## The Power of the Command Line

- `$ whoami`
- `$ date`
- `$ date +%T`
- `$ date +%Y`
- `$ cal`
- `$ emacs -nw -f tetris`
  - Up arrow rotates
  - Left right arrows move
  - Quit: ctrl-x, ctrl-c
  - To quit: hold control and x then hold control and c
- `$ clear`
- `$ history`

## In the valley of echos

- `$ echo Science!`
  - Science!
- `$ echo "Your username is $USER"`
  - Your username is dff2106
- `$ echo $HOSTNAME`
  - banana
- `$ echo $OSTYPE`
  - solaris2.7
- `$ printenv`

## Make your own variables!

- `$ myname="David"`
- `$ echo $myname`
  - David
- `$ echo "My name is $myname"`
  - My name is David
It can do math!

```
$ echo 2 + 3
2 + 3
$ echo $((2 + 3))
5
$ mynumber=72
$ echo mynumber
mynumber
$ echo $mynumber
72
$ echo $mynumber / 9
72 / 9
$ echo $((mynumber / 9))
8
```

Let's write some code!

```
$ {
  > echo "Welcome to the countdown."
  > now=$(date +%T)
  > echo "The time is now $now"
  > echo "Hit return to ignite."
  > read
  > echo 3
  > echo 2
  > echo 1
  > echo Blastoff!
  > }
```
Use an editor to write better code!

```
$ ed
  a
  echo "Hi, what is your name?"
  read name
  echo "Hi $name I am $HOSTNAME"
  echo "What year were you born?"
  read year
  now=$(date +%Y)
  age=$((now - year))
  echo "Ah, $year, that was a good year."
  echo "So that makes you $age years old."
.
  wq myfirstcode
$ bash myfirstcode
```

You can go online!

```
$ telnet towel.blinkenlights.nl
Watch star wars!!
to quit: ctrl-] then type 'quit'
Here we will write a simple code in with ed editor.
Maybe use curl on some data
goole supernova data filetype:txt for inspiration
http://supernova.lbl.gov/Union/figures/SCPUnion2_mu_vs_z.txt
OR GET SDSS DATA
example:
http://dr9.sdss3.org/spectrumDetail?plateid=1646&mjd=53498&fiber=41
head tail cat
more less
ed
grep
awk $2 $5
```

Navigating the Filesystem

```
$ echo $HOME
/u/10/j/jf2663
$ echo $SHELL
/bin/bash
bash is not only program but also an interactive shell to your computer!
$ pwd
$ ls
```
$ ssh uni1234@cunix.cc.columbia.edu
$ lookup Bollinger