NumPy - Histogram Using Matplotlib

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NumPy has a **numpy.histogram()** function that is a graphical representation of the frequency distribution of data. Rectangles of equal horizontal size corresponding to class interval called **bin** and **variable height** corresponding to frequency.

numpy.histogram()

The numpy.histogram() function takes the input array and bins as two parameters. The successive elements in bin array act as the boundary of each bin.

```
import numpy as np

a = np.array([22,87,5,43,56,73,55,54,11,20,51,5,79,31,27])
np.histogram(a,bins = [0,20,40,60,80,100])
hist,bins = np.histogram(a,bins = [0,20,40,60,80,100])
print hist
print bins
```

It will produce the following output –

```
[3 4 5 2 1]
[0 20 40 60 80 100]
```

plt()

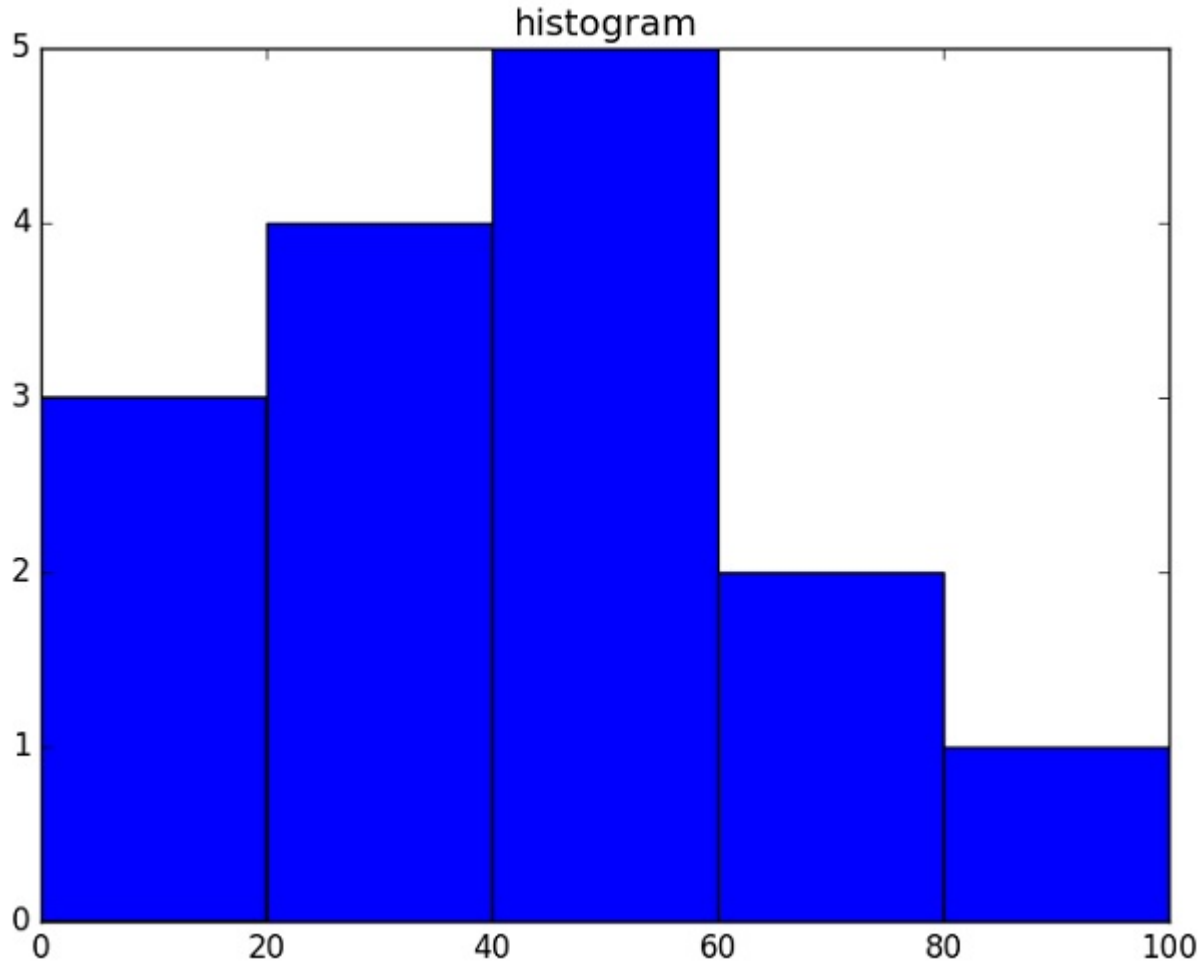
Matplotlib can convert this numeric representation of histogram into a graph. The **plt() function** of pyplot submodule takes the array containing the data and bin array as parameters and converts into a histogram.

```
from matplotlib import pyplot as plt
import numpy as np

a = np.array([22,87,5,43,56,73,55,54,11,20,51,5,79,31,27])
plt.hist(a, bins = [0,20,40,60,80,100])
```

```
plt.title("histogram")
plt.show()
```

It should produce the following output –



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