gnuplotpy Documentation

Release 0.2

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CHAPTER 1

Introduction

The documentation for gnuplotpy. Gnuplotpy facilitates communicating to Gnuplot from Python, namely passing Python variables and data to Gnuplot scripts.

CHAPTER 2

Examples

Two example scripts.

2.1 Example 1

2.1.1 Code

```
import numpy as np
import gnuplotpy as gp

amplitude = 3.
x = np.linspace(0., 2*3.14, 100)
y = amplitude*np.sin(x)

args = {
    'the_title': 'Example 1',
    'amp': amplitude,
    'x_max': x[-1],
    'filename': 'example1.png'
}
data = [x, y]
gp.gnuplot('test.gpi', args, data)
```

```
set datafile separator ','
set term pngcairo size 20cm,20cm
set out filename

unset key
set grid
set border lw 1.5

set title the_title
```

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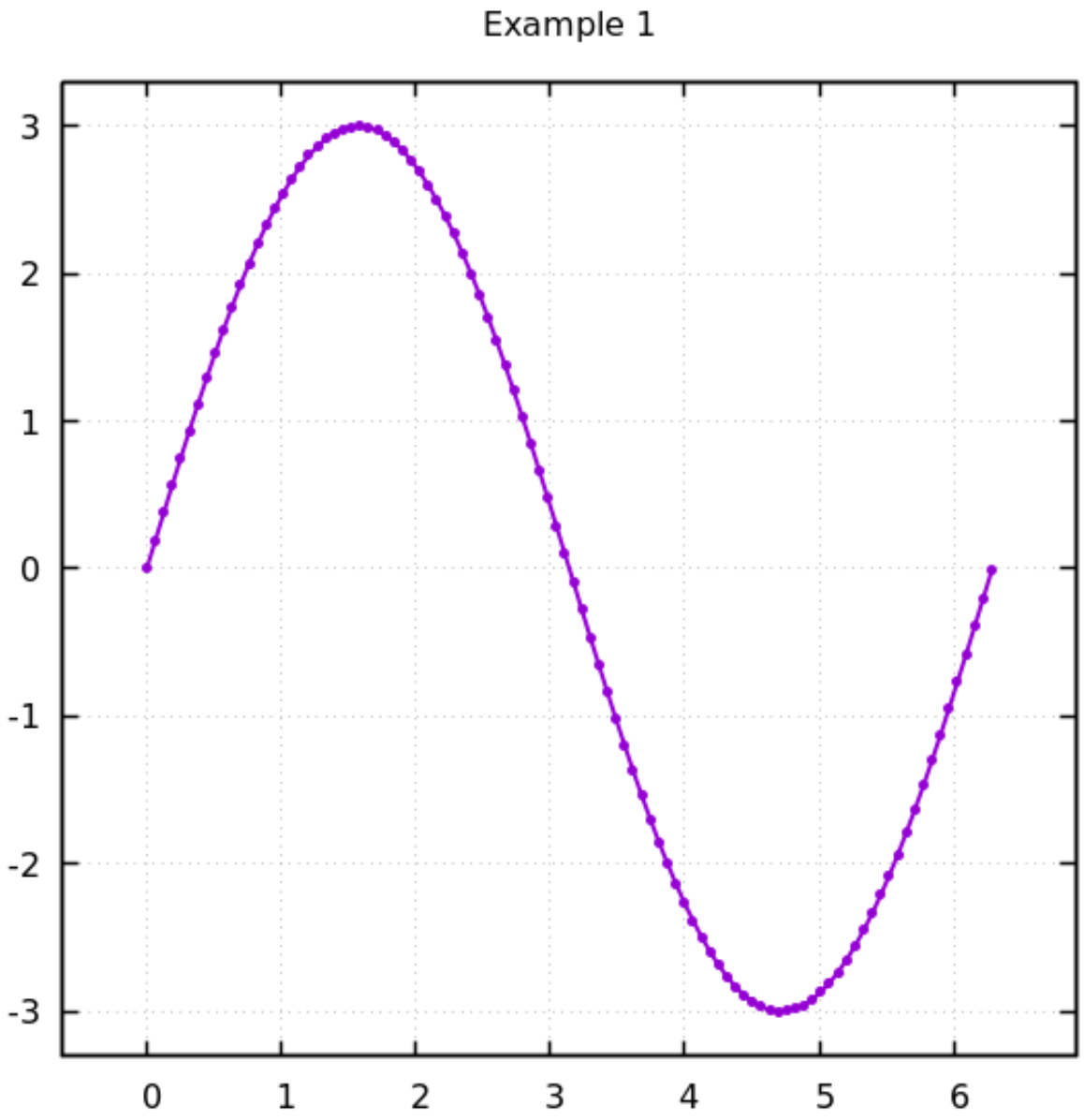
```
set xrange [x_max-1.1*x_max:x_max*1.1]
set yrange [-1.1*amp:1.1*amp]

plot data u 1:2 w lp pt 7 ps 0.5 lw 2

set out
```

2.1.2 Output



2.2 Example 2

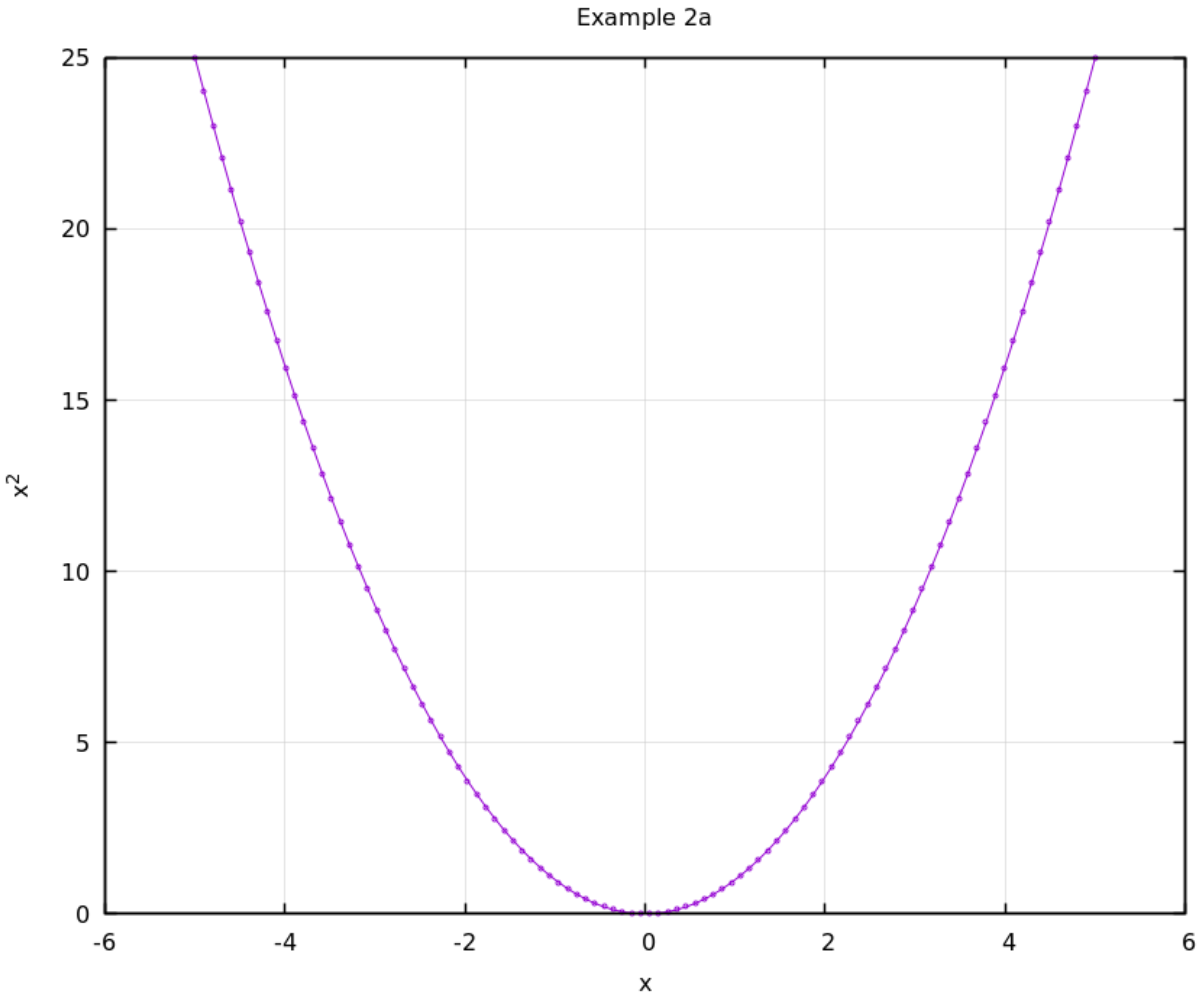
2.2.1 Code

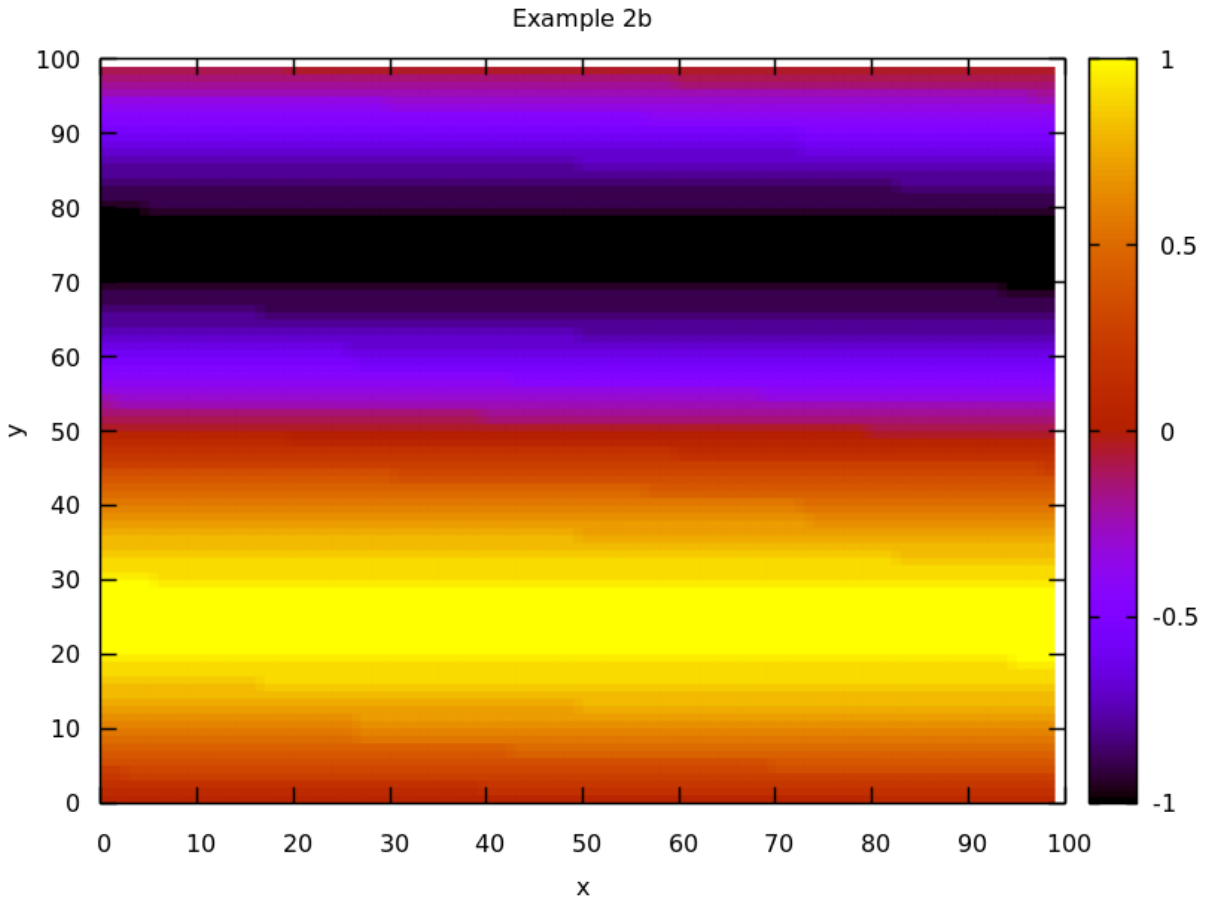
```
import numpy as np
import gnuplotpy as gp

x = np.linspace(-5, 5, 100)
y = x**2
gp.gnuplot_2d(x, y, 'example2a.png', 'Example 2a', 'x', 'x^2')

z = np.linspace(0., 2.*np.pi, 10000)
z = z.reshape(100, 100)
z = np.round(np.sin(z), 1)
gp.gnuplot_3d_matrix(z, 'example2b.png', 'Example 2b', 'x', 'y')
```

2.2.2 Output




Example 2b
100
90
80
70
60
50
40
30
20
10
0
y
0
10
20
30
40
50
60
70
80
90
100
x
1
0.5
0
-0.5
-1

CHAPTER 3

API

3.1 Functions

gnuplot(script_name[, args_dict, data, silent])	Call a Gnuplot script, passing it arguments and datasets.
gnuplot_2d(x, y, filename[, title, x_label, ...])	Function to produce a general 2D plot.
gnuplot_3d(x, y, z, filename[, title, ...])	Function to produce a general 3D plot.
gnuplot_3d_matrix(z_matrix, filename[, ...])	Function to produce a general 3D plot from a 2D matrix.
trim_pad_image(filename[, padding])	Trims and pads an image.

3.1.1 gnuplot

gnuplot(*script_name*, *args_dict={}*, *data=[]*, *silent=True*)

Call a Gnuplot script, passing it arguments and datasets.

Parameters

- **scipt_name** (*str*) – The name of the Gnuplot script.
- **args_dict** (*dict*) – A dictionary of parameters to pass to the script. The *key* is the name of the variable that the *item* will be passed to the Gnuplot script with.
- **data** (*list*) – A list of lists containing lists to be plotted. The lists can be accessed by plotting the variable *data* in the Gnuplot script. The first list in the list of lists corresponds to the first column in data, and so on.
- **silent** (*bool*) – *True* if Gnuplot stdout should be silenced, *False* if not.

Returns The Gnuplot command used to call the script.

Return type str

3.1.2 gnuplot_2d

gnuplot_2d(*x*, *y*, *filename*, *title=''*, *x_label=''*, *y_label=''*)
Function to produce a general 2D plot.

Parameters

- **x** (*list*) – x points.
- **y** (*list*) – y points.
- **filename** (*str*) – Filename of the output image.
- **title** (*str*) – Title of the plot. Default is '' (no title).
- **x_label** (*str*) – x-axis label.
- **y_label** (*str*) – y-axis label.

3.1.3 gnuplot_3d

gnuplot_3d(*x*, *y*, *z*, *filename*, *title=''*, *x_label=''*, *y_label=''*, *z_label=''*)
Function to produce a general 3D plot.

Parameters

- **x** (*list*) – x points.
- **y** (*list*) – y points.
- **z** (*list*) – z points.
- **filename** (*str*) – Filename of the output image.
- **title** (*str*) – Title of the plot. Default is '' (no title).
- **x_label** (*str*) – x-axis label.
- **y_label** (*str*) – y-axis label.
- **z_label** (*str*) – z-axis label.

3.1.4 gnuplot_3d_matrix

gnuplot_3d_matrix(*z_matrix*, *filename*, *title=''*, *x_label=''*, *y_label=''*)
Function to produce a general 3D plot from a 2D matrix.

Parameters

- **z_matrix** (*list*) – 2D matrix.
- **filename** (*str*) – Filename of the output image.
- **title** (*str*) – Title of the plot. Default is '' (no title).
- **x_label** (*str*) – x-axis label.
- **y_label** (*str*) – y-axis label.

3.1.5 trim_pad_image

trim_pad_image(*filename*, *padding=20*)
Trims and pads an image.

Parameters

- **filename** (*str*) – The filename of the image to be acted on.
- **padding** (*int*) – The number of pixels in padding to add to the image after the image has been trimmed.

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