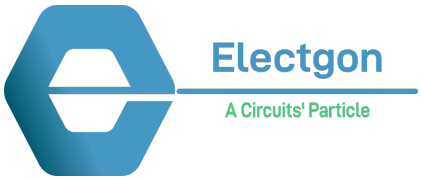

GNUPLOT

Quick Guide

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21.06.2018

Contents

1 Installing

Install gnuplot in linux using

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

the following package is also needed to display output graphs

```
$sudo apt-get install gnuplot-x11
```

2 Launch Gnuplot

In terminal window type gnuplot. There are some defined functions in gnuplot that you can work with directly.

Function	Returns
abs(x)	absolute value of x, |x|
acos(x)	arc-cosine of x
asin(x)	arc-sine of x
atan(x)	arc-tangent of x
cos(x)	cosine of x, x is in radians.
cosh(x)	hyperbolic cosine of x, x is in radians
erf(x)	error function of x
exp(x)	exponential function of x, base e
inverf(x)	inverse error function of x
invnorm(x)	inverse normal distribution of x
log(x)	log of x, base e
log10(x)	log of x, base 10
norm(x)	normal Gaussian distribution function
rand(x)	pseudo-random number generator
sgn(x)	1 if x > 0, -1 if x < 0, 0 if x=0
sin(x)	sine of x, x is in radians
sinh(x)	hyperbolic sine of x, x is in radians
sqrt(x)	the square root of x
tan(x)	tangent of x, x is in radians
tanh(x)	hyperbolic tangent of x, x is in radians
Bessel, gamma, ibeta, igamma, and lgamma functions are also supported. Many functions can take complex arguments. Binary and unary operators are also supported.	

Table 1: Predefined Gnuplot Functions [1]

So you can use any of these functions to make operations or to plot it.

```
$gnuplot> plot sin(x)/x
```

this will plot sin(x)/x with x has default range values [-5:5] to draw for another range type

```
$gnuplot> plot [-15:15] sin(x)/x
```

you can control range of display graph by defining it as:

```
$gnuplot> set xrange [0:5]
$gnuplot> set yrange [-1:1]
$gnuplot> replot
```

3 Plotting Data From File

Assume you have the following data is stored in a text file called data.txt

1	30
2	35
3	40
4	45
5	50
6	55
7	60
8	65
9	70
10	75
11	80
12	85

To plot this data type

```
$gnuplot> plot “data.”txt using 1:2 with steps
```

Where data.txt is the file that contains this data, **using 1:2** tells the gnuplot to draw column 2 against column 1, **with steps** this to draw it as shown in steps; other options is **with lines** or **with dots** or **with points** or **with impulses**.

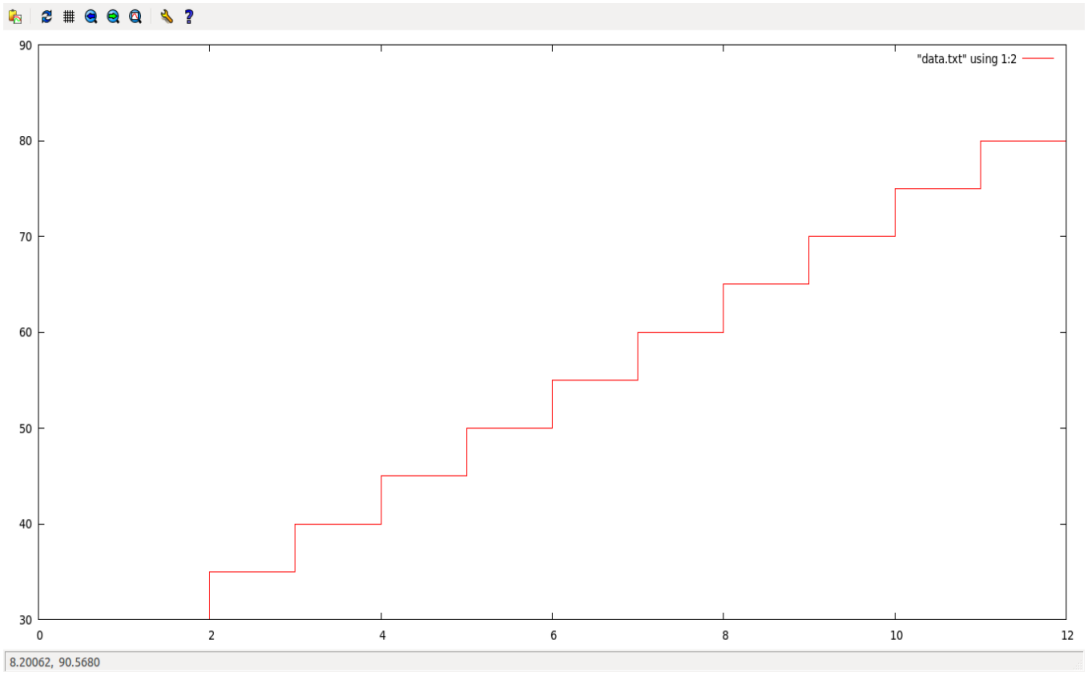

Figure 1: Plot File Data

You can display the grid by

```
$gnuplot> set grid
```

Or you can also display grid at subvalues using

```
$gnuplot> set mxtics 5
$gnuplot> set mytics 5
$gnuplot> set grid xtics ytics mxtics mytics
```

To erase it

```
$gnuplot> set grid noxtics noytics
```

Bibliography

[1] http://people.duke.edu/~hpgavin/gnuplot.html

[2] https://web.archive.org/web/20121029110317/http://t16web.lanl.gov/Kawano/gnuplot/index-e.html