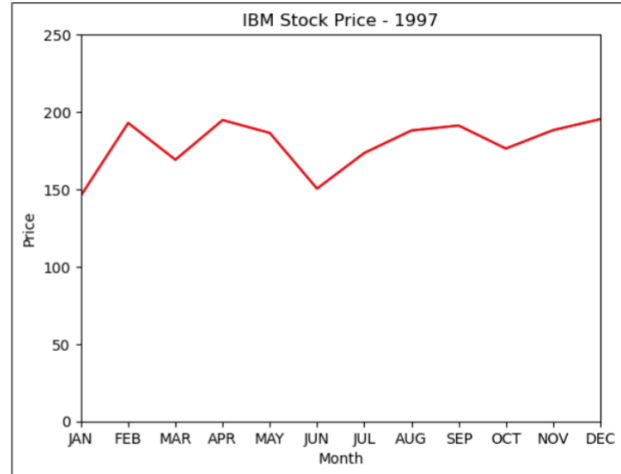


Class 9 - August 5th Notes

Ex 1: The pyplot Stack

```
import matplotlib.pyplot as plt
def main():
    y_price =
    x_date =
    plt.plot(x,y,color=)
    plt.xlim(xmin=,xmax=)
    plt.ylim(ymin=,ymax=)
    plt.xticks([tick list],[label list])
    plt.title()
    plt.xlabel()
    plt.ylabel()
    plt.show()

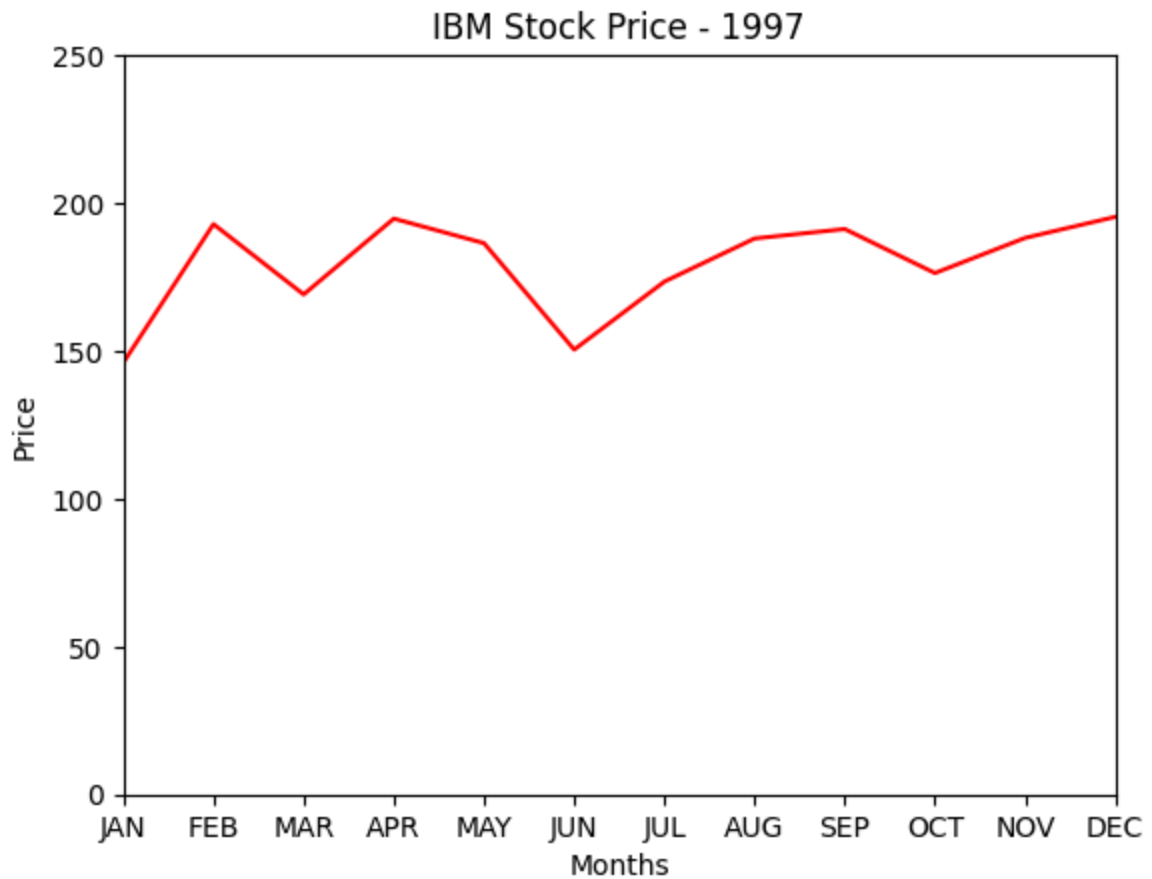
main()
```



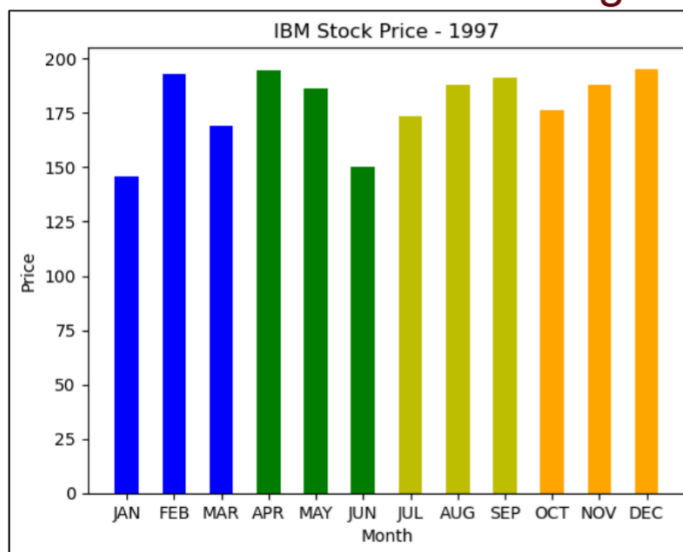
```
In [42]: #Demo2 Stock Price
import matplotlib.pyplot as plt

def main():
    y_price = [146.02,192.88,169.10,194.74,186.44,150.44,173.44,188.02,191.22,176.3
    x_date = [1,2,3,4,5,6,7,8,9,10,11,12]
    plt.plot(x_date, y_price, color='r')
    plt.xticks([1,2,3,4,5,6,7,8,9,10,11,12],['JAN','FEB','MAR','APR','MAY','JUN','J
    plt.xlim(xmin=1, xmax=12)
    plt.ylim(ymin=0, ymax=250)
    plt.title("IBM Stock Price - 1997")
    plt.xlabel("Months")
    plt.ylabel("Price")
    plt.show()

main()
```



Ex 2: Create the Following



*Pass the colors through
`plt.bar()`*

hint: orange = 'orange'

```
In [17]: #Demo2 Stock Price
import matplotlib.pyplot as plt

def main():
    y_price = [146.02,192.88,169.10,194.74,186.44,150.44,173.44,188.02,191.22,176.3
    x_date = [1,2,3,4,5,6,7,8,9,10,11,12]
```

```

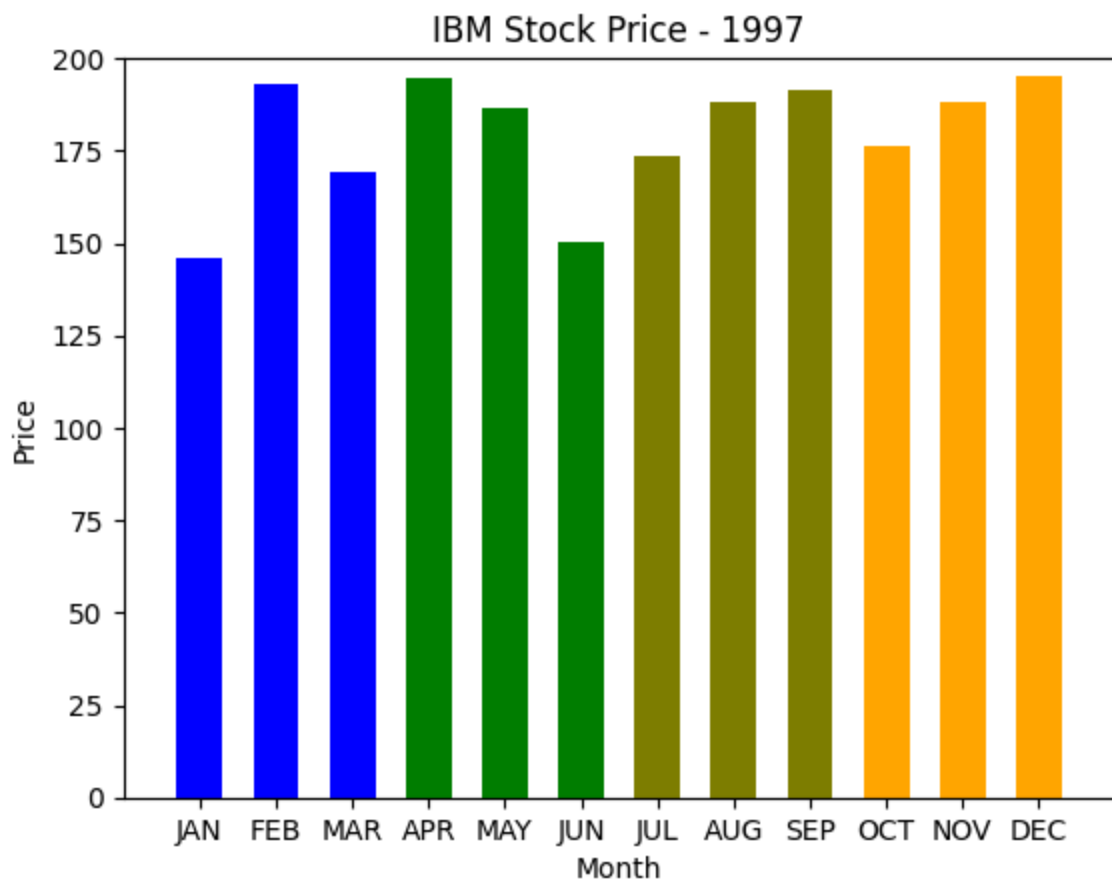
# Define colors for each bar to match the image
colors = ['blue', 'blue', 'blue', 'green', 'green', 'green',
          'olive', 'olive', 'olive', 'orange', 'orange', 'orange']

# Change from plot() to bar() and pass the colors
plt.bar(x_date, y_price, color=colors, width=0.6)

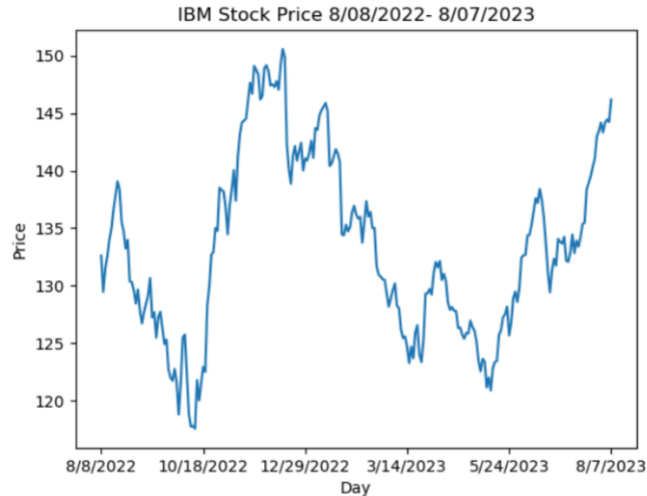
plt.xticks([1,2,3,4,5,6,7,8,9,10,11,12],['JAN','FEB','MAR','APR','MAY','JUN','J
plt.xlim(xmin=0, xmax=13) # Adjust xlim for better bar spacing
plt.ylim(ymin=0, ymax=200) # Adjust ylim to match the image
plt.title("IBM Stock Price - 1997")
plt.xlabel("Month") # Change to "Month" (singular)
plt.ylabel("Price")
plt.show()

main()

```

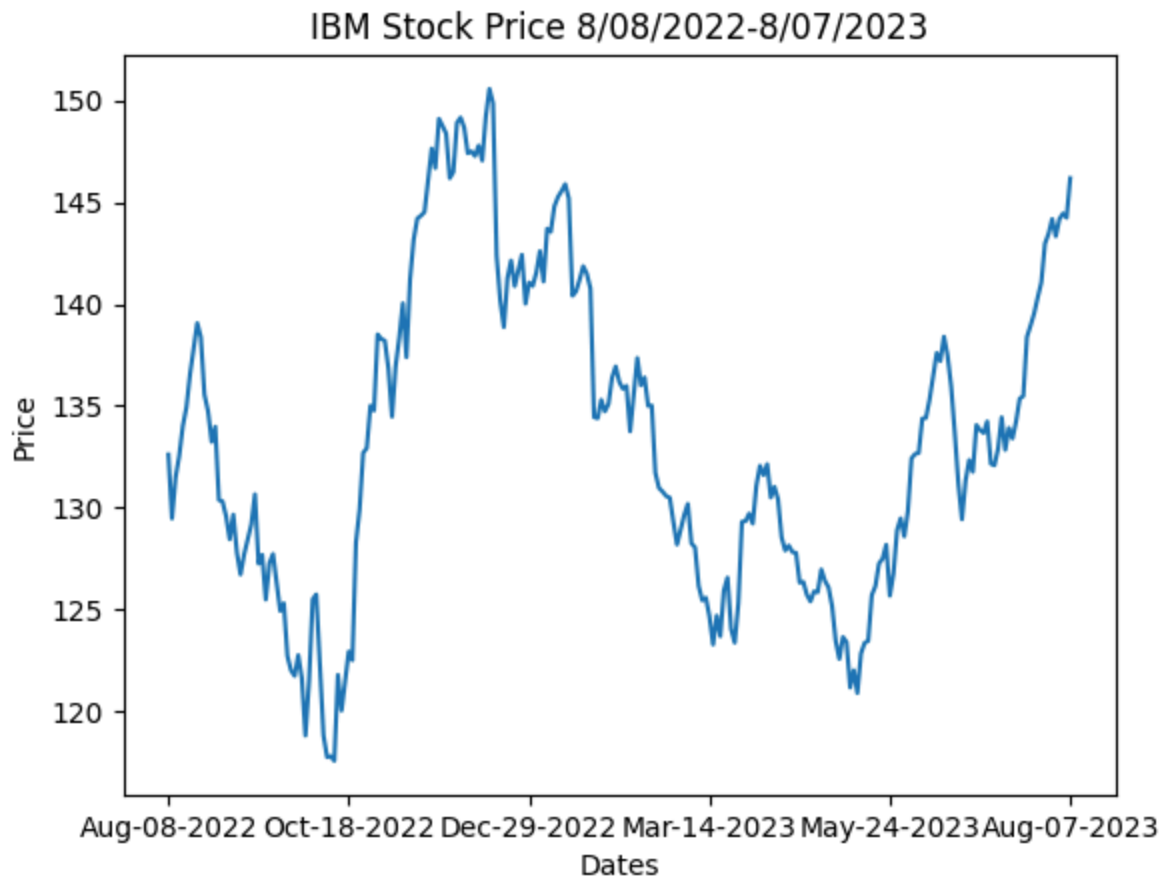


Ex. 3 Pandas and Visualizations



- Ex 3: Import a stock of your choice into a panda data frame and plot closing price vs. day
 - `df.plot(x=Date, Y=Close, title = 'Title', legend='')`
- Yahoo! Finance – Historical Data – yr - download

```
In [18]: #Demo 5 Panda Line Chart
import pandas as pd
import matplotlib.pyplot as plt
ibm_df = pd.read_csv("IBM2022-23.csv")
ibm_df.plot(x='Dates', y= "International Business Machines Corporation (NYSE:IBM) -
plt.xlabel("Dates")
plt.ylabel("Price")
plt.savefig('ibm2022-23.jpg')
```



Practise

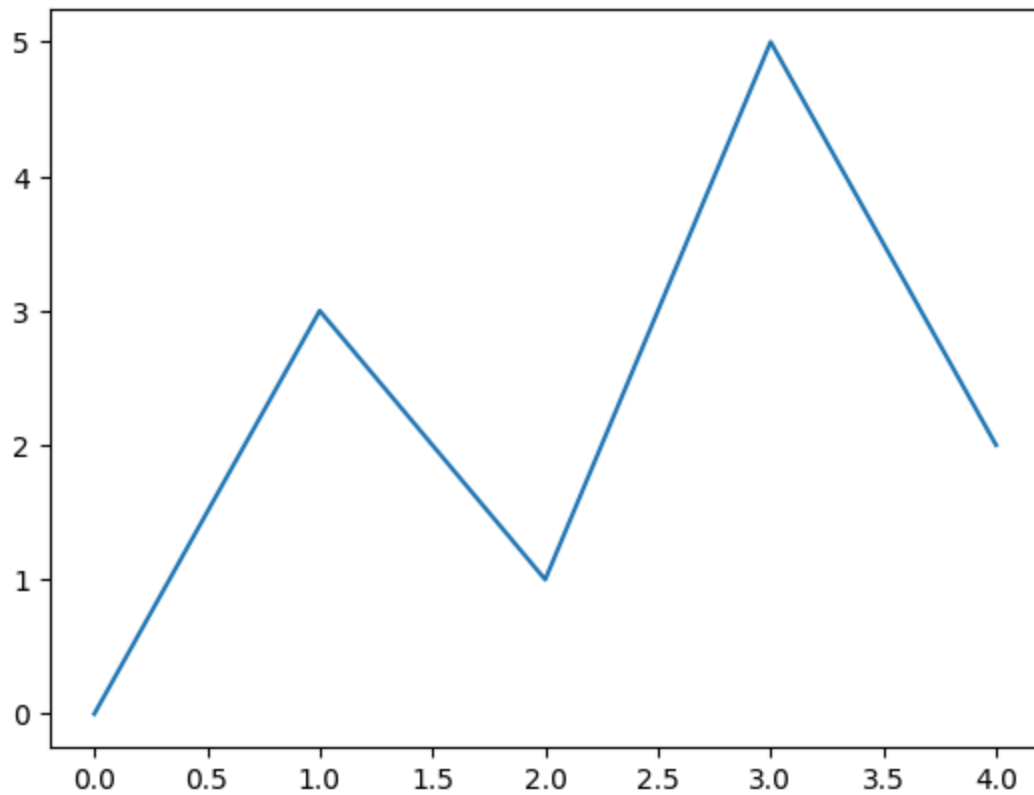
```
In [22]: # Demo 1 This program displays a simple line graph.
import matplotlib.pyplot as plt

def main():
    # Create Lists with the X and Y coordinates of each data point.
    x_coors = [0, 1, 2, 3, 4]
    y_coors = [0, 3, 1, 5, 2]

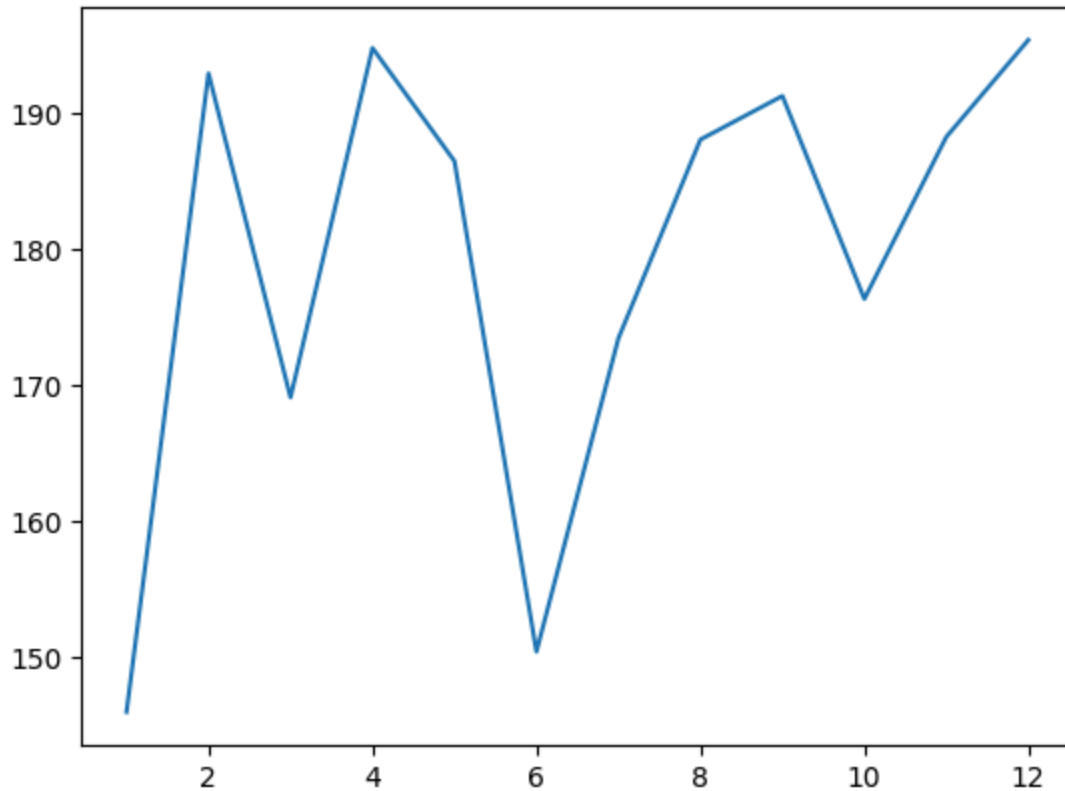
    # Build the line graph.
    plt.plot(x_coors, y_coors)

    # Display the line graph.
    plt.show()

# Call the main function.
main()
```



```
In [25]: #Demo2 Stock Price
import matplotlib.pyplot as plt
y_price = [146.02,192.88,169.10,194.74,186.44,150.44,173.44,188.02,191.22,176.33,18
x_date = [1,2,3,4,5,6,7,8,9,10,11,12]
plt.plot(x_date, y_price)
plt.show()
```



```
In [30]: # Demo 1 This program displays a simple line graph.
import matplotlib.pyplot as plt

def main():
    # Create Lists with the X and Y coordinates of each data point.
    x_coors = [0, 1, 2, 3, 4]
    y_coors = [0, 3, 1, 5, 2]

    # Build the Line graph, change color and style of line
    y=plt.plot(x_coors, y_coors,color='violet',linewidth=5,linestyle='--')

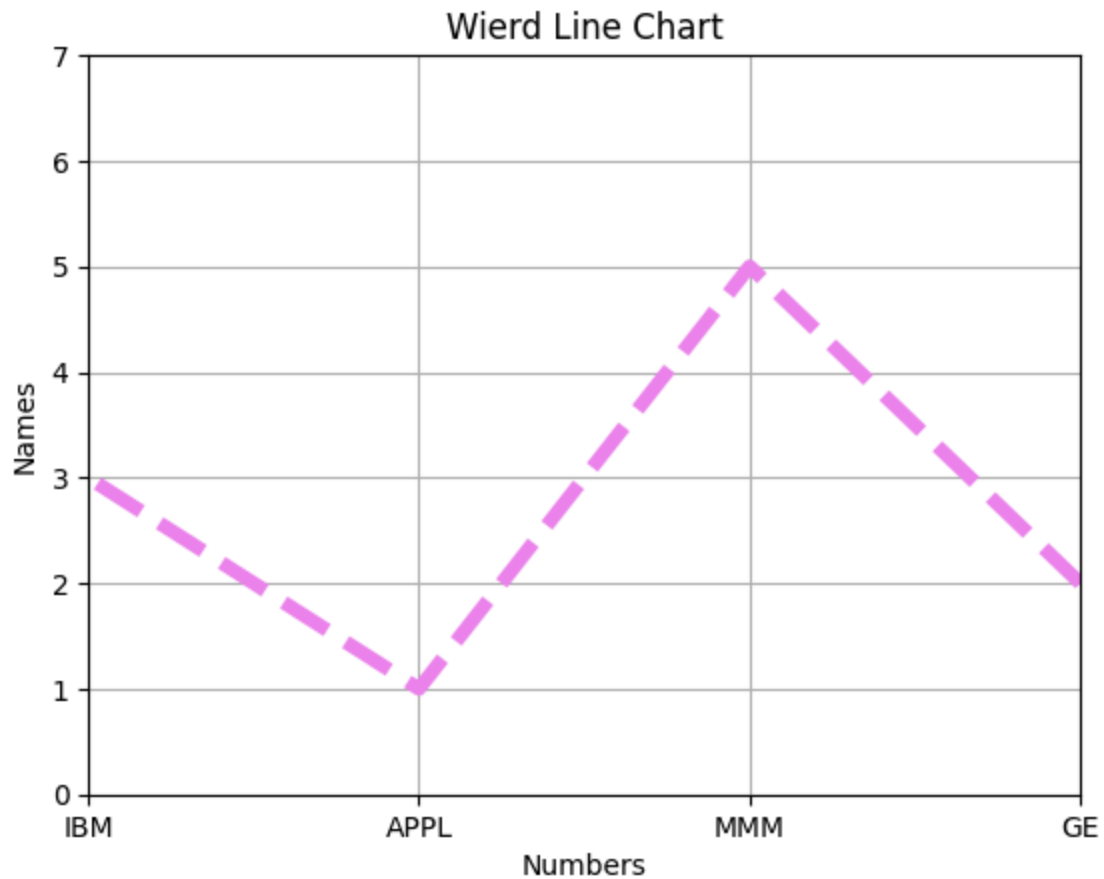
    #Change axis Limits
    plt.xlim(xmin=1,xmax=4)
    plt.ylim(ymin=0,ymax=7)

    plt.grid(True)

    #Title and axis lables
    plt.title('Wierd Line Chart')
    plt.xlabel('Numbers')
    plt.ylabel('Names')
    #Change Name for X axis Tick Marks
    plt.xticks([1,2,3,4],['IBM','APPL','MMM','GE'])

    # Display the Line graph.
    plt.show()

# Call the main function.
main()
```



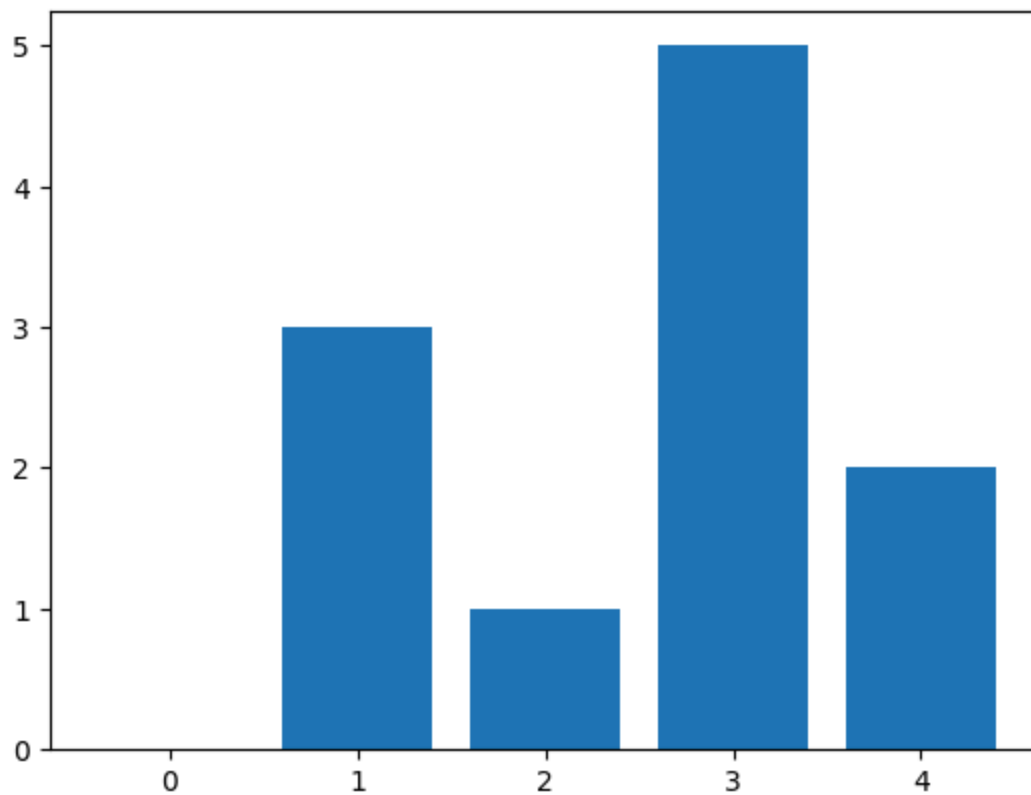
```
In [33]: # Demo 4 This program displays a simple bar graph.
import matplotlib.pyplot as plt

def main():
    # Create lists with the X and Y coordinates of each data point.
    x_coors = [0, 1, 2, 3, 4]
    y_coors = [0, 3, 1, 5, 2]

    # Build the bar graph.
    plt.bar(x_coors, y_coors)

    # Display the bar graph.
    plt.show()

# Call the main function.
main()
```

```
In [ ]: #Demo 5 Panda Line Chart
import pandas as pd
import matplotlib.pyplot as plt
ibm_df = pd.read_csv("IBM_23.csv")
ibm_df.plot(x='Date',y= "Close")
plt.savefig('ibm.jpg')
```

