Indian Institute of Technology Bombay

EP219 Data analysis and interpretation
Assignment 1
Dated : 7 - 27 - 2017

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**Before coming to class**

1. Take a look at the text file Complete_TAVG_daily.txt that shows the daily temperature data from 1880-2014. This file shows the average land temperature fluctuations over the entire earth. Understand the format the data is stored in.
2. If you want to learn more about this climate change study take a look at www.berkeleyearth.org

**During class**

1. Extract the full data set to a numpy array. To this array add a column which shows the actual temperature on that day.
2. Make a histogram of the temperature distribution for the year 1912. Repeat this for the year 2012.
3. Make a plot of average temperature versus year for every 3rd year between 1880 and 2014.

**After class**

1. Make an error bar plot of temperature versus year. Show the standard deviation of the temperature of a given year as the 'error' of the temperature for that year.
2. Add all plots to your report along with a discussion. Upload your code and report to your website by Friday, August 4th at 10 am.

**Notes:**

- Make sure python 2.7/2.8 is installed. We will prefer this to python 3 for this course.
- Make sure to label all your plots, axes etc. Install latex so that you can use latex symbols in the plot legends.
- Try to experiment with histogram bins, axes range, colors, linestyles, plot markers, displaying multiple plots on the same image, saving plots to pdfs etc.
- Comment your code with detailed comments! Uncommented code will receive no credit.
- Try to follow best programming practices in python. https://gist.github.com/sloria/7001839