

Installing gnuplot and Using gnuplot

You may have gnuplot already installed on your machine. You can test this the same way we tested for g++:

```
which gnuplot
```

If it returns a path, you have gnuplot installed! If not, use your favorite package manager to install it. I'm an Ubuntu user, so I had to run:

```
sudo apt-get install gnuplot
```

If you're on a different distribution, you'll probably need to use `yum`, or some GUI tool. On Mac OS X, an optional package manager is Brew: <http://brew.sh/>, which will help you out.

By looking around on stackoverflow, I found a sample brew install command:

```
brew install gnuplot --wx --cairo --pdf --with-x --tutorial
```

Which will let you output PDFs as well as to the screen (that's the whole `with-x` and `wx`), I imagine. If you get stuck, let us know!

To test out gnuplot in OS X or Linux, run:

```
gnuplot
```

from the terminal. This will put you in an interactive gnuplot terminal.

Gunplot Light

You can of course Google gnuplot and find out more than anyone needs to know! A few useful commands:

```
# Hashes aren't for twitter, they're for comments in gnuplot!
plot sin(x) # plot the sine function
f(x) = cos(x) # assign a function
plot sin(x), f(x) # plot two functions at once.
set xrange [0:2] # change the x axis.
set yrange [-2:2] # change the y axis range.
replot # update the plot with your new axis.
set yrange [-5:-2] # change the y axis range again.
replot # you won't see anything! So do...
reset # ... because you've messed up!
set xrange [-1:1]
plot x*sin(1/x) # This will look really bad!
set samples 1000 # sample the function more frequently.
replot # it should look a lot better now
```

```

help      #get syntax inside gnuplot
exit # and we're done!

```

So now you can have fun fitting and saving a figure, Try this on our sorted data for the find exercise

```

plot "Sorted100.txt"      #plot out in column format
f(x) = a + b*x + c*x*x    #parameterize fitting funciont.
fit f(x) "Sorted100.txt" via a,b,c
set term postscript color  #one option that gives a .ps figure
set output "SillyFit.eps"  #one option that gives a .ps figure
replot                    #one option that gives a .ps figure
set term x11               #return to interactive view.
                           #On linux, you may need ''wxt'' instead of x11

```

The fit was

Final set of parameters		Asymptotic Standard Error	
=====		=====	
a	= -27217.6	+/- 5164	(18.97%)
b	= 11715	+/- 238.7	(2.037%)
c	= -19.3785	+/- 2.309	(11.92%)

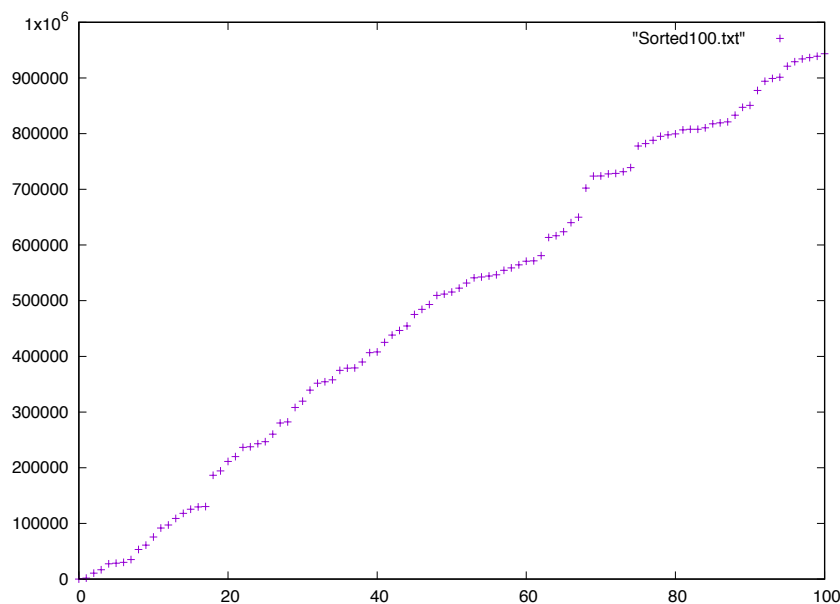


Figure 1: The plot looks pretty nice.