* The code file is named as Code.py. It is a python file made using **VS Code.** We suggest using VS Code for smooth running as it was working fine on it on our systems.
* Please mention the path of the readings of x[n] and y[n] (in the form of CSV file) under the code file in line 5(Mentioned Below). Please change the text in red with the required path, without altering the inverted commas(‘ ‘).
* data = pd.read\_csv (r'C:\Users\Desktop\EE\Final SNS\data.csv')#mention the  path for csv file here

Please make sure that the x[n] and y[n] columns of the data file are labelled as ‘x[n]’ and ‘y[n]’ respectively in the csv file. We have attached a data.csv file too in zip, it can be also used.

* Python Libraries Used:
* Pandas: In order to extract data from csv file.
* Cmath: As Fourier Transform involves Complex terms, and inbuilt python algebra doesn’t support it, it was required to use this library.
* Matplotlib.pyplot: In order to visualize graphs. (Optional)

Please ensure that the first 2 python libraries are installed.

Note that library Matplotlib can be avoided being used, the code will just run fine. In such a case please remove lines 3 and 183:

* import matplotlib.pyplot as plt
* plots(y\_n,x\_n,Xn\_1,Xn\_2)
* The code would run by pressing the run button in the IDE or using the F5 button in case of VS Code.
* The output format is as follows:
* First two lists print denoting x1[n] and x2[n] respectively, whose kth index corresponds to x1[k] and x2[k] respectively.
* Following 5 lines will print errors in case of y[n], x1[n] and x2[n]. It also prints error by excluding the first 3 terms and last 4 terms, reasons explained in the report. Note that Error is calculated in terms of its MSE (mean-squared error) Value.