

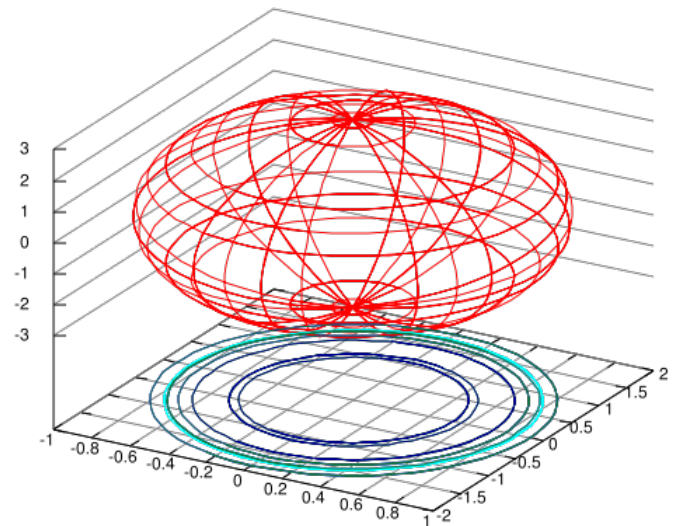
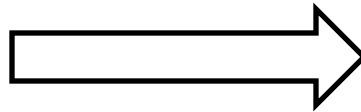
# Gnuplot Tutorial

Advanced Systems Lab  
Fall 2015

# Gnuplot 101

- Gnuplot is a command line tool for generating 2D and 3D plots of your data
- Works on Linux and Windows
- Can be used in interactive or scripted mode

#	x	y	value
0.1	0.3	11	
0.4	-1.1	0.99	
2.3	1.0	0.97	



# How to organize your data?

- Output your experimental results as a comma/space/tab separated file

```
# x      value1 value2
0.1     0.3     11
0.4    -1.1     0.99
2.3     1.0     0.97
0.1    -0.1     1.8
```

- You can also include text

```
# category      x      value1 value2
First          0.1     0.3     11
Second         0.4    -1.1     0.99
Third          2.3     1.0     0.97
Fourth         0.1    -0.1     1.8
```

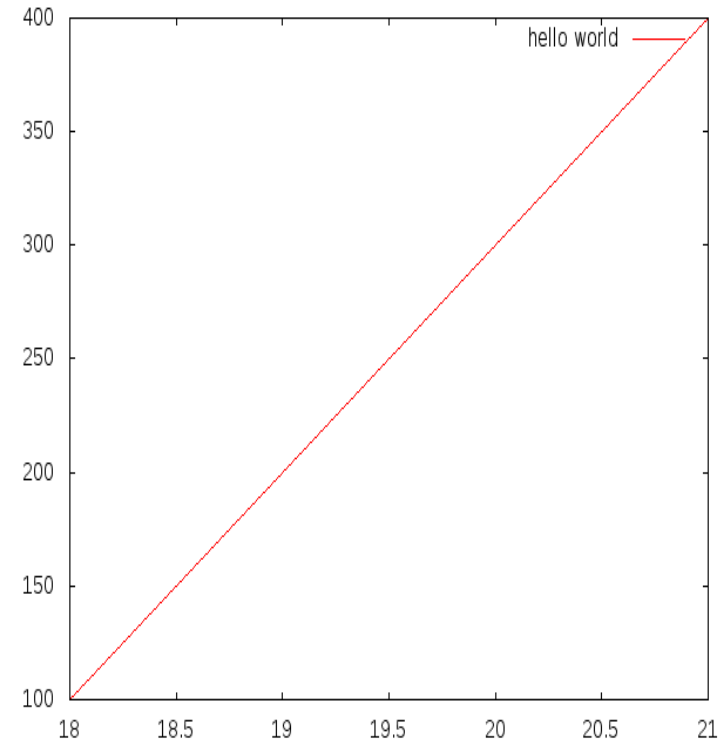
# Hello world

- Start Gnuplot and type interactively, or create a text file with commands:

```
      1  2
#  age  income
    18  100
    19  200
    20  300
    21  400
```



```
plot "results.txt" using 1:2 with lines
title "hello world"
```



# Gnuplot scripts

- Plots are set up declaratively – see online documentation for all commands
- Start with `set term png/pdf/svg` to select the output type
- `set output "filename.png"`
- `set xlabel "x axis label"`
- `set ylabel "y axis label"`
- `plot "filename1" using 1:2 with lines title "first", \`  
`"filename2" using 1:3 with linespoints title "second"`

# Column values can be combined

- It is possible to plot simple expressions:
  - Plot “file.txt” using 1:(\$2+\$3+\$4) with lines title “summed columns”

<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>\$2+\$3+\$4</i>
# t	req_type1	req_type2	req_type3	
1	0	111	0	<i>111</i>
2	2	100	3	<i>105</i>
3	4	120	0	<i>124</i>
4	0	100	22	<i>122</i>
5	3	102	2	<i>107</i>

- You can also use other arithmetic operations as well!

# Recommendations

- As you progress, and rerun experiments save results in different files – you can regenerate graphs for different versions of the result
- Keep style consistent over graphs
- Use bash/batch script for exporting graphs!

# Further reading

- Check out the tutorial pdf on the course website
- Google is your friend
  - “gnuplot logscale y axis”
  - “gnuplot custom labels on x axis”
  - “gnuplot heatmap”
  - ...



# Plotting nice graphs

Essential for this course!

**DEMO!**