import pandas\_datareader as pdr  
import datetime  
#import pandas as pd  
  
  
def getStock(stk):  
 # Set and show dates.  
 dt = datetime.date.today()  
 dtPast = dt + datetime.timedelta(-days)  
  
 print("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*")  
 print("Daily Percent Changes \_ " + str(dt) + " to " + str(dtPast) + " \*" + str(stk).upper() + "\*")  
 print("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*")  
 # Call Yahoo finance to get stock data for the stock provided.  
 df = pdr.get\_data\_yahoo(stk,  
 start= datetime.datetime(dtPast.year, dtPast.month, dtPast.day),  
 end = datetime.datetime(dt.year, dt.month, dt.day))  
 # Return a dataframe containing stock data to the calling instruction.  
 return df  
  
# Function for Calculating Daily Volume Percent Change  
def calculateDailyVolumePercentChange(df):  
 for i in range(0, len(df)):  
 if i == 0:  
 df.iat[i, 6] = 0  
 else:  
 currentDayVolume = df.iloc[i]['Volume']  
 previousDayVolume = df.iloc[i - 1]['Volume']  
 df.iat[i, 6] = (currentDayVolume - previousDayVolume) / previousDayVolume  
 return df  
  
# Function for Calculating Daily Close Price Percent Change  
def calculateDailyClosePercentChange(df):  
 #print(df.keys())  
  
 for i in range(0, len(df)):  
 if i == 0:  
 df.iat[i, 7] = 0  
 else:  
 currentDayClosePrice = df.iloc[i]['Close']  
 previousDayClosePrice = df.iloc[i - 1]['Close']  
 df.iat[i, 7] = (currentDayClosePrice - previousDayClosePrice) / previousDayClosePrice  
 return df  
  
# Main Body  
  
  
endProgram = True  
while endProgram:  
 print("-------------------------------------------------")  
 print("Stock Report Menu Options")  
 print("-------------------------------------------------")  
 print("1. Report changes for a stock")  
 print("2. Quit")  
  
 # Asking user if he wants to continue  
 userChoice = input()  
 if userChoice == "1":  
 print("Please enter the stock symbol:")  
 stk = input()  
 print("Please enter the number of days for the analysis:")  
 days = int(input())  
 df = getStock(stk)  
  
  
 # Adding 2 new Columns with 0 vlaue  
 df['Volume % Change'] = 0.0  
 df['Close % Change'] = 0.0  
  
 # Calculating Daily Volume Percent Change  
 calculateDailyVolumePercentChange(df)  
  
 # Calculating Daily Close Percent Change  
 calculateDailyClosePercentChange(df)  
  
  
 # Selecting Required Columns  
 newColumnList = ['Close', 'Volume', 'Volume % Change', 'Close % Change']  
 df = df[newColumnList]  
 print(df)  
 print("------------------------------------------------------------")  
 print("Summary of Cumulative Changes for" + " " +stk.upper())  
 print("------------------------------------------------------------")  
 print(str(datetime.date.today())+ " to "+ str(datetime.date.today() - datetime.timedelta(days)))  
  
  
 # Calculating Cumulative Figures  
 periodEndVolume = df['Volume'][len(df) - 1]  
 periodStartVolume = df['Volume'][0]  
 percentVolumeChange = ((periodEndVolume - periodStartVolume) / periodStartVolume)  
 print("% Volume Change: " + str(round(percentVolumeChange,3)))  
  
  
 periodEndClosePrice = df['Close'][len(df) - 1]  
 periodStartClosePrice = df['Close'][0]  
 percentClosePriceChange = (periodEndClosePrice - periodStartClosePrice) / periodStartClosePrice  
 print("% Close Price Change: "+ str(round(percentClosePriceChange,3)))  
  
  
 else:  
 endProgram = False  
 break