Version control using Git and Plotting Tutorial

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Why you should use version control

- Does this seem familiar?

  `finalx.tex, finalxFORREAL.tex, finalxIPromise.tex`
  `finalx!yespickme.tex`

What is Git?

- Git is the most used version control software in the world [1].

[1] REF

What is GitHub?

- Github is a cloud service for git which lets you store your repository online
- Why would you store your repository online?
  - Collaborative work
  - Working remotely
  -
  -

Making a repository

- You can do this online on the Github website
- Create a new repository
- Then click clone to get the url, open git on your computer and type: `git clone url`

Making a repository

- make a new repository, then go to the website and make a new folder
- go to the folder and right click git with bash
- You are now able to use bash for the rest of the talk!

Basic Git commands

- There are four[2] important commands you will need for git:
- `git pull`
- `git add`
- `git commit`
- `git push`

[1] I cheat here and write a bash script which does these in order so I only have to run 1 command.

Why Python?

- Python is popular, multi-platform and becoming a standard language[3]
- It is a good high level language to know, it is very flexible

[2]standard on most of the popular linux distributions

Python syntax

- As with every programming language we should figure out how to do *Hello, world!*

Open python and type:

```
print 'Hello, world!'
```

Plotting

- Python requires the `numpy` library[4] for a lot of basic maths functions and arrays.
- We are going to use the `matplotlib` library[5] for the remainder of this talk.

[3] http://www.numpy.org/

[4] https://matplotlib.org/api/_as_gen/matplotlib.pyplot.plot.html

Example 1, Plotting functions

- Go to the `src` folder and open `ex1functions.py`
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Example 1, Plotting functions

- figure
-

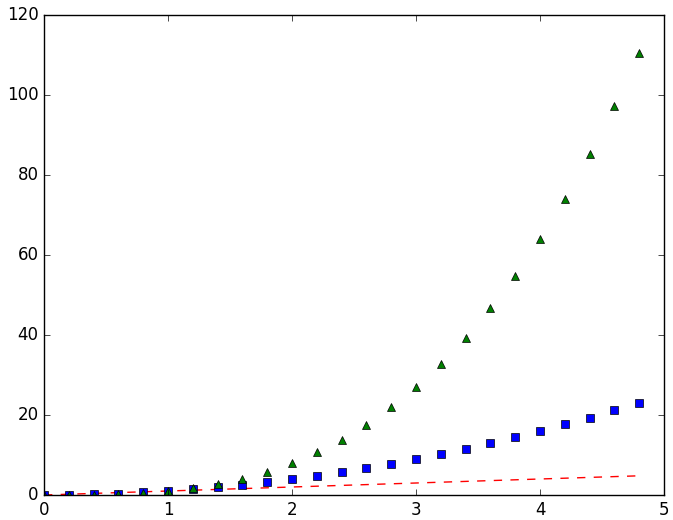

Figure: function plotting

Example 2, Complicated functions!

- In the `src` folder open `ex2compfunctions.py`
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Example 2, Complicated functions!

- Figures!
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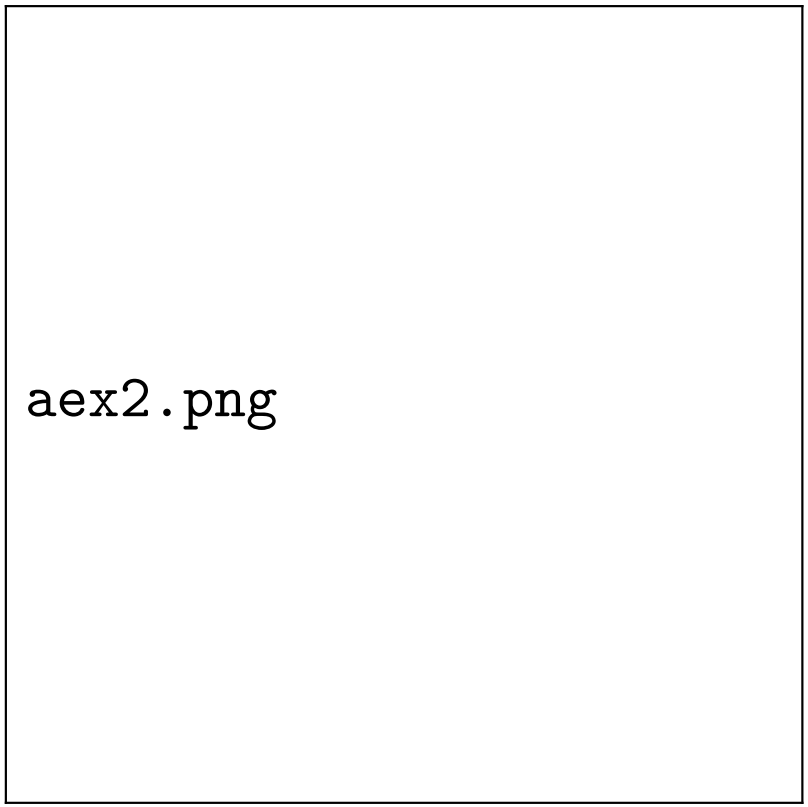

Figure: function plotting

Example 3, Plotting data!

- once again, in the `src` folder open `ex3data.py`
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Example 3, Plotting data!

- figure
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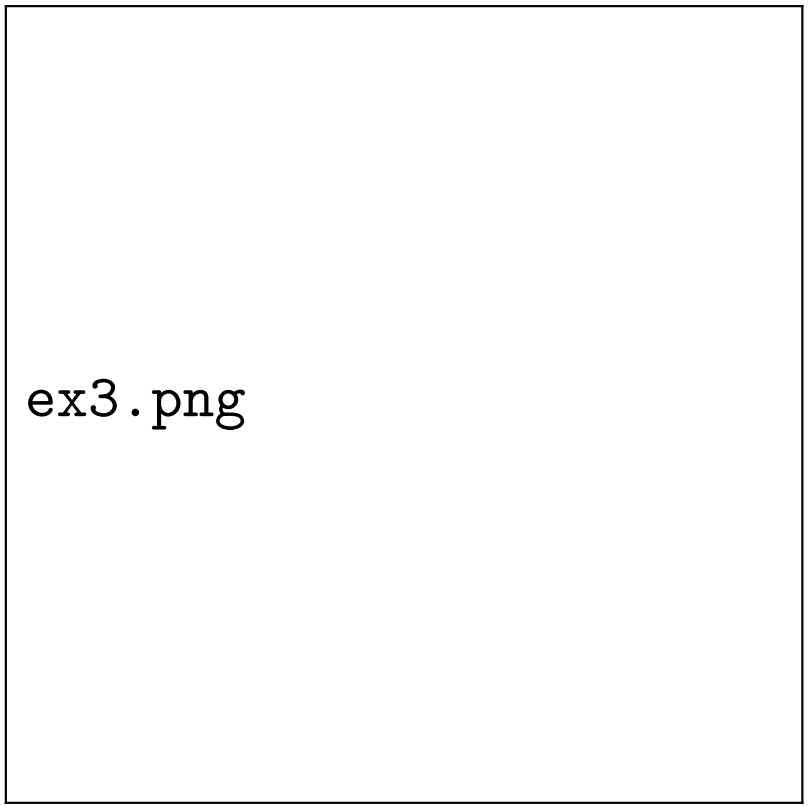

Figure: function plotting

Example 4, Histograms!

- once again, in the `src` folder open `ex4hist.py`
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Example 4, Histograms!

- figure
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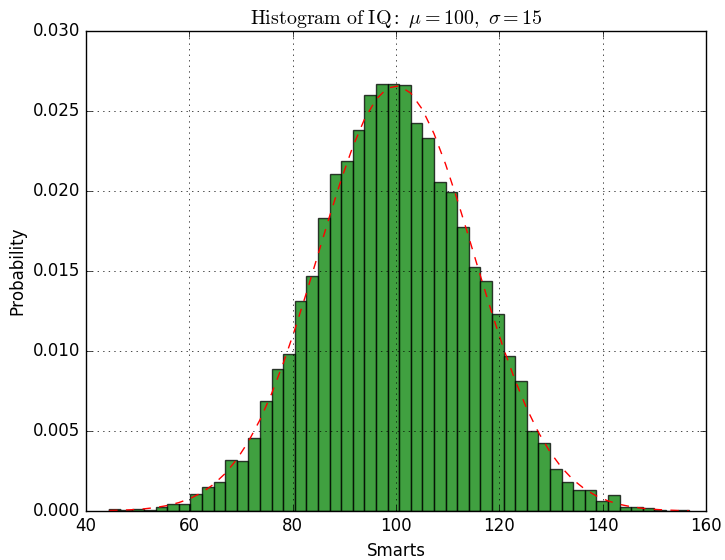

Figure: function plotting

Example 5, Subplots!

- In the `src` folder open `ex5subplots.py`
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Example 5, Subplots!

- Figures!
-

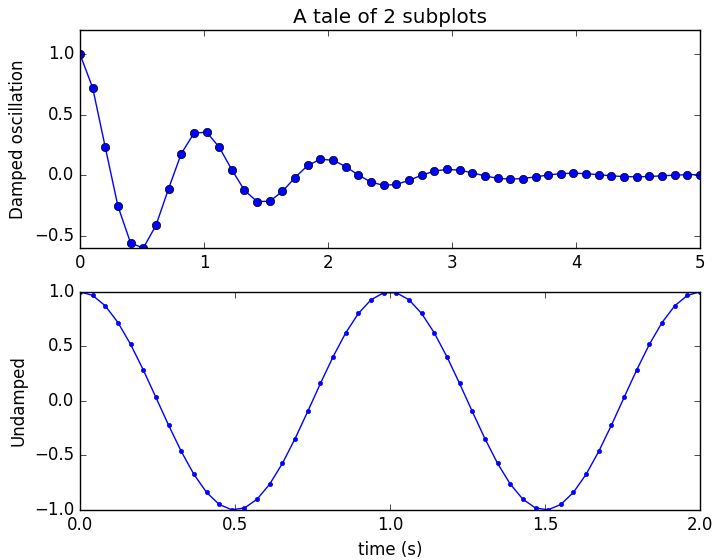

Figure: function plotting

Example 6, Art!

- In the `src` folder open `ex6art.py`
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Example 6, Art!

- Figures!
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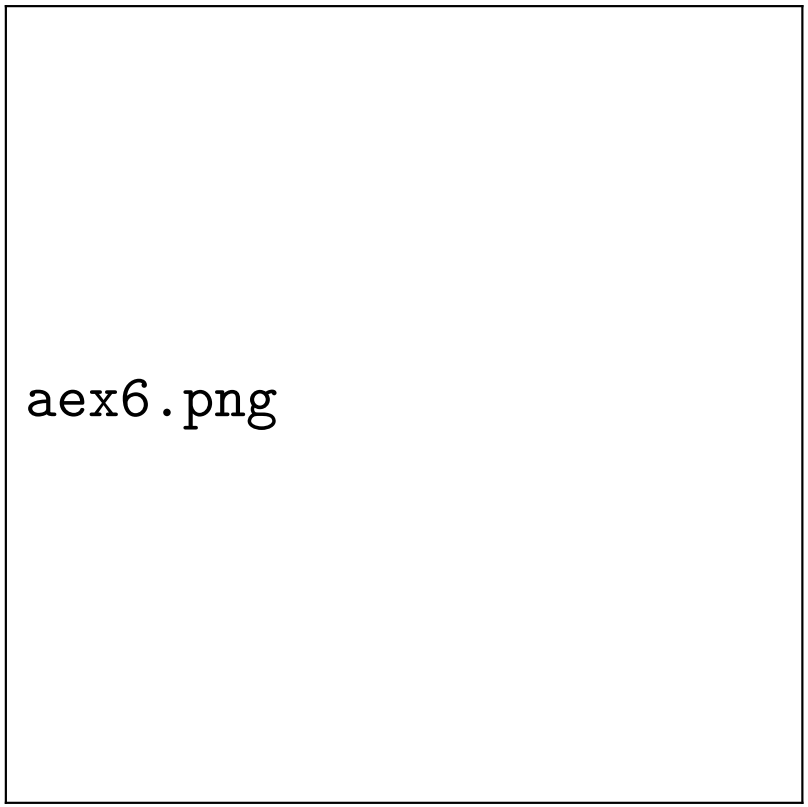

Figure: function plotting

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