

Using Python as a math shell

Python can be used as a MATLAB-like shell for math and stuff.

The following components are needed (in order of decreasing importance):

- IPython
- NumPy
- Matplotlib
- SciPy
- SymPy

IPython makes the Python shell behave more like tools such as MATLAB.

Creating IPython profile for math

We need to set up an IPython profile that automatically imports the aforementioned math-related libraries.

First, create a new IPython profile:

```
$ ipython profile create math
```

Then, add a startup script to this profile. Create a Python file in the startup directory, which is found at `~/.ipython/profile_math/startup`. In this file, import all the necessary math libraries. Here's an example:

[0-init.py](#)

```
import numpy as np
import scipy
import sympy
import matplotlib.pyplot as plt
```

Running profile

To run this profile, run the following command:

```
ipython --profile=math
```

Create bash alias

In order to not have to run that command every time, you can create a bash alias. Add this line to `~/.bashrc`:

```
alias matpy-shell="ipython --profile=math"
```

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