the text.

1. Write a function that performs regression analysis on a given dataset.
2. Perform linear regression using $y = mx + c$, and for each of the three datasets, use only the first 50 points, 100 points, and 200 points, respectively.
3. Create a table for each data set where the rows are 50, 100 and 200, and the columns indicate the values of m and c, and based on the values, infer the nature of the data provided.
4. Do you think a better model would work instead of a linear curve? Which one? Why?
5. Plot the data on a scatter plot and a line for the model (line to be above the scatter data). Support your previous inference.