**Assignment**

Hint:

import pandas as pd

import numpy as np

import matplotlib.pyplot as plt

from pandas.tools.plotting import

autocorrelation\_plot from

statsmodels.graphics.tsaplots import plot\_pacf

from statsmodels.tsa.arima\_model import ARIMA, ARMAResults

import datetime

import sys

import seaborn as sns

import statsmodels

import statsmodels.stats.diagnostic as diag

from statsmodels.tsa.stattools import adfuller

from scipy.stats.mstats import normaltest

from matplotlib.pyplot import acorr

plt.style.use('fivethirtyeight')

%matplotlib inline

df = pd.read\_csv('C:/Users/Downloads/sp500/data\_stocks.csv')

df.head()

**Problem Statement:**

Pick up the following stocks and generate forecasts accordingly

Stocks:

1. NASDAQ.AAPL

2. NASDAQ.ADP

3. NASDAQ.CBOE

4. NASDAQ.CSCO

5. NASDAQ.EBAY

**Task:**Deploy this assignment in any cloud platform.(Try to look for free cloud platform)

**Assignment:** Submit assignment’s deployable link only.

***# import needful libraries***

**import pandas as pd**

**import statsmodels.api as sm**

**import matplotlib.pyplot as plt**

***# Read dataset***

**sales\_data = pd.read\_csv('sales.csv')**

***# Setting figure size***

**plt.figure(figsize=(10,6))**

***# Plot original sales data***

**plt.plot(sales\_data['Time'], sales\_data['Sales'], label="Sales-Original")**

***# Rotate xlabels***

**plt.xticks(rotation=60)**

***# Add legends***

**plt.legend()**

***#display the plot***

**plt.show()**

***# Moving average with window 3***

**sales\_data['3MA']=sales\_data['Sales'].rolling(window=3).mean()**

***# Moving average with window 5***

**sales\_data['5MA']=sales\_data['Sales'].rolling(window=5).mean()**

***# Setting figure size***

**plt.figure(figsize=(10,6))**

***# Plot original sales data***

**plt.plot(sales\_data['Time'], sales\_data['Sales'], label="Sales-Original", color="blue")**

***# Plot 3-Moving Average of sales data***

**plt.plot(sales\_data['Time'], sales\_data['3MA'], label="3-Moving Average(3MA)", color="green")**

***# Plot 5-Moving Average of sales data***

**plt.plot(sales\_data['Time'], sales\_data['5MA'], label="5-Moving Average(5MA)", color="red")**

***# Rotate xlabels***

**plt.xticks(rotation=60)**

***# Add legends***

**plt.legend()**

***#display the plot***

**plt.show()**

**Window Function**

***# import needful libraries***

**import pandas as pd**

**import statsmodels.api as sm**

**import matplotlib.pyplot as plt**

***# Read dataset***

**sales\_data = pd.read\_csv('sales.csv', index\_col ="Time")**

***# Show initial 5 records***

**sales\_data.head()**

***# Apply all the windows on given DataFrame***

**sales\_data['boxcar']=sales\_data.Sales.rolling(3, win\_type ='boxcar').mean()**

**sales\_data['triang']=sales\_data.Sales.rolling(3, win\_type ='triang').mean()**

**sales\_data['hamming']=sales\_data.Sales.rolling(3, win\_type ='hamming').mean()**

**sales\_data['blackman']=sales\_data.Sales.rolling(3, win\_type ='blackman').mean()**

***#Plot the rolling mean of all the windows***

**sales\_data.plot(kind='line',figsize=(10,6)**