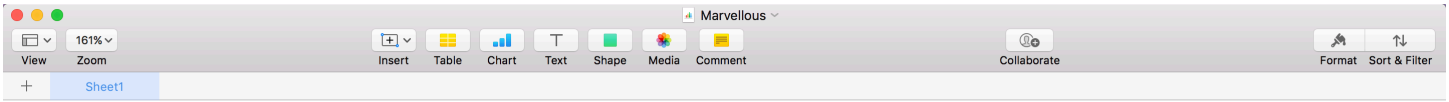
Python Plotting Applications using Matplotlib Library

Matplotlib is a plotting library for the Python programming language and its numerical mathematics extension NumPy.
It provides an object-oriented APIfor embedding plots into applications using general-purpose GUI toolkits like Tkinter, wxPython, Qt, or GTK+.
There is also a procedural "pylab" interface based on a state machine (like OpenGL), designed to closely resemble that of MATLAB, though its use is discouraged. SciPy makes use of Matplotlib.

Application 1:
Application to demonstrate use of Matplotlib library for plotting.

```
import pandas as pd
import matplotlib.pyplot as plt

excel_file = 'Marvellous.xlsx'
data = pd.read_excel(excel_file)

print("All data from excel file")
print(data)

print("First 5 rows from file")
print(data.head())

print("First 4 rows from file")
print(data.head(4))

print("Last 5 rows from file")
print(data.tail(3))

print("Last 4 rows from file")
print(data.tail(4))

print(data.shape)

Sorted_data =  data.sort_values(['Name'], ascending=False)
print("Sorted data")
print(Sorted_data)

data['Age'].plot(kind="hist")
plt.show()

data['Age'].plot(kind="barh")
plt.show()

```

Excel file which is refereed in above application is



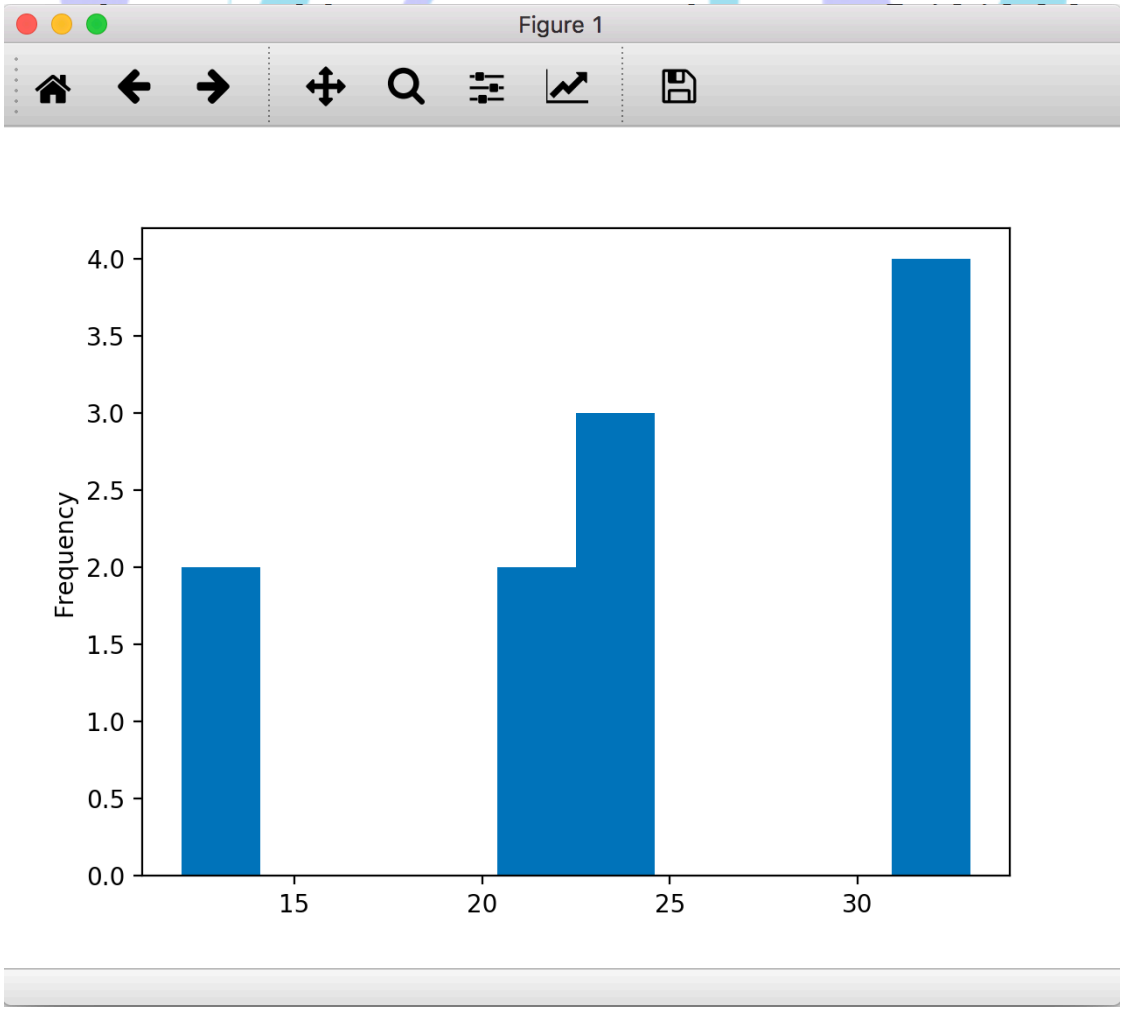
Name	College	Mail ID	Age
Amit	PVG	123@gmail.com	23
Omkar	Indira	omkar@gmail.com	21
Hitesh	Pune University	hitesh@gmail.com	32
Jayesh	Singhagad	123@gmail.com	12
Sagar	FC	sagar@ymail.com	23
Sushil	Modern	123@gmail.com	32
Ketan	PVG	123@gmail.com	32
Bhushan	DY Patil	123@gmail.com	12
Piyush	PVG	123@gmail.com	22
Deven	Indira	123@gmail.com	33
Umesh	Mumbai University	123@gmail.com	24

Output of above application :

```
abc — -bash — 51×20
(base) MacBook-Pro-de-MARVELLOUS:abc marvellous$ python3 PandasAll.py
All data from excel file
        Name  ...  Age
0       Amit  ...   23
1      Omkar  ...   21
2     Hitesh  ...   32
3     Jayesh  ...   12
4      Sagar  ...   23
5     Sushil  ...   32
6      Ketan  ...   32
7    Bhushan  ...   12
8     Piyush  ...   22
9      Deven  ...   33
10     Umesh  ...   24

[11 rows x 4 columns]
First 5 rows from file
      Name           College             Mail ID  Age
0     Amit               PVG     123@gmail.com   23
1    Omkar            Indira    omkar@gmail.com   21
2   Hitesh  Pune University   hitesh@gmail.com   32
3   Jayesh         Singhagad     123@gmail.com   12
4    Sagar                FC    sagar@ymail.com   23
First 4 rows from file
      Name           College             Mail ID  Age
0     Amit               PVG     123@gmail.com   23
1    Omkar            Indira    omkar@gmail.com   21
2   Hitesh  Pune University   hitesh@gmail.com   32
3   Jayesh         Singhagad     123@gmail.com   12
Last 5 rows from file
        Name           College             Mail ID  Age
8     Piyush               PVG   123@gmail.com   22
9      Deven            Indira   123@gmail.com   33
10     Umesh  Mumbai University   123@gmail.com   24
```

```
Last 4 rows from file
        Name                College          Mail ID  Age
7    Bhushan              DY Patil  123@gmail.com   12
8     Piyush                   PVG  123@gmail.com   22
9      Deven                Indira  123@gmail.com   33
10     Umesh  Mumbai University  123@gmail.com   24
(11, 4)
Sorted data
        Name  ...  Age
10     Umesh  ...   24
5     Sushil  ...   32
4      Sagar  ...   23
8     Piyush  ...   22
1      Omkar  ...   21
6      Ketan  ...   32
3     Jayesh  ...   12
2     Hitesh  ...   32
9      Deven  ...   33
7    Bhushan  ...   12
0       Amit  ...   23
```

Plotting by Matplotlib library based on Age column.



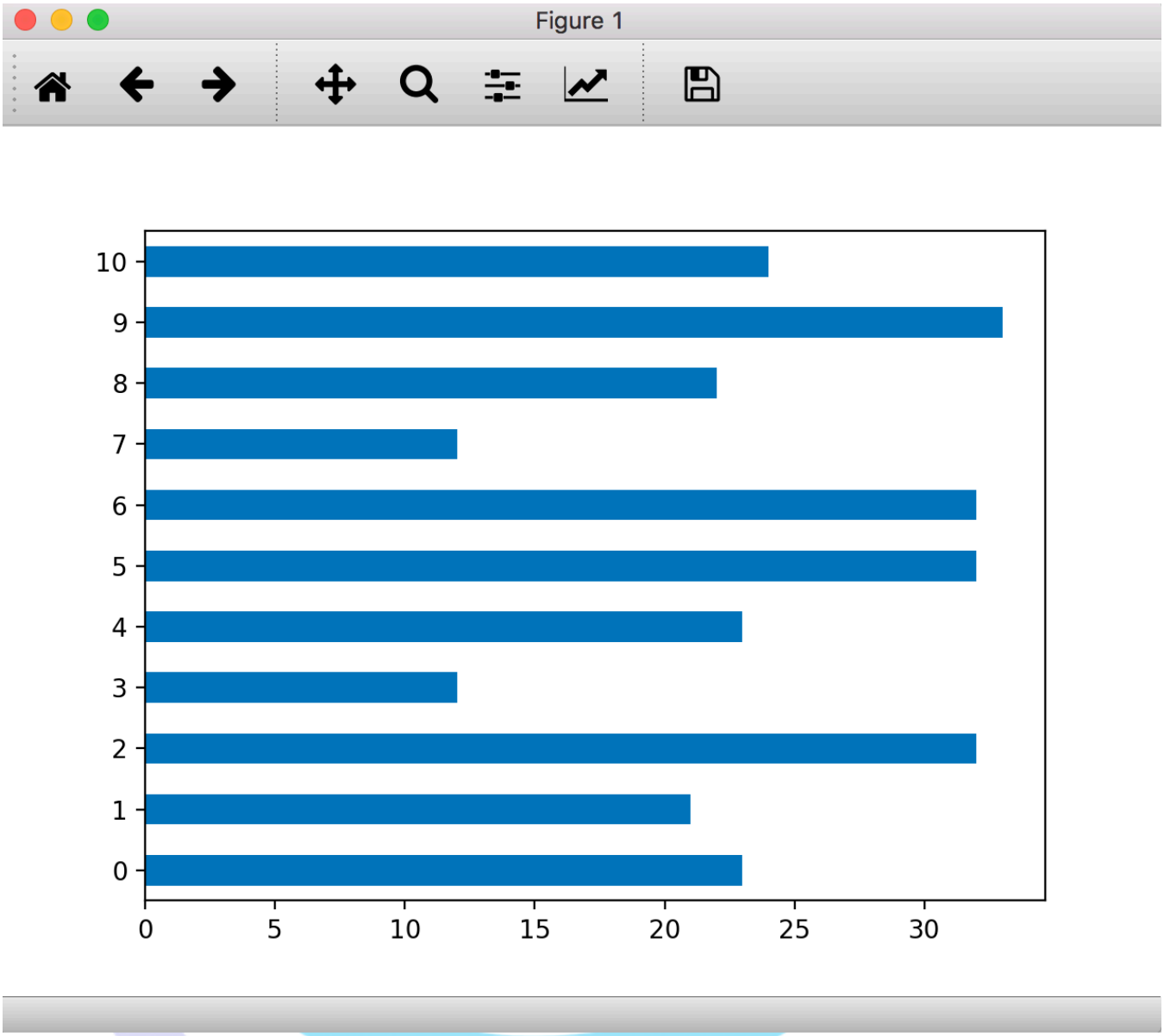


Figure 1
10
9
8
7
6
5
4
3
2
1
0
0
5
10
15
20
25
30