Numerical Recipes

2014 Dept Physics and Astronomy

How to plot a set of numbers in a simple frequency histogram

This is a utility (not a lecture)

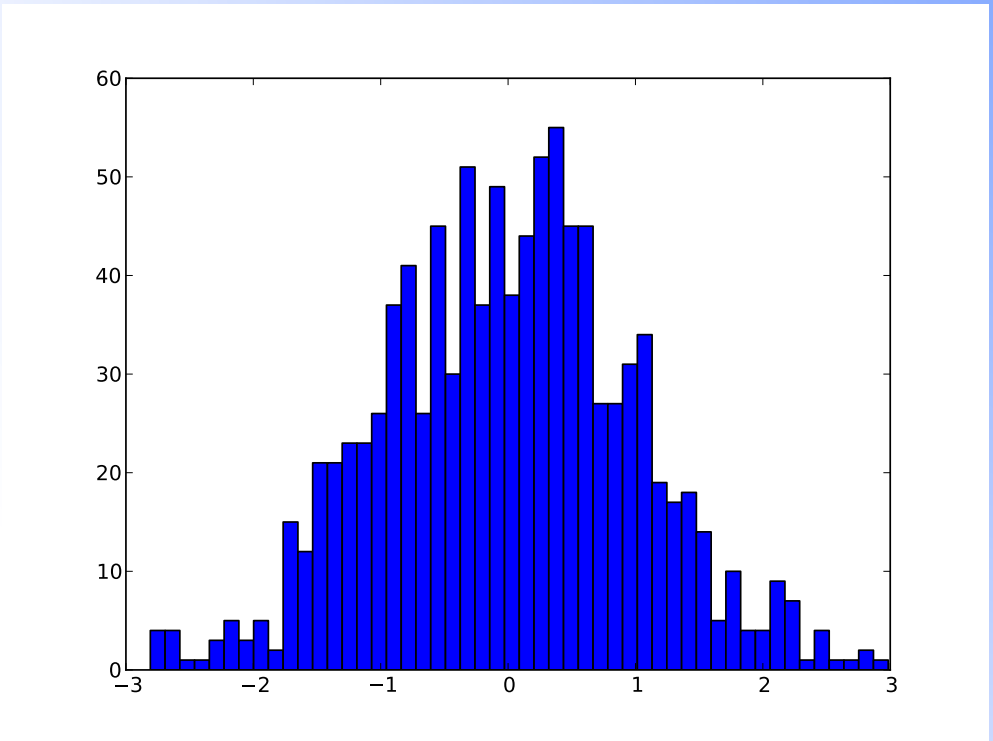
- You are all free to use any plotting/histogramming tool you wish. But this is on your own responsibility to understand the tool. This is not taught in this course, and it is not examined in this course.
- For the purposes of this course we only care about the simplest way of plotting results from the exercises
- Plotting histograms in java (and c++) is unnecessarily complicated.
- ...so we have made a very simply utility for you. It is called MyPlot.py
- Actually it is a python script but the java programmers don't need to care about what is in it

- The interface from the java to the plotting utility is via a text file
- You should write out the numbers you want to plot into a text file from your java program using MyFileWriter utility
- This is in $NUMREPROOT/MyUtilities/java/
- Here is a code fragment

```
// Create an instance of the file writer
MyFileWriter fw =  new MyFileWriter( ) ;

// Make and fill an array with the data you want
Matrix A(n,m) ;

.... fill the elements of A

// Write the matrix out to a file
fw.writeFile( "outputFileName.txt", A ) ;
```

- If you just have a single column of numbers, so make a 1-D array Matrix(1,0)
- For example look in
  - $NUMREPROOT/MyUtilities/java/TestMyIO.java

- Then you just plot this text file using the command:
  - python $NUMREPROOT/MyUtilities/Plotting/MyPlot.py outputFileName.txt
- This is the type of plot it gives you:



- The python utility is the file called MyPlot.py You can copy it into your own directory if you like, and use it from there. If you do this all you need to do is
  - python MyPlot.py outputFileName.txt