##Sourcecode

import pandas as pd

import numpy as np

import matplotlib.pyplot as plt

%matplotlib notebook

df1 = pd.read\_csv('data/C2A2\_data/BinnedCsvs\_d25/391a2922ad597ba080f4b99dea6d62842562d64845ef5df1a384561e.csv')

minimum = []

maximum = []

month = []

df1 = df1[~(df1['Date'].str.endswith(r'02-29'))]

times1 = pd.DatetimeIndex(df1['Date'])

df = df1[times1.year != 2015]

times = pd.DatetimeIndex(df['Date'])

for j in df.groupby([times.month, times.day]):

minimum.append(min(j[1]['Data\_Value']))

maximum.append(max(j[1]['Data\_Value']))

df2015 = df1[times1.year == 2015]

times2015 = pd.DatetimeIndex(df2015['Date'])

minimum2015 = []

maximum2015 = []

for j in df2015.groupby([times2015.month, times2015.day]):

minimum2015.append(min(j[1]['Data\_Value']))

maximum2015.append(max(j[1]['Data\_Value']))

minaxis = []

maxaxis = []

minvals = []

maxvals = []

for i in range(len(minimum)):

if((minimum[i] - minimum2015[i]) > 0):

minaxis.append(i)

minvals.append(minimum2015[i])

if((maximum[i] - maximum2015[i]) < 0):

maxaxis.append(i)

maxvals.append(maximum2015[i])

plt.figure()

colors = ['green', 'red']

plt.plot(minimum, c='green', alpha = 0.5, label = 'Minimum Temperature (2005-14)')

plt.plot(maximum, c ='red', alpha = 0.5, label = 'Maximum Temperature (2005-14)')

plt.scatter(minaxis, minvals, s = 10, c = 'blue', label = 'Record Break Minimum (2015)')

plt.scatter(maxaxis, maxvals, s = 10, c = 'black', label = 'Record Break Maximum (2015)')

plt.gca().fill\_between(range(len(minimum)),

minimum, maximum,

facecolor='blue',

alpha=0.25)

plt.ylim(-300, 600)

plt.legend(loc = 8, frameon=False, title='Temperature', fontsize=8)

plt.xticks( np.linspace(15,15 + 30\*11 , num = 12), (r'Jan', r'Feb', r'Mar', r'Apr', r'May', r'Jun', r'Jul', r'Aug', r'Sep', r'Oct', r'Nov', r'Dec') )

plt.xlabel('Months of year')

plt.ylabel('Temperature (tenths of degrees C)')

plt.title(r'Temperature Summary plot Noida')

plt.show()