

# RESEARCHTOOLS 2011

## LECTURE 12

2011-Oct-06  
Kurt Schwehr  
<http://schwehr.org>

UNH CCOM/JHC

python reading files and for loop



Saturday, October 8, 11

<http://vislab-ccom.unh.edu/~schwehr/Courses/2011/esci895-researchtools/>  
<http://creativecommons.org/licenses/by-nc-sa/3.0/>

# LOG FILES

- It is okay to keep one long log file for the course log
- There must be one entry for each day of class
- The entry must start with a single “\*” header
- The entry must be tagged with “day”. More is okay
- The entry line must contain the date
- If you miss a class, I still expect an entry



researchtools@ubuntu: ~/class/12

Class 12: python and control structu

File Edit View History Bookmarks Tools

Class 12: python and control st...

vislab-ccom.unh.edu/~schwehr/rt/

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## Slashdot and Steve Jobs apple stevejobs

If you haven't heard, Steve Jobs, co-founder of App

<http://apple.slashdot.org/story/11/10/06/000211/steve>

## Setup

Before you start class, make sure you have your env

```
mkdir -p ~/class/12
cd ~/class/12
wget http://vislab-ccom.unh.edu/~schwehr/rt/
```

## Setting your editor emacs editor bashvari

We can set the bash shell variable `EDITOR` to emacs editing and exit emacs. We will loose our place each time we exit emacs from somewhere else. emacs will stay running and c

Start emacs Applications -> Programming -> GNU Emacs 23

emacs23@ubuntu

File Edit Options Buffers Tools Org Tbl Help

#+STARTUP: showall

#+TITLE: **Class 12: python and control structures**

#+AUTHOR: Kurt Schwehr

#+EMAIL: schwehr@ccom.unh.edu

#+DATE: <2011-10-04 Tue>

#+DESCRIPTION: Marine Research Data Manipulation and Practices

#+KEYWORDS: ipython matplotlib

#+LANGUAGE: en

#+OPTIONS: H:3 num:nil toc:t \n:nil @:t ::t |:t ^:t -:t f:t \*:t <:t

#+OPTIONS: TeX:t LaTeX:nil skip:t d:nil todo:t pri:nil tags:not-in-toc

#+INFOJS\_OPT: view:nil toc:nil ltoc:t mouse:underline buttons:0 path:http://orgm

#+LINK\_HOME: http://vislab-ccom.unh.edu/~schwehr/Classes/2011/esci895-researchto

**\* Introduction**

**\*\* Google Group**

I have set up a google group for the class. Feel free to discuss anything related to the class there. It is open to the public, so there might end up being more than just the people you see in the classroom.

<http://groups.google.com/group/researchtools2011>

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<http://schwehr.blogspot.com/2011/10/research-tools-lecture-11-inpython-and.html>

12-python.org Top L1 (Org)



researchtools@ubuntu

Class 12: python and control

vislab-ccom.unh.

Most Visited

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- <http://schwehr.blogspot.com>
- <http://schwehr.blogspot.com>
- <http://schwehr.blogspot.com>

## Slashdot and Steve Jobs

If you haven't heard, Steve Jobs, c

<http://apple.slashdot.org/story/11/11/11>

## Setup

Before you start class, make sure

```
mkdir -p ~/class/12
cd ~/class/12
wget http://vislab-ccom
```

## Setting your editor emacs

We can set the bash shell variable editing and exit emacs. We will lo from somewhere else. emacs will

Start emacs Applications -> Programming -> GNU Emacs 23

emacs23@ubuntu

File Edit Options Buffers Tools ERC Help

schwehrvm on irc.debian.org:6667 (+,lag:0)

```
[Thu Oct 6 2011]
*** Welcome to the Internet Relay Network schwehrvm!~user@192.168.17.68 [11:01]
*** Your host is irc.debian.org, running version ngircd-15 (i486/pc/linux-gnu)
*** This server has been started Sun Sep 25 2011 at 16:05:06 (EDT)
*** irc.debian.org ngircd-15 aios biIklmnoPstv
*** RFC2812 CASEMAPPING=ascii PREFIX=(ov)@+ CHANTYPES=#&+
*** CHANMODES=bI,k,l,imnPst CHANLIMIT=#&+:10 are supported on this server
*** CHANNELLEN=50 NICKLEN=9 TOPICLEN=490 AWAYLEN=127 KICKLEN=400 PENALTY are
*** supported on this server
*** There are 15 users and 0 services on 1 servers
*** 2 channels formed
*** I have 15 users, 0 services and 0 servers
*** Current local users: 15, Max: 17
*** Current global users: 15, Max: 17
*** - irc.debian.org message of the day
*** - *****
*** - *           H   E   L   L   O           *
*** - *   Welcome on our new IRC server, running on: *
*** - *   Debian GNU/Linux (www.debian.org)         *
*** - *****
*** End of MOTD command
ERC> /join #unhresearchtools
```

-U:\*\*- Unknown All L26 (ERC)



researchtools@ubuntu

emacs23@ubuntu

Class 12: python and

File Edit Options Buffers Tools ERC Help

File Edit View History Boo

Class 12: python and control s

vislab-ccom.unh.

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## Slashdot and Steve Jobs

If you haven't heard, Steve Jobs, c

http://apple.slashdot.org/story/11/10/06/000211/steve-jobs-dead-at-56

## Setup

Before you start class, make sure

```
mkdir -p ~/class/12
cd ~/class/12
wget http://vislab-ccom.unh.edu/class/12/
```

## Setting your editor emacs

We can set the bash shell variable EDITOR to emacs. We will look at this from somewhere else. emacs will

Start emacs Applications -&gt; Programming -&gt; GNU Emacs 23

[researchtools@...]

[Mozilla Firefox]

emacs23@ubuntu

researchtools@u...

Class 12: python ...

Saturday, October 8, 11

schwehrvm on #unhresearchtools (+,lag:1) UNH channel for ubuntu, bash, python, emacs, org-babel, and

[Thu Oct 6 2011]

\*\*\* You have joined channel #unhresearchtools [11:02]

\*\*\* Topic for #unhresearchtools: UNH channel for ubuntu, bash, python, emacs, org-babel, and marine geospatial

\*\*\* #unhresearchtools: topic set by schwehr, 16:53:14 2011/09/30

\*\*\* Users on #unhresearchtools: schwehrvm matt\_w cenglert mohammad hminami ygh2 tnguyen sthein prasad schwehr ahyde kjerram bwelton @goatbar

\*\*\* #unhresearchtools modes: +

ERC&gt; /names

\*\*\* Users on #unhresearchtools: schwehrvm matt\_w cenglert mohammad hminami ygh2 tnguyen sthein prasad schwehr ahyde kjerram bwelton @goatbar

\*\*\* nhassan (~chatzill@192.168.8.244) has joined channel #unhresearchtools

&lt;nhassan&gt; hi everyone

&lt;schwehrvm&gt; good morning. Make sure to get setup with a ~/class/12 directory

&lt;schwehrvm&gt; and do a wget of the class org file

&lt;schwehrvm&gt; please make sure that it is in ~/class/12 [11:03]

&lt;bwelton&gt; hello hello

&lt;schwehrvm&gt;

http://apple.slashdot.org/story/11/10/06/000211/steve-jobs-dead-at-56

\*\*\* berrya (~chatzill@lab2.ccom.nh) has joined channel #unhresearchtools

\*\*\* mluke (~chatzill@192.168.8.249) has joined channel #unhresearchtools [11:04]

<mohammad> hi

ERC&gt; █

-U:\*\*- #unhresearchtools@Unknown All L27 (ERC)



researchtools@ubuntu

12-python.org

File Edit View Search Term

File Edit Options Buffers Tools Org Tbl Help

researchtools@ubuntu:~/class  
total 20

-rw-r--r-- 1 researchtools r

researchtools@ubuntu:~/class

total 20

-rw-r--r-- 1 researchtools r

researchtools@ubuntu:~/class



#+STARTUP: showall

**Class 12: python and control structures**

#+TITLE: Kurt Schwehr

#+AUTHOR: schwehr@ccom.unh.edu

#+EMAIL: &lt;2011-10-04 Tue&gt;

#+DATE: Marine Research Data Manipulation and Practices

#+DESCRIPTION: ipython matplotlib

#+KEYWORDS: en

#+LANGUAGE: H:3 num:nil toc:t \n:nil @:~t ::t |:t ^:t -:t f:t \*:t &lt;:t

#+OPTIONS: TeX:t LaTeX:nil skip:t d:nil todo:t pri:nil tags:~not-in-toc

#+INFOJS\_OPT: view:nil toc:nil ltoc:t mouse:underline buttons:0 path:http://orgmode.org/org-inf

#+LINK\_HOME: http://vislab-ccom.unh.edu/~schwehr/Courses/2011/esci895-researchtools/

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<http://schwehr.blogspot.com/2011/10/research-tools-lecture-11-inpython-and.html>

12-python.org Top L11 (Org)

&lt;monammad&gt; hi

&lt;berrya&gt; morning

&lt;mluke&gt; good morning eve

\*\*\* Gmasetti (~chatzill@

joined channel #unhresear

&lt;Gmasetti&gt; 'morning !

[11:06]

&lt;cenglert&gt; morning

&lt;ygh2&gt; hello

[11:07]

ERC&gt;

-U:~- #unhresearchtools@U

[researchto...

[Index of /~s...

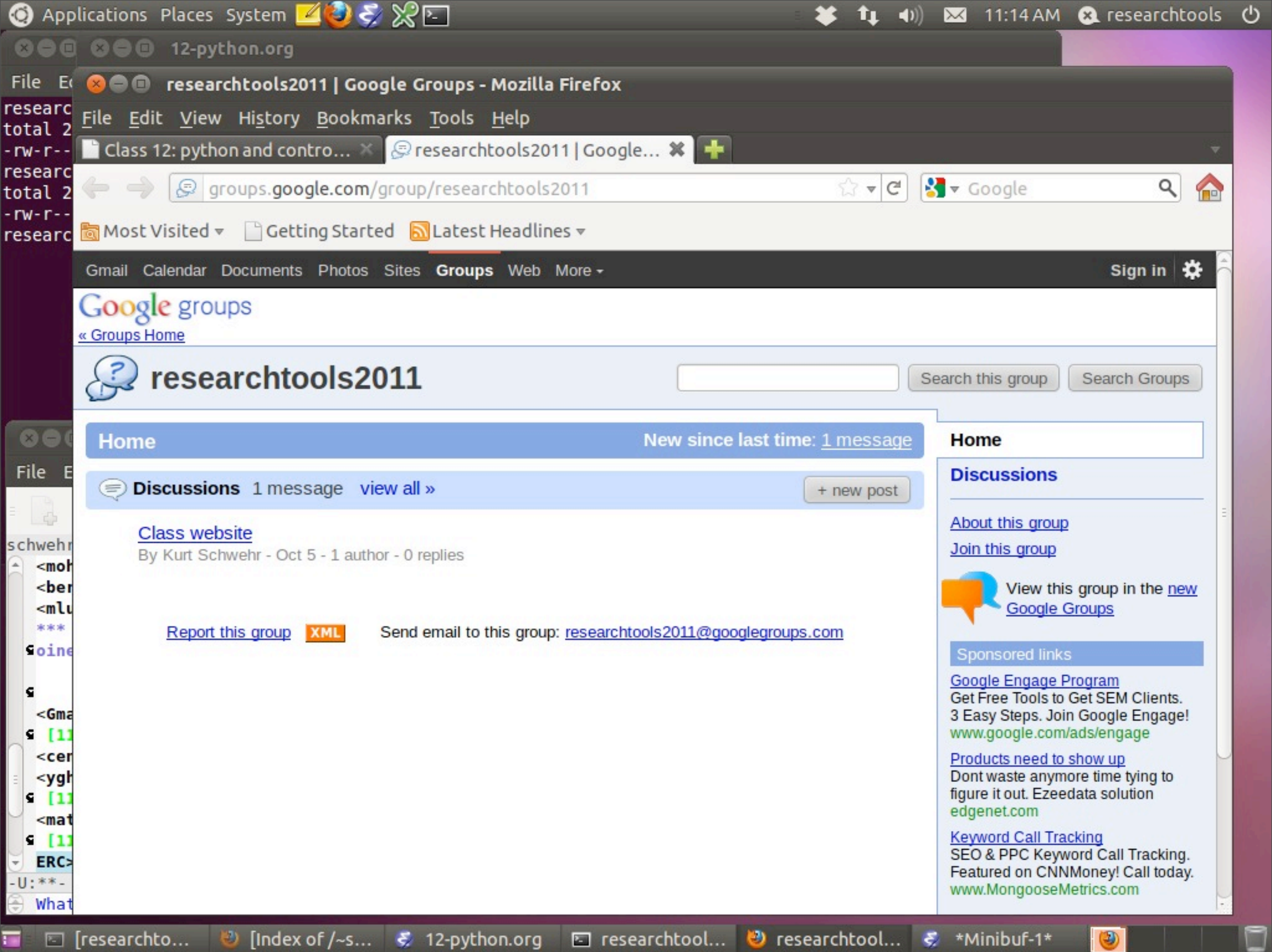
12-python.org

researchtool...

[Class 12: py...

#unhresearc...





Saturday, October 8, 11

At 2:40



<http://groups.google.com/group/researchtools2011>

## Comments per class

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- <http://schwehr.blogspot.com/2011/10/research-tools-lecture-11-ipython-and.html>
- <http://schwehr.blogspot.com/2011/10/research-tools-lecture-10-qgis-bash.html>
- <http://schwehr.blogspot.com/2011/10/research-tools-lecture-9-babel-bash.html>
- <http://schwehr.blogspot.com/2011/10/research-tools-lecture-8-more-emacs-and.html>
- <http://schwehr.blogspot.com/2011/10/research-tools-lecture-7-emacs-and-org.html>
- <http://schwehr.blogspot.com/2011/10/research-tools-lecture-6-keepassx-and.html>
- <http://schwehr.blogspot.com/2011/10/research-tools-lecture-5-filetypes.html>
- <http://schwehr.blogspot.com/2011/10/research-tools-lecture-4-vmware-ubuntu.html>
- <http://schwehr.blogspot.com/2011/10/research-tools-lecture-3-wiki-editing.html>
- <http://schwehr.blogspot.com/2011/10/research-tools-lecture-2-irc-mediawiki.html>
- <http://schwehr.blogspot.com/2011/10/research-tools-lecture-1-introduction.html>

## Slashdot and Steve Jobs apple stevejobs

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Wednesday, October 5, 2011

### [Research Tools Lecture 11 - ipython and python data types](#)

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Posted by Kurt at 3:08 PM 0 comments

### [Research Tools Lecture 10 - QGIS, Bash script, Healy movie, ipython, matplotlib](#)

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Posted by Kurt at 2:52 PM 0 comments

### [Research Tools Lecture 9 - Babel, bash, Google Earth](#)

[org](#), [html](#), [mp3](#), [pdf](#)

This is the first lecture where I realized that I should be capturing screen shots from my virtual machine while I teach. I put those into a keynote/powerpoint/pdf.

Posted by Kurt at 2:50 PM 0 comments

What Setup



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Posted by Kurt at 2:50 PM 0 comments

What Setup



Applications Places System 11:15 AM researchtools

12-python.org

Class 12: python and control structures - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Class 12: python and control st...

vislab-ccom.unh.edu/~schwehr/rt/12-python.html

Google

Most Visited Getting Started Latest Headlines

<http://apple.slashdot.org/story/11/10/06/000211/steve-jobs-dead-at-56>

## Setup

Before you start class, make sure you have your environment set up. Here is what I suggest

```
mkdir -p ~/class/12
cd ~/class/12
wget http://vislab-ccom.unh.edu/~schwehr/Classes/2011/esci895-researchtools/src/12-python.org
```

### Setting your editor `emacs` editor bashvariable

We can set the bash shell variable `EDITOR` to `emacs`, but then every time we want to edit a file, `ipython` is going to wait for us to "finish" editing and exit `emacs`. We will loose our place each time. There is a special way to setup `emacs` as a "server" that can be told to open a file from somewhere else. `emacs` will stay running and can get multiple requests. Here is how to make it work!

Start `emacs`. Applications -> Programming -> GNU Emacs 23.

In `emacs`, we need to start the server that will listen for requests to edit a file.

```
M-x server-start
```

Now, open a terminal. Applications -> Accessories -> Terminal Once we have a terminal, we can set the `EDITOR` variable to use the program called `emacsclient`. Remember that you can read more about the program with `man emacsclient`.

Saturday, October 8, 11

4:35 Steve Jobs

4:45 Setup for the class



12-python.org

File Edit Options Buffers Tools Org Tbl Help

#+STARTUP: showall

#+TITLE: **Class 12: python and control structures**

#+AUTHOR: Kurt Schwehr

#+EMAIL: schwehr@ccom.unh.edu

#+DATE: <2011-10-04 Tue>

#+DESCRIPTION: Marine Research Data Manipulation and Practices

#+KEYWORDS: ipython matplotlib

#+LANGUAGE: en

#+OPTIONS: H:3 num:nil toc:t \n:nil @:t ::t |:t ^:t -:t f:t \*:t <:t

#+OPTIONS: TeX:t LaTeX:nil skip:t d:nil todo:t pri:nil tags:not-in-toc

#+INFOJS\_OPT: view:nil toc:nil ltoc:t mouse:underline buttons:0 path:http://orgmode.org/org-inf

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<http://schwehr.blogspot.com/2011/10/research-tools-lecture-11-inpython-and.html>

12-python.org Top L20 (Org)

What action to take on 'Gmasetti'?



12-python.org

File Edit Options Buffers Tools Org Tbl Help

researchtools@u... [Index of /~schw... 12-python.org researchtools@u... \*Minibuf-1\*

#+STARTUP: showall

#+TITLE: **Class 12: python and control structures**

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#+OPTIONS: TeX:t LaTeX:nil skip:t d:nil todo:t pri:nil tags:~in-toc

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#+LINK\_HOME: http://vislab-ccom.unh.edu/~schwehr/Classes/2011/esci895-researchtools/

\* Introduction...

\* Setup...

\* Creating a python script and running it from python :compile:script:python:ipython:...

\* Reading a file with python...

\* A for loop :for:...

\* Separating groups of code :comments:...

\* What if you do not want to run some of the code in your file?...

\* More getting help...

\* Using =if= :if:...

\* Making a function :function:...

\* IM-Python menu in emacs...

\* Checking your code with pylint :pylint:...

What action to take on 'Gmasetti'?



```
researchtools@ubuntu:~/cla
total 20
```

```
-rw-r--r-- 1 researchtools
researchtools@ubuntu:~/cla
total 20
```

```
-rw-r--r-- 1 researchtools
researchtools@ubuntu:~/cla
```

```
schwehrvm on #unhresearcht
```

```
<mohammad> hi
```

```
<berrya> morning
```

```
<mluke> good morning ev
```

```
*** Gmasetti (~chatzill
```

```
joined channel #unhrese
```

```
<Gmasetti> 'morning !
```

```
[11:06]
```

```
<cenglert> morning
```

```
<ygh2> hello
```

```
[11:07]
```

```
<matt_w> hi
```

```
[11:13]
```

```
ERC>
```

```
-U:***- #unhresearchtools
```

```
researchtools@ubu
```

```
researchtools@ubu
```

```
researchtools@ubu
```

```
researchtools@ubu
```

```
researchtools@ubu
```

```
researchtools@ubu
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researchtools@ubu
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```
researchtools@ubu
```

```
researchtools@ubu
```

```
researchtools@ubu
```

```
researchtools@ubu
```

```
** Setting your editor
```

```
:emacs:editor:bashvariable:
```

We can set the bash shell variable `=EDITOR=` to emacs, but then every time we want to edit a file, ipython is going to wait for us to "finish" editing and exit emacs. We will loose our place each time. There is a special way to setup emacs as a "server" that can be told to open a file from somewhere else. emacs will stay running and can get multiple requests. Here is how to make it work!

Start emacs. =Applications -> Programming -> GNU Emacs 23=.

In emacs, we need to start the server that will listen for requests to edit a file.

```
#+BEGIN_EXAMPLE
```

```
M-x server-start
```

```
#+END_EXAMPLE
```

Now, open a terminal. =Applications -> Accessories -> Terminal=

Once we have a terminal, we can set the `=EDITOR=` variable to use the program called `=emacsclient=`. Remember that you can read more about the program with `=man emacsclient=`.

```
#+BEGIN_SRC sh
```

```
export EDITOR=emacsclient
```

```
#+END_SRC
```

Now start ipython. As ipython to edit a python script file:

```
#+BEGIN_SRC python
```

```
edit helloworld.py
```

```
#+END_SRC
```

```
--:-- 12-python.org 14% L77 (0rg)-----
```

```
M-x server-start
```



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

```
researchtools@ubuntu:~/class/12$ ls -l
total 20
-rw-r--r-- 1 researchtools researchtools 18910 2011-10-06 10:00 12-python.org
researchtools@ubuntu:~/class/12$ ls -l
total 20
-rw-r--r-- 1 researchtools researchtools 18910 2011-10-06 10:00 12-python.org
researchtools@ubuntu:~/class/12$ emacsclient README.txt
```



emacs:editor:bashvariable:

but then every  
for us to  
place each time.  
that can be told  
running and can

acs 23=.

en for requests to

&gt; Terminal=

Once we have a terminal, we can set the =EDITOR= variable to use the program called =emacsclient=. Remember that you can read more about the program with =man emacsclient=.

```
#+BEGIN_SRC sh
export EDITOR=emacsclient
#+END_SRC
```

Now start ipython. As ipython to edit a python script file:

```
#+BEGIN_SRC python
edit helloworld.py
#+END_SRC
```

```
--:-- 12-python.org 14% L79 (0rg) -----
```

```
<monammad> hi
<berry> morning
<mluke> good morning ev
*** Gmasetti (~chatzill
joined channel #unhresear
<Gmasetti> 'morning !
[11:06]
<cenglert> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
ERC>
```

```
-U:**- #unhresearchtools@
```



researchtools@ubuntu:~/cla  
total 20  
-rw-r--r-- 1 researchtools  
researchtools@ubuntu:~/cla  
total 20  
-rw-r--r-- 1 researchtools  
researchtools@ubuntu:~/cla  
Waiting for Emacs...

**README.txt**

File Edit Options Buffers Tools YASnippet Help

When done with a buffer, type C-x #

ERC>

-U:\*\*\*- #unhresearchtools@

<monammad> hi  
<berrya> morning  
<mluke> good morning ev  
\*\*\* Gmasetti (~chatzill  
Joined channel #unhresear  
<Gmasetti> 'morning !  
[11:06]  
<cenglert> morning  
<ygh2> hello  
[11:07]  
<matt\_w> hi  
[11:13]

-U:--- README.txt All L1 (Text Server yas)-----  
When done with a buffer, type C-x #



researchtools@ubuntu:~/cla  
total 20  
-rw-r--r-- 1 researchtools  
researchtools@ubuntu:~/cla  
total 20  
-rw-r--r-- 1 researchtools  
researchtools@ubuntu:~/cla  
Waiting for Emacs...

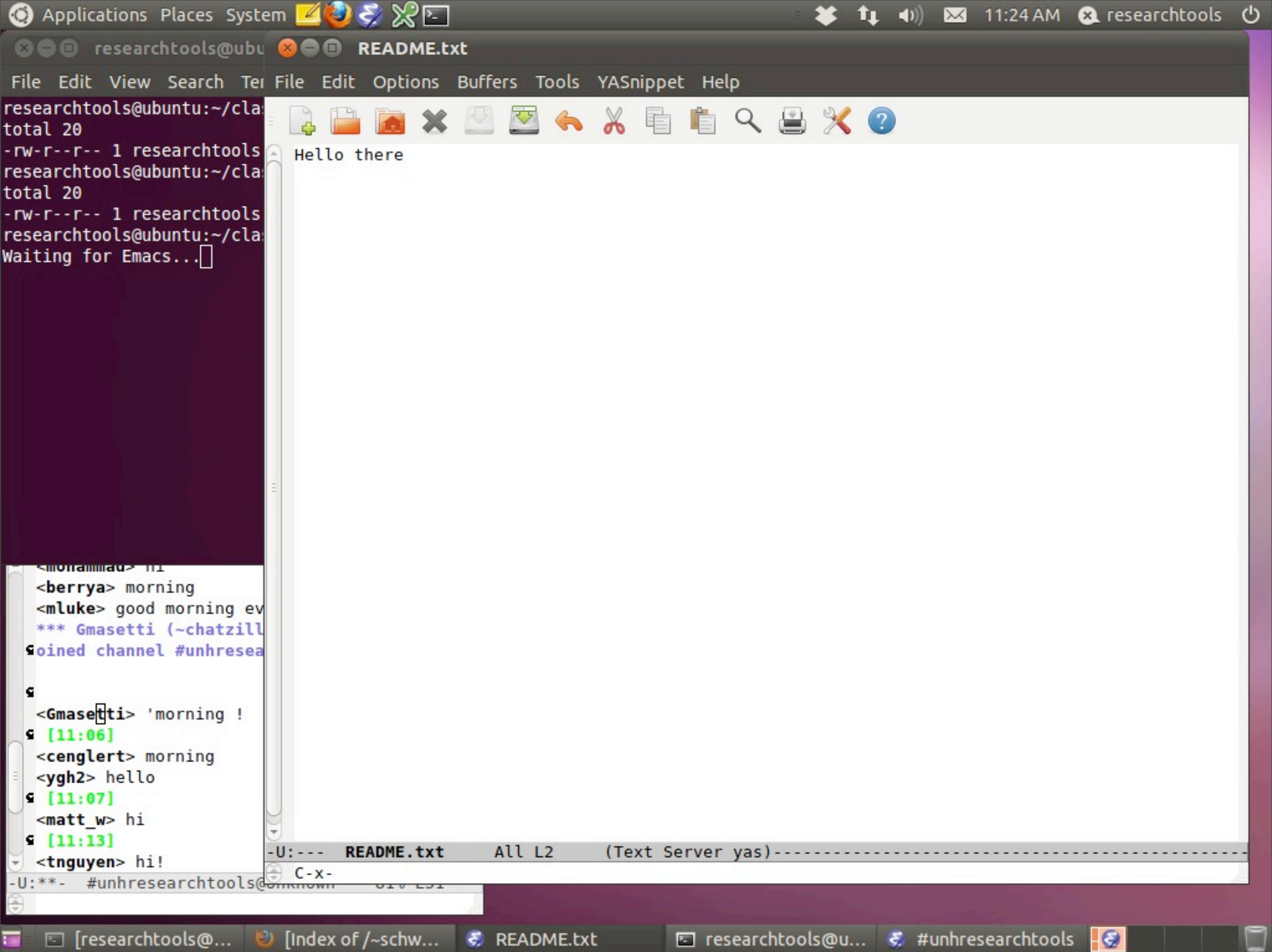
File Edit View Search Te File Edit Options Buffers Tools YASnippet Help

Hello there

**README.txt** All L2 (Text Server yas) -----  
Wrote /home/researchtools/class/12/README.txt

<monammad> hi  
<berrya> morning  
<mluke> good morning ev  
\*\*\* Gmasetti (~chatzill  
Joined channel #unhrese  
<Gmasetti> 'morning !  
[11:06]  
<cenglert> morning  
<ygh2> hello  
[11:07]  
<matt\_w> hi  
[11:13]  
<tnguyen> hi!  
-U:\*\*\*- #unhresearchtools@





Saturday, October 8, 11

9:49

Emacs command to less the emacsclient command know you are done editing:

C-x #



```
researchtools@ubuntu: ~/class/12
File Edit View Search Terminal Help
researchtools@ubuntu:~/class/12$ ls -l
total 20
-rw-r--r-- 1 researchtools researchtools 18910 2011-10-06 10:00 12-python.org
researchtools@ubuntu:~/class/12$ ls -l
total 20
-rw-r--r-- 1 researchtools researchtools 18910 2011-10-06 10:00 12-python.org
researchtools@ubuntu:~/class/12$ emacsclient README.txt
Waiting for Emacs...
researchtools@ubuntu:~/class/12$
```

```
<monammad> hi
<berrya> morning
<mluke> good morning ev
*** Gmasetti (~chatzill
Joined channel #unhresear
<Gmasetti> 'morning !
[11:06]
<cenglert> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
<tnguyen> hi!
-U:***- #unhresearchtools@
```

-U:--- README.txt All L2 (Text yas)-----  
No server buffers remain to edit



```
researchtools@ubuntu: ~/class/12
File Edit View Search Terminal Help
researchtools@ubuntu:~/class/12$ ls -l
total 20
-rw-r--r-- 1 researchtools researchtools 18910 2011-10-06 10:00 12-python.org
researchtools@ubuntu:~/class/12$ ls -l
total 20
-rw-r--r-- 1 researchtools researchtools 18910 2011-10-06 10:00 12-python.org
researchtools@ubuntu:~/class/12$ emacsclient README.txt
Waiting for Emacs...
researchtools@ubuntu:~/class/12$ ls -l
total 24
-rw-r--r-- 1 researchtools researchtools 18910 2011-10-06 10:00 12-python.org
-rw-r--r-- 1 researchtools researchtools 12 2011-10-06 11:24 README.txt
researchtools@ubuntu:~/class/12$ cat README.txt
Hello there
researchtools@ubuntu:~/class/12$
```

```
<monhammad> hi
<berrya> morning
<mluke> good morning ev
*** Gmasetti (~chatzill
Joined channel #unhresear
<Gmasetti> 'morning !
[11:06]
<cenglert> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
<tnguyen> hi!
-U:--- README.txt All L2 (Text yas)-----
No server buffers remain to edit
-U:*** #unhresearchtools@
```



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

```
researchtools@ubuntu:~/class/12$ ls -l
total 20
-rw-r--r-- 1 researchtools researchtools 18910 2011-10-06 10:00 12-python.org
researchtools@ubuntu:~/class/12$ ls -l
total 20
-rw-r--r-- 1 researchtools researchtools 18910 2011-10-06 10:00 12-python.org
researchtools@ubuntu:~/class/12$ emacsclient README.txt
Waiting for Emacs...
researchtools@ubuntu:~/class/12$ ls -l
total 24
-rw-r--r-- 1 researchtools researchtools 18910 2011-10-06 10:00 12-python.org
-rw-r--r-- 1 researchtools researchtools 12 2011-10-06 11:24 README.txt
researchtools@ubuntu:~/class/12$ cat README.txt
Hello there
researchtools@ubuntu:~/class/12$ export EDITOR=emacsclient
researchtools@ubuntu:~/class/12$ ipython
```



emacs:editor:bashvariable:

but then every  
for us to  
place each time.  
that can be told  
running and can

acs 23=.

en for requests to

&gt; Terminal=

Once we have a terminal, we can set the =EDITOR= variable to use the program called =emacsclient=. Remember that you can read more about the program with =man emacsclient=.

```
#+BEGIN_SRC sh
export EDITOR=emacsclient
#+END_SRC
```

Now start ipython. As ipython to edit a python script file:

```
#+BEGIN_SRC python
edit helloworld.py
#+END_SRC
```

```
--:-- 12-python.org 14% L86 (Org) -----
```

```
<monammad> hi
<berry> morning
<mluke> good morning ev
*** Gmasetti (~chatzill
joined channel #unhresear
<Gmasetti> 'morning !
[11:06]
<cenglert> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
<tnguyen> hi!
```

```
-U:~- #unhresearchtools@
```



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

```
total 20
-rw-r--r-- 1 researchtools researchtools 18910 2011-10-06 10:00 12-python.org
researchtools@ubuntu:~/class/12$ emacsclient README.txt
```

Waiting for Emacs...

researchtools@ubuntu:~/class/12\$ ls -l

```
total 24
-rw-r--r-- 1 researchtools researchtools 18910 2011-10-06 10:00 12-python.org
-rw-r--r-- 1 researchtools researchtools 12 2011-10-06 11:24 README.txt
```

researchtools@ubuntu:~/class/12\$ cat README.txt

Hello there

researchtools@ubuntu:~/class/12\$ export EDITOR=emacsclient

researchtools@ubuntu:~/class/12\$ ipython

Python 2.7.1+ (r271:86832, Apr 11 2011, 18:05:24)

Type "copyright", "credits" or "license" for more information.

IPython 0.10.1 -- An enhanced Interactive Python.

? -&gt; Introduction and overview of IPython's features.

%quickref -&gt; Quick reference.

help -&gt; Python's own help system.

object? -&gt; Details about 'object'. ?object also works, ?? prints more.

In [1]: edit helloworld.py

&lt;monamadu&gt; hi

&lt;berrya&gt; morning

&lt;mluke&gt; good morning ev

\*\*\* Gmasetti (~chatzill

joined channel #unhrese

&lt;Gmasetti&gt; 'morning !

[11:06]

&lt;cenglert&gt; morning

&lt;ygh2&gt; hello

[11:07]

&lt;matt\_w&gt; hi

[11:13]

&lt;tnguyen&gt; hi!

-U:\*\*- #unhresearchtools@

Once we have a terminal, we can set the =EDITOR= variable to use the

program called =emacsclient=. Remember that you can read more about

the program with =man emacsclient=.

#+BEGIN\_SRC sh

export EDITOR=emacsclient

#+END\_SRC

Now start ipython. As ipython to edit a python script file:

#+BEGIN\_SRC python

edit helloworld.py

#+END\_SRC

---:--- 12-python.org 14% L86 (0rg)---

[researchtools@...]

[Index of /~schw...]

12-python.org

researchtools@u...

#unhresearchtools

Saturday, October 8, 11

11:44



researchtools@ubu \*Minibuf-1\*

File Edit View Search Ter File Edit Options Buffers Tools Minibuf Help

-rw-r--r-- 1 researchtools  
researchtools@ubuntu:~/cla  
Waiting for Emacs...  
researchtools@ubuntu:~/cla  
total 24  
-rw-r--r-- 1 researchtools  
-rw-r--r-- 1 researchtools  
researchtools@ubuntu:~/cla  
Hello there  
researchtools@ubuntu:~/cla  
researchtools@ubuntu:~/cla  
Python 2.7.1+ (r271:86832,  
Type "copyright", "credits  
  
IPython 0.10.1 -- An enhan  
? -> Introduction  
%quickref -> Quick referen  
help -> Python's own  
object? -> Details about  
  
In [1]: edit helloworld.py  
Editing...Waiting for Emac  
  
<monhammad> hi  
<berrya> morning  
<mluke> good morning ev  
\*\*\* Gmasetti (~chatzill  
joined channel #unhrese  
  
<Gmasetti> 'morning !  
[11:06]  
<cenglert> morning  
<ygh2> hello  
[11:07]  
<matt\_w> hi  
[11:13]  
<tnguyen> hi!  
-U:\*\*\*- #unhresearchtools@  
Switch to buffer (default 12-python.org):

helloworld.py All L1 (Python Server yas)



researchtools@ubu

File Edit View Search Ter

```

-rw-r--r-- 1 researchtools
researchtools@ubuntu:~/cla
Waiting for Emacs...
researchtools@ubuntu:~/cla
total 24
-rw-r--r-- 1 researchtools
-rw-r--r-- 1 researchtools
researchtools@ubuntu:~/cla
Hello there
researchtools@ubuntu:~/cla
researchtools@ubuntu:~/cla
Python 2.7.1+ (r271:86832,
Type "copyright", "credits
IPython 0.10.1 -- An enhan
?      -> Introduction
%quickref -> Quick referen
help    -> Python's own
object? -> Details about

In [1]: edit helloworld.py
Editing...Waiting for Emac

```

<monhammad> hi

<berrya> morning

<mluke> good morning ev

\*\*\* Gmasetti (~chatzill

joined channel #unhrese

<Gmasetti> 'morning !

[11:06]

<cenglert> morning

<ygh2> hello

[11:07]

<matt\_w> hi

[11:13]

<tnguyen> hi!

-U:\*\*- #unhresearchtools@

12-python.org

File Edit Options Buffers Tools Org Tbl Help

```

export EDITOR=emacsclient
#+END_SRC

Now start ipython. As ipython to edit a python script file:

#+BEGIN_SRC python
edit helloworld.py
#+END_SRC

Now you can finish editing the file with =C-x #=. Unfortunately,
a couple things are not yet correct. First, emacs will close that file
so we can't keep editing. Second, this setup is not permanent. It
only exists as long as this copy of emacs and this terminal are
running. We need to fix both at the same time by editing two
configuration files in our account.

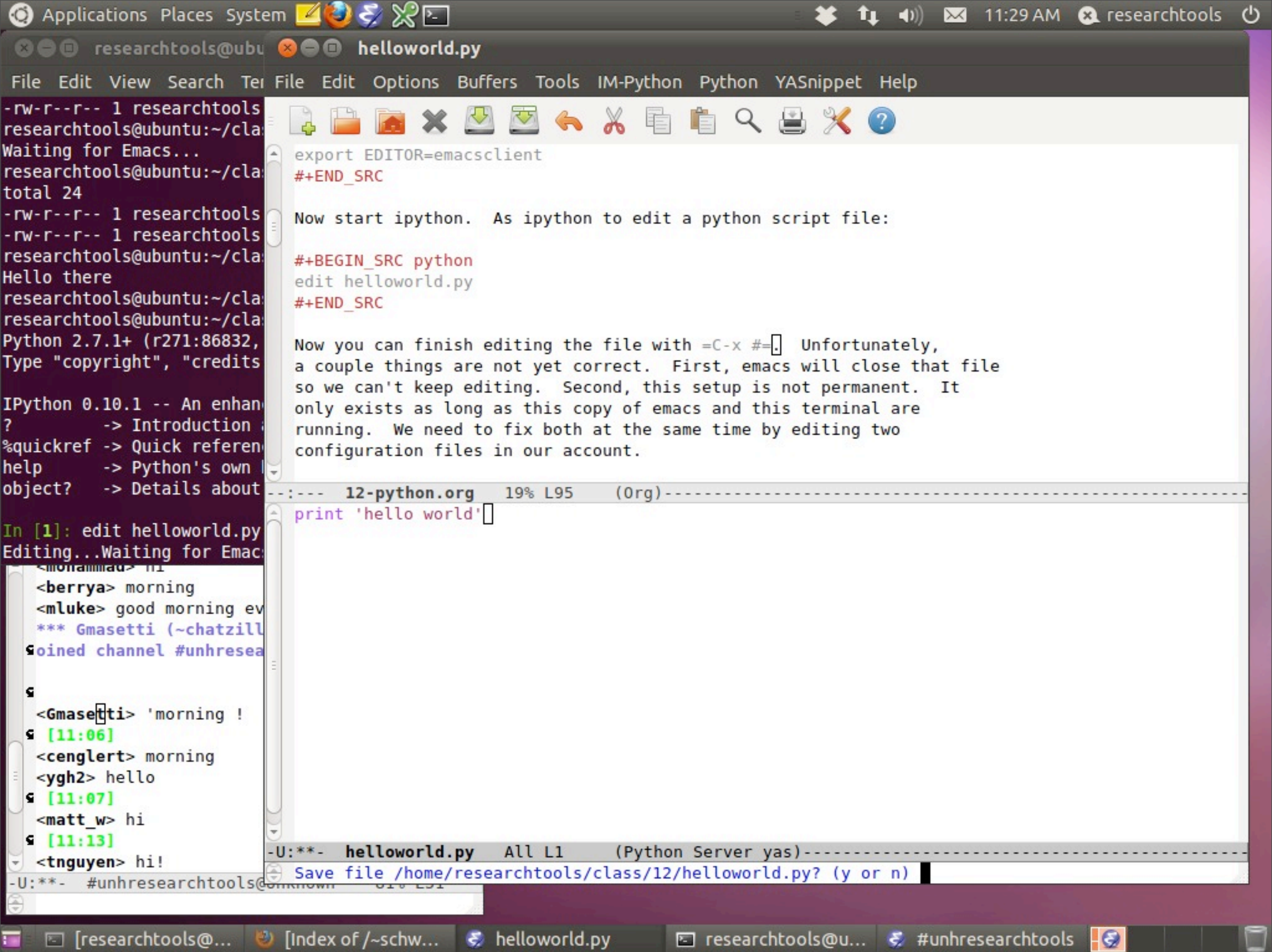
```

12-python.org 19% L95 (Org)

print 'hello world'

-U:\*\*- helloworld.py All L1 (Python Server yas)





Saturday, October 8, 11

12:41  
C-x #  
to let ipython know via emacs client that we are done editing the file  
emacs will ask us to save the file if we have not saved







The image shows a dual-pane window from a Linux desktop environment. The left pane is a terminal window titled 'researchtools@ubu'. It shows a user editing a file 'helloworld.py' and then interacting in a chat channel. The chat messages include greetings and a mention of 'Gmasetti'. The right pane is an Emacs editor window titled '\*Minibuf-1\*'. It shows a buffer named '12-python.org' containing Lisp code and comments. The code is for starting an Emacs server. The status bar at the bottom of the Emacs window shows 'Find file: ~/class/12/~/.emacs'.

```

researchtools@ubuntu:~/class/12/~/.emacs
researchtools@ubuntu:~/class/12/~/.emacs
Python 2.7.1+ (r271:86832,
Type "copyright", "credits
IPython 0.10.1 -- An enhan
? -> Introduction
%quickref -> Quick referen
help -> Python's own
object? -> Details about

In [1]: edit helloworld.py
Editing...Waiting for Emac
done. Executing edited co
hello world

In [2]: edit helloworld.py
Editing...Waiting for Emac
done. Executing edited co
hello world

In [3]:
<monammad> hi
<berrya> morning
<mluke> good morning ev
*** Gmasetti (~chatzill
joined channel #unhresear

<Gmasetti> 'morning !
[11:06]
<cenglert> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
<tnguyen> hi!
-U:**- #unhresearchtools@

First, let us edit our .emacs file and add two lines plus some
comments. In emacs lisp, comments start with the ";" character. Please
do not worry about trying to understand the lisp programming language.
That is outside of the scope of this class. If you are interested,
please talk to me and I can get you started.

#+BEGIN_SRC emacs-lisp
;; Emacs server

; Do not close the file that was being edited when C-x # is typed
(setq server-kill-new-buffers nil)

; Start the emacs server for emacsclient
(server-start)
#+END_SRC

---:--- 12-python.org 22% L109 (Org)-----

First, let us edit our .emacs file and add two lines plus some
comments. In emacs lisp, comments start with the ";" character. Please
do not worry about trying to understand the lisp programming language.
That is outside of the scope of this class. If you are interested,
please talk to me and I can get you started.

#+BEGIN_SRC emacs-lisp
;; Emacs server

; Do not close the file that was being edited when C-x # is typed
(setq server-kill-new-buffers nil)

; Start the emacs server for emacsclient
(server-start)
#+END_SRC

---:--- 12-python.org 22% L109 (Org)-----
Find file: ~/class/12/~/.emacs

```







```
researchtools@ubuntu:~/cla
researchtools@ubuntu:~/cla
Python 2.7.1+ (r271:86832,
Type "copyright", "credits
```

```
IPython 0.10.1 -- An enhan
?      -> Introduction
%quickref -> Quick referen
help    -> Python's own
object? -> Details about
```

```
In [1]: edit helloworld.py
Editing...Waiting for Emac
done. Executing edited co
helloworld
```

```
In [2]: edit helloworld.py
Editing...Waiting for Emac
done. Executing edited co
helloworld
```

```
In [3]:
```

```
<monamadu> hi
<berrya> morning
<mluke> good morning ev
*** Gmasetti (~chatzill
joined channel #unhresear
<Gmasetti> 'morning !
[11:06]
<cenglert> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
<tnguyen> hi!
```

```
-U:**- #unhresearchtools@
```

```
))
```

```
; Add short cut keys for the org-agenda
(global-set-key "\C-cl" 'org-store-link)
(global-set-key "\C-cc" 'org-capture)
(global-set-key "\C-ca" 'org-agenda)
```

```
;;; Emacs server
```

```
; Do not close the file that was being edited when C-x # is typed
(setq server-kill-new-buffers nil)
```

```
; Start the emacs server for emacsclient
(server-start)
```

```
---:--- .emacs 43% L26 (Emacs-Lisp yas)-----
```

First, let us edit our [.emacs](#) file and add two lines plus some comments. In emacs lisp, comments start with the ";" character. Please do not worry about trying to understand the lisp programming language. That is outside of the scope of this class. If you are interested, please talk to me and I can get you started.

```
#+BEGIN_SRC emacs-lisp
```

```
;;; Emacs server
```

```
; Do not close the file that was being edited when C-x # is typed
(setq server-kill-new-buffers nil)
```

```
; Start the emacs server for emacsclient
(server-start)
```

```
#+END_SRC
```

```
---:--- 12-python.org 22% L116 (Org)-----
```



The screenshot shows a Minibuf-1 window with the following content:

**Left Panel (Chat Log):**

```
researchtools@ubuntu:~/cla
researchtools@ubuntu:~/cla
Python 2.7.1+ (r271:86832,
Type "copyright", "credits
IPython 0.10.1 -- An enhan
? -> Introduction
%quickref -> Quick referen
help -> Python's own
object? -> Details about
In [1]: edit helloworld.py
Editing...Waiting for Emac
done. Executing edited co
hello world
In [2]: edit helloworld.py
Editing...Waiting for Emac
done. Executing edited co
hello world
In [3]:
<monammad> hi
<berrya> morning
<mluke> good morning ev
*** Gmasetti (~chatzill
joined channel #unhresear
<Gmasetti> 'morning !
[11:06]
<cenglert> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
<tnguyen> hi!
```

**Main Panel (Emacs Lisp Code):**

```
(global-set-key "\C-ca" 'org-agenda)

;;; Emacs server

; Do not close the file that was being edited when C-x # is typed
(setq server-kill-new-buffers nil)

; Start the emacs server for emacsclient
(server-start)

; Setup custom shortcuts
(global-set-key "\C-x\C-g" 'goto-line)
(global-set-key [f1] 'compile)
(global-set-key [f2] 'next-error)

--- .emacs Bot L29 (Emacs-Lisp yas) ---

;;; Emacs server

; Do not close the file that was being edited when C-x # is typed
(setq server-kill-new-buffers nil)

; Start the emacs server for emacsclient
(server-start)

#+END_SRC

Now, add this line to the bottom of your .bashrc:

#+BEGIN_SRC sh
export EDITOR=emacsclient
#+END_SRC

Next time you log in to your virtual machine, everything should be

--- 12-python.org 24% L121 (Org) ---
Find file: ~/.bashrc
```



researchtools@ubu

File Edit View Search Te

```

researchtools@ubuntu:~/cla
researchtools@ubuntu:~/cla
Python 2.7.1+ (r271:86832,
Type "copyright", "credits
IPython 0.10.1 -- An enhan
?      -> Introduction
%quickref -> Quick referen
help    -> Python's own
object? -> Details about

In [1]: edit helloworld.py
Editing...Waiting for Emac
done. Executing edited co
hello world

In [2]: edit helloworld.py
Editing...Waiting for Emac
done. Executing edited co
hello world

In [3]:

```

<monamadu> hi

<berrya> morning

<mluke> good morning ev

\*\*\* Gmasetti (~chatzill

joined channel #unhresear

<Gmasetti> 'morning !

[11:06]

<cenglert> morning

<ygh2> hello

[11:07]

<matt\_w> hi

[11:13]

<tnguyen> hi!

-U:\*\*\*- #unhresearchtools@

.bashrc

File Edit Options Buffers Tools Sh-Script Help

```

if [ -f ~/.bash_aliases ]; then
    . ~/.bash_aliases
fi

# enable programmable completion features (you don't need to enable
# this, if it's already enabled in /etc/bash.bashrc and /etc/profile
# sources /etc/bash.bashrc).
if [ -f /etc/bash_completion ] && ! shopt -oq posix; then
    . /etc/bash_completion
fi

export EDITOR='emacsclient'

```

---:--- .bashrc Bot L105 (Shell-script[bash])-----

```

;;; Emacs server

; Do not close the file that was being edited when C-x # is typed
(setq server-kill-new-buffers nil)

; Start the emacs server for emacsclient
(server-start)
#+END_SRC

Now, add this line to the bottom of your .bashrc:

#+BEGIN_SRC sh
export EDITOR=emacsclient
#+END_SRC

Next time you log in to your virtual machine, everything should be

```

---:--- 12-python.org 24% L121 (Org)-----

researchtools@u... [Index of /~schw... .bashrc researchtools@u... #unhresearchtools

Saturday, October 8, 11

17:14



researchtools@ubu

12-python.org

File Edit View Search Te File Edit Options Buffers Tools Org Tbl Help

researchtools@ubuntu:~/cla  
researchtools@ubuntu:~/cla  
Python 2.7.1+ (r271:86832,  
Type "copyright", "credits  
  
IPython 0.10.1 -- An enhan  
? -> Introduction  
%quickref -> Quick referen  
help -> Python's own  
object? -> Details about  
  
In [1]: edit helloworld.py  
Editing...Waiting for Emac  
done. Executing edited co  
helloworld  
  
In [2]: edit helloworld.py  
Editing...Waiting for Emac  
done. Executing edited co  
helloworld  
  
In [3]:

Now press =C-x #= in emacs.

#+BEGIN\_EXAMPLE  
done. Executing edited code...  
hello world  
#+END\_EXAMPLE  
  
\*\* Setting a shortcut in emacs  
Creating a python script and running it from python :compile:script:python:ipython:...  
\* Reading a file with python...  
\* A for loop  
\* Separating groups of code  
\* What if you do not want  
\* More getting help...  
\* Using =if=  
\* Making a function

:emacs:...  
:for:...  
:comments:...  
:if:...  
function:...

12-python.org 29%  
Proc  
erc-researchtools.ccom.nh

Active processes exist; kill them and exit anyway?  
Yes No

\*Process List\* All L1 (Help View)  
(No files need saving)

<monhammad> hi  
<berrya> morning  
<mluke> good morning ev  
\*\*\* Gmasetti (~chatzill  
joined channel #unhrese  
  
<Gmasetti> 'morning !  
[11:06]  
<cenglert> morning  
<ygh2> hello  
[11:07]  
<matt\_w> hi  
[11:13]  
<tnguyen> hi!  
-U:\*\*- #unhresearchtools@

[researchtools@... [Index of /~schw... 12-python.org researchtools@u... #unhresearchtools

Saturday, October 8, 11  
18:45



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

```
researchtools@ubuntu:~/class/12$ ipython
Python 2.7.1+ (r271:86832, Apr 11 2011, 18:05:24)
Type "copyright", "credits" or "license" for more information.
```

```
IPython 0.10.1 -- An enhanced Interactive Python.
? -> Introduction and overview of IPython's features.
%quickref -> Quick reference.
help -> Python's own help system.
object? -> Details about 'object'. ?object also works, ?? prints more.
```

```
In [1]: edit helloworld.py
Editing...Waiting for Emacs...
done. Executing edited code...
hello world
```

```
In [2]: edit helloworld.py
Editing...Waiting for Emacs...
done. Executing edited code...
hello world
```

```
In [3]:
Do you really want to exit ([y]/n)? Do you really want to exit ([y]/n)?
```

```
<monhammad> hi
<berrya> morning
<mluke> good morning ev
*** Gmasetti (~chatzill
Joined channel #unhresear
<Gmasetti> 'morning !
[11:06]
<cenglert> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
<tnguyen> hi!
```

```
-U:**- #unhresearchtools@
```

```
-U:%%- *Process List* All L1 (Help View)-----
```

```
(No files need saving)
```



```
:emacs:...
:compile:script:python:ipython:...
```

```
:for:...
:comments:...
your file?...
```

```
:if:...
:function:...
```

```
Command
```

```
-----
s.com.nh:6667 (network stream connection to)
```



researchtools@ubu

12-python.org

File Edit View Search Ter File Edit Options Buffers Tools Org Tbl Help

researchtools@ubuntu:~\$ cd

researchtools@ubuntu:~/cla

total 32

-rw-r--r-- 1 researchtools

-rw-r--r-- 1 researchtools

-rw-r--r-- 1 researchtools

-rw-r--r-- 1 researchtools

researchtools@ubuntu:~/cla

\*\* Setting a shortcut in emacs :emacs:...

\* Creating a python script and running it from python :compile:script:python:ipython:

Start ipython:

#+BEGIN\_SRC sh

cd ~/class/12

ipython --pylab

#+END\_SRC

Check that your EDITOR variable is set correctly.

#+BEGIN\_SRC python

import os

os.environ['EDITOR']

#+END\_SRC

It should respond with:

#+BEGIN\_EXAMPLE

'emacsclient'

#+END\_EXAMPLE

\*\* Running the script using ipython...

\*\* Running a python script from emacs...

\*\* Dealing with syntax errors (typos) with emacs :nexterror:emacs:...

\*\* Running the whole buffer...

\* Reading a file with python...

\* A for loop :for:...

\* Separating groups of code :comments:...

\* What if you do not want to run some of the code in your file?...

\* More getting help...

\* Using =if= :if:...

<monammad> hi

<berrya> morning

<mluke> good morning ev

\*\*\* Gmasetti (~chatzill

joined channel #unhrese

<Gmasetti> 'morning !

[11:06]

<cenglert> morning

<ygh2> hello

[11:07]

<matt\_w> hi

[11:13]

<tnguyen> hi!

-U:\*\*\*- #unhresearchtools@

12-python.org

29% L179 (Org)

CHILDREN

[researchtools@... [Index of /~schw... 12-python.org #unhresearchtools researchtools@u...

Saturday, October 8, 11



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

researchtools@ubuntu:~/class/12\$ ls -l

total 32

```
-rw-r--r-- 1 researchtools researchtools 18910 2011-10-06 10:00 12-python.org
-rw-r--r-- 1 researchtools researchtools 30 2011-10-06 11:30 helloworld.py
-rw-r--r-- 1 researchtools researchtools 20 2011-10-06 11:29 helloworld.py~
-rw-r--r-- 1 researchtools researchtools 12 2011-10-06 11:24 README.txt
```

researchtools@ubuntu:~/class/12\$ ipython --pylab

Python 2.7.1+ (r271:86832, Apr 11 2011, 18:05:24)

Type "copyright", "credits" or "license" for more information.

IPython 0.10.1 -- An enhanced Interactive Python.

? -&gt; Introduction and overview of IPython's features.

%quickref -&gt; Quick reference.

help -&gt; Python's own help system.

object? -&gt; Details about 'object'. ?object also works, ?? prints more.

Welcome to pylab, a matplotlib-based Python environment.

For more information, type 'help(pylab)'.

In [1]: import os

In [2]: os.environ['EDITOR']

&lt;monhammad&gt; hi

&lt;berrya&gt; morning

&lt;mluke&gt; good morning ev

\*\*\* Gmasetti (~chatzill

joined channel #unhrese

&lt;Gmasetti&gt; 'morning !

[11:06]

&lt;cenglert&gt; morning

&lt;ygh2&gt; hello

[11:07]

&lt;matt\_w&gt; hi

[11:13]

&lt;tnguyen&gt; hi!

-U:\*\*\*- #unhresearchtools@

12-python.org 29% L195 (0rg)

[researchtools@...]

[Index of /~schw...]

12-python.org

#unhresearchtools

researchtools@u...

Saturday, October 8, 11

19:41



:emacs:...

:compile:script:python:ipython:

:nexterror:emacs:...

:for:...

:comments:...

:if:...



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

```
-rw-r--r-- 1 researchtools researchtools 30 2011-10-06 11:30 helloworld.py
-rw-r--r-- 1 researchtools researchtools 20 2011-10-06 11:29 helloworld.py~
-rw-r--r-- 1 researchtools researchtools 12 2011-10-06 11:24 README.txt
```

researchtools@ubuntu:~/class/12\$ ipython --pylab

Python 2.7.1+ (r271:86832, Apr 11 2011, 18:05:24)

Type "copyright", "credits" or "license" for more information.

IPython 0.10.1 -- An enhanced Interactive Python.

? -&gt; Introduction and overview of IPython's features.

%quickref -&gt; Quick reference.

help -&gt; Python's own help system.

object? -&gt; Details about 'object'. ?object also works, ?? prints more.

Welcome to pylab, a matplotlib-based Python environment.

For more information, type 'help(pylab)'.

In [1]: import os

In [2]: os.environ['EDITOR']

Out[2]: 'emacsclient'

In [3]:

&lt;monhammad&gt; hi

&lt;berrya&gt; morning

&lt;mluke&gt; good morning ev

\*\*\* Gmasetti (~chatzill

joined channel #unhresear

&lt;Gmasetti&gt; 'morning !

[11:06]

&lt;cenglert&gt; morning

&lt;ygh2&gt; hello

[11:07]

&lt;matt\_w&gt; hi

[11:13]

&lt;tnguyen&gt; hi!

-U:\*\*\*- #unhresearchtools@

12-python.org 29% L195 (Org)

researchtools@u...

[researchtools@...]

[Index of /~schw...]

12-python.org

#unhresearchtools

researchtools@u...

Saturday, October 8, 11

20:45



:emacs:...

:compile:script:python:ipython:

:nexterror:emacs:...

:for:...

:comments:...

:if:...



researchtools@ubu \*Minibuf-1\*

File Edit View Search Ter File Edit Options Buffers Tools Minibuf Help

-rw-r--r-- 1 researchtools  
-rw-r--r-- 1 researchtools  
researchtools@ubuntu:~/cla  
Python 2.7.1+ (r271:86832,  
Type "copyright", "credits  
  
IPython 0.10.1 -- An enhan  
? -> Introduction :  
%quickref -> Quick referen  
help -> Python's own l  
object? -> Details about  
  
Welcome to pylab, a matp  
For more information, ty  
  
In [1]: import os  
  
In [2]: os.environ['EDITOR'  
Out[2]: 'emacsclient'  
  
In [3]: edit first.py  
Editing...Waiting for Emac  
  
<monhammad> hi  
<berrya> morning  
<mluke> good morning ev  
\*\*\* Gmasetti (~chatzill  
joined channel #unhrese  
  
<Gmasetti> 'morning !  
[11:06]  
<cenglert> morning  
<ygh2> hello  
[11:07]  
<matt\_w> hi  
[11:13]  
<tnguyen> hi!  
-U:\*\*\*- #unhresearchtools@  
Switch to buffer (default 12-python.org):

first.py All L1 (Python Server yas)

first.py All L1 (Python Server yas)



researchtools@ubu

File Edit View Search Te

```

-rw-r--r-- 1 researchtools
-rw-r--r-- 1 researchtools
researchtools@ubuntu:~/cla
Python 2.7.1+ (r271:86832,
Type "copyright", "credits
IPython 0.10.1 -- An enhan
?      -> Introduction
%quickref -> Quick referen
help    -> Python's own
object? -> Details about

Welcome to pylab, a matp
For more information, ty

In [1]: import os

In [2]: os.environ['EDITOR
Out[2]: 'emacsclient'

In [3]: edit first.py
Editing...Waiting for Emac
<monhammad> hi
<berrya> morning
<mluke> good morning ev
*** Gmasetti (~chatzill
Joined channel #unhresear
<Gmasetti> 'morning !
[11:06]
<cenglert> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
<tnguyen> hi!
-U:**- #unhresearchtools@

```

first.py

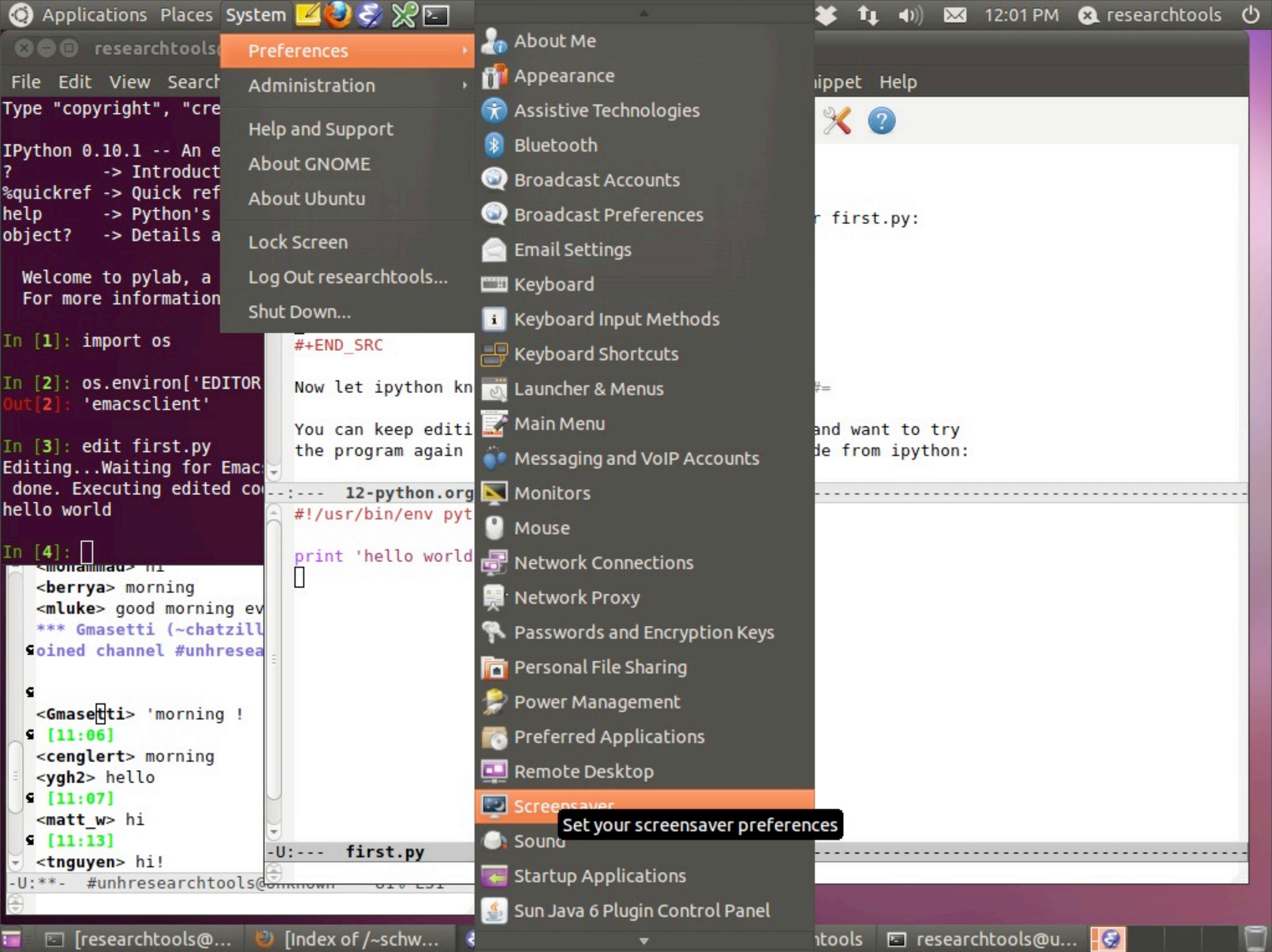
File Edit Options Buffers Tools IM-Python Python YASnippet Help

Editing...Waiting for Emacs...  
 #+END\_EXAMPLE  
  
 You can now start editing the file. Put this in your first.py:  
  
 #+BEGIN\_SRC python  
 #!/usr/bin/env python  
  
 print 'hello world'  
 #+END\_SRC  
  
 Now let ipython know you are done editing with =C-x #=  
  
 You can keep editing first.py. If you save in emacs and want to try  
 the program again from ipython, you can "run" the code from ipython:

12-python.org 36% L216 (Org)-----
 #!/usr/bin/env python  
  
 print 'hello world'

-U:\*\*- first.py All L4 (Python Server yas)-----






Saturday, October 8, 11

25:50



Applications Places System  12:02 PM researchtools

researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

```
In [2]: os.environ['EDITOR']
Out[2]: 'emacsclient'

In [3]: edit first.py
Editing...Waiting for Emacs...
done. Executing edited code...
hello world

In [4]: cat first.py
#!/usr/bin/env python

print 'hello world'

In [5]: ls -l
total 36
-rw-r--r-- 1 researchtools researchtools 18910 2011-10-06 10:00 12-python.org
-rw-r--r-- 1 researchtools researchtools 43 2011-10-06 11:57 first.py
-rw-r--r-- 1 researchtools researchtools 30 2011-10-06 11:30 helloworld.py
-rw-r--r-- 1 researchtools researchtools 20 2011-10-06 11:29 helloworld.py~
-rw-r--r-- 1 researchtools researchtools 12 2011-10-06 11:24 README.txt

In [6]: run first
```

**Chat Window:**

```
<monhammad> hi
<berry> morning
<mluke> good morning ev
*** Gmasetti (~chatzill
Joined channel #unhresear
...
<Gmasetti> 'morning !
[11:06]
<cenglert> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
<tnguyen> hi!
```

**Terminal Output:**

```
-U:--- first.py All L4 (Python yas)-----
-U:**- #unhresearchtools@unknown 010 L51
```

Saturday, October 8, 11

26:10 cat and ls inside of ipython

26:20 run first



Applications Places System

researchtools@ubu \*Minibuf-1\*

File Edit View Search Te File Edit Options Buffers Tools Minibuf Help

total 36  
-rw-r--r-- 1 researchtools  
-rw-r--r-- 1 researchtools  
-rw-r--r-- 1 researchtools  
-rw-r--r-- 1 researchtools  
-rw-r--r-- 1 researchtools

In [6]: run first  
hello world

In [7]: run first.py  
hello world

In [8]: ls -l  
total 36  
-rw-r--r-- 1 researchtools  
-rw-r--r-- 1 researchtools  
-rw-r--r-- 1 researchtools  
-rw-r--r-- 1 researchtools  
-rw-r--r-- 1 researchtools

In [9]:

<monhammad> hi  
<berrya> morning  
<mluke> good morning ev  
\*\*\* Gmasetti (~chatzill  
joined channel #unhresear

<Gmasetti> 'morning !  
[11:06]  
<cenglert> morning  
<ygh2> hello  
[11:07]  
<matt\_w> hi  
[11:13]  
<tnguyen> hi!

-U:\*\* - #unhresearchtools@

code block. The weird "<< EOF" syntax says to read in everything until it gets to a line with the string EOF on it. That could be any string, but EOF is a convention meaning "End Of File".

This is your shell trick of the day. Weird, but useful.

#+BEGIN\_SRC sh  
cat << EOF > data.csv  
1,2  
4,5  
9,-1  
EOF  
#+END\_SRC

Last class, we left off with reading a file. We read the file like this:

12-python.org 57% L346 (Org)

#!/usr/bin/env python  
print 'hello world'

first.py All L4 (Python yas)

Evaluate this sh code block on your system? (yes or no) yes

Saturday, October 8, 11

26:38 run first.py

27:05 Writing data.csv with the "<< EOF" cat shell block



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

```
total 36
-rw-r--r-- 1 researchtools researchtools 18910 2011-10-06 10:00 12-python.org
-rw-r--r-- 1 researchtools researchtools 43 2011-10-06 11:57 first.py
-rw-r--r-- 1 researchtools researchtools 30 2011-10-06 11:30 helloworld.py
-rw-r--r-- 1 researchtools researchtools 20 2011-10-06 11:29 helloworld.py~
-rw-r--r-- 1 researchtools researchtools 12 2011-10-06 11:24 README.txt
```

In [9]: ls -l

```
total 40
-rw-r--r-- 1 researchtools researchtools 18910 2011-10-06 10:00 12-python.org
-rw-r--r-- 1 researchtools researchtools 13 2011-10-06 12:06 data.csv
-rw-r--r-- 1 researchtools researchtools 43 2011-10-06 11:57 first.py
-rw-r--r-- 1 researchtools researchtools 30 2011-10-06 11:30 helloworld.py
-rw-r--r-- 1 researchtools researchtools 20 2011-10-06 11:29 helloworld.py~
-rw-r--r-- 1 researchtools researchtools 12 2011-10-06 11:24 README.txt
```

In [10]: cat data.csv

```
1,2
4,5
9,-1
```

In [11]:

```
<monhammad> hi
<berrya> morning
<mluke> good morning ev
*** Gmasetti (~chatzill
joined channel #unhresear
<Gmasetti> 'morning !
[11:06]
<cenglert> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
<tnguyen> hi!
```

```
-U:***- #unhresearchtools@
```



d the file like this:



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

9, -1

In [11]: datafile = open('data.csv')

In [12]: datafile.re

datafile.read      datafile.readline  
datafile.readinto   datafile.readlines

In [12]: datafile.re

AttributeError

Traceback (most recent call last)

/home/researchtools/class/12/first.py in &lt;module&gt;()

----&gt; 1

2

3

4

5

AttributeError: 'file' object has no attribute 're'

In [13]:

&lt;monammad&gt; hi

&lt;berrya&gt; morning

&lt;mluke&gt; good morning ev

\*\*\* Gmasetti (~chatzill

joined channel #unhrese

&lt;Gmasetti&gt; 'morning !

[11:06]

&lt;cenglert&gt; morning

&lt;ygh2&gt; hello

[11:07]

&lt;matt\_w&gt; hi

[11:13]

&lt;tnguyen&gt; hi!

-U:\*\*\*- #unhresearchtools@

Last class, we left off with reading a file. We read the file like this:

#+BEGIN\_SRC python

datafile = open('data.csv')

type( datafile )

datafile.readline()

datafile.readline()

datafile.readline()

datafile.readline()

#+END\_SRC

We can read an entire text file with one readlines (not the plural  
's') command. This is easy and works for small files, but it will get

--:\*\*\*- 12-python.org 55% L349 (Org)-----

[researchtools@... [Index of /~schw... 12-python.org #unhresearchtools researchtools@u...

Saturday, October 8, 11



Applications Places System 12:10 PM researchtools

researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

**AttributeError: 'file' object has no attribute 're'**

```
In [13]: datafile.re
datafile.read      datafile.readline
datafile.readinto  datafile.readlines

In [13]: datafile.readlin
datafile.readline  datafile.readlines

In [13]: datafile.readline()
Out[13]: '1,2\n'

In [14]: datafile.readline()
Out[14]: '4,5\n'

In [15]: datafile.readline()
Out[15]: '9,-1\n'

In [16]: datafile.readline()
Out[16]: ''

In [17]:
```

<monhammad> hi

<berrya> morning

<mluke> good morning ev

\*\*\* Gmasetti (~chatzill

joined channel #unhresear

<Gmasetti> 'morning !

[11:06]

<cenglert> morning

<ygh2> hello

[11:07]

<matt\_w> hi

[11:13]

<tnguyen> hi!

-U:\*\*\*- #unhresearchtools@

Last class, we left off with reading a file. We read the file like this:

```
#+BEGIN_SRC python
datafile = open('data.csv')
type( datafile )
datafile.readline()
datafile.readline()
datafile.readline()
datafile.readline()
#+END_SRC
```

We can read an entire text file with one readlines (not the plural 's') command. This is easy and works for small files, but it will get

--:\*\*\*- 12-python.org 55% L349 (Org)-----

Saturday, October 8, 11

28:15

Remember NOT to type just “datafile.re” or “datafile.readlin”  
Those lines come from me pressing the <TAB> key to complete



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

```
In [13]: datafile.readline()
datafile.readline  datafile.readlines
```

```
In [13]: datafile.readline()
Out[13]: '1,2\n'
```

```
In [14]: datafile.readline()
Out[14]: '4,5\n'
```

```
In [15]: datafile.readline()
Out[15]: '9,-1\n'
```

```
In [16]: datafile.readline()
Out[16]: ''
```

```
In [17]: datafile = open('data.csv')
```

```
In [18]: datafile.readlines()
Out[18]: ['1,2\n', '4,5\n', '9,-1\n']
```

```
In [19]:
```

```
<monhammad> hi
<berrya> morning
<mluke> good morning ev
*** Gmasetti (~chatzill
joined channel #unhresear
<Gmasetti> 'morning !
[11:06]
<cenglert> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
<tnguyen> hi!
```

```
lines = datafile.readlines()
print lines
print len(lines)
```

```
line = lines[0]
print 'line: ', line
line = line.strip() # remove blank space on the left or right of the string
print 'line with strip:', line
fields = line.split(',')
print 'first:', fields
```

```
print lines[0]
print lines[0].strip()
```

```
--:**- 12-python.org 58% L369 (0rg)-----
```

```
menu-bar edit copy
```

```
-U:**- #unhresearchtools@
```

```
[researchtools@... [Index of /~schw... 12-python.org #unhresearchtools researchtools@u...
```

Saturday, October 8, 11

29:55

datafile.readlines()



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

In [13]: datafile.readline()

Out[13]: '1,2\n'

In [14]: datafile.readline()

Out[14]: '4,5\n'

In [15]: datafile.readline()

Out[15]: '9,-1\n'

In [16]: datafile.readline()

Out[16]: ''

In [17]: datafile = open('data.csv')

In [18]: datafile.readlines()

Out[18]: ['1,2\n', '4,5\n', '9,-1\n']

In [19]: datafile.readlines()

Out[19]: []

In [20]: datafile = open('data.csv')

&lt;monhammad&gt; hi

&lt;berrya&gt; morning

&lt;mluke&gt; good morning ev

\*\*\* Gmasetti (~chatzill

joined channel #unhresear

&lt;Gmasetti&gt; 'morning !

[11:06]

&lt;cenglert&gt; morning

&lt;ygh2&gt; hello

[11:07]

&lt;matt\_w&gt; hi

[11:13]

&lt;tnguyen&gt; hi!

-U:\*\*\*- #unhresearchtools@

lines = datafile.readlines()

print lines

print len(lines)

line = lines[0]

print 'line: ', line

line = line.strip() # remove blank space on the left or right of the string

print 'line with strip:', line

fields = line.split(',')

print 'first:', fields

print lines[0]

print lines[0].strip()

--:\*\*\*- 12-python.org 58% L369 (0rg)-----

menu-bar edit copy



d the file like this:

not the plural  
but it will get



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

In [15]: datafile.readline()

Out[15]: '9,-1\n'

In [16]: datafile.readline()

Out[16]: ''

In [17]: datafile = open('data.csv')

In [18]: datafile.readlines()

Out[18]: ['1,2\n', '4,5\n', '9,-1\n']

In [19]: datafile.readlines()

Out[19]: []

In [20]: datafile = open('data.csv')

In [21]: lines = datafile.readlines()

In [22]: print lines

['1,2\n', '4,5\n', '9,-1\n']

In [23]:

&lt;monhammad&gt; hi

&lt;berrya&gt; morning

&lt;mluke&gt; good morning ev

\*\*\* Gmasetti (~chatzill

joined channel #unhrese

&lt;Gmasetti&gt; 'morning !

[11:06]

&lt;cenglert&gt; morning

&lt;ygh2&gt; hello

[11:07]

&lt;matt\_w&gt; hi

[11:13]

&lt;tnguyen&gt; hi!

-U:\*\*\*- #unhresearchtools@

lines = datafile.readlines()

print lines

print len(lines)

line = lines[0]

print 'line: ', line

line = line.strip() # remove blank space on the left or right of the string

print 'line with strip:', line

fields = line.split(',')

print 'first:', fields

print lines[0]

print lines[0].strip()

--:\*\*\*- 12-python.org 58% L369 (0rg)-----

menu-bar edit copy



d the file like this:

not the plural  
but it will get



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

Out[19]: []

In [20]: datafile = open('data.csv')

In [21]: lines = datafile.readlines()

In [22]: print lines  
['1,2\n', '4,5\n', '9,-1\n']In [23]: print lines[0]  
1,2In [24]: print lines[1]  
4,5In [25]: print lines[0]  
1,2

In [26]: print lines[0].strip()

```

<monhammad> hi
<berrya> morning
<mluke> good morning ev
*** Gmasetti (~chatzill
joined channel #unhresear
<Gmasetti> 'morning !
[11:06]
<cenglert> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
<tnguyen> hi!

```

-U:\*\*\*- #unhresearchtools@

```

lines = datafile.readlines()
print lines
print len(lines)

```

```

line = lines[0]
print 'line: ', line
line = line.strip() # remove blank space on the left or right of the string
print 'line with strip:', line
fields = line.split(',')
print 'first:', fields

```

```

print lines[0]
print lines[0].strip()

```

--:\*\*\*- 12-python.org 58% L369 (0rg)-----

menu-bar edit copy



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

```
In [24]: print lines[1]
4,5
```

```
In [25]: print lines[0]
1,2
```

```
In [26]: print lines[0].strip()
1,2
```

```
In [27]: print lines[0].split()
['1,2']
```

```
In [28]: print lines[0].split(',')
['1', '2\n']
```

```
In [29]: print lines[0].strip().split(',')
['1', '2']
```

```
In [30]:
```

```
<monhammad> hi
<berrya> morning
<mluke> good morning ev
*** Gmasetti (~chatzill
joined channel #unhresear
<Gmasetti> 'morning !
[11:06]
<cenglert> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
<tnguyen> hi!
```

```
-U:***- #unhresearchtools@
```

```
print 'first:', fields
```

```
print lines[0]
print lines[0].strip()
print lines[0].strip().split(',') # yikes! you can chain things together
print 'second:', lines[0].strip().split(',')
#+END_SRC
```

Run that with =F1=. You will get a lot more back than I show here:

```
#+BEGIN_EXAMPLE
./first.py
hello world
```

```
--:***- 12-python.org 59% L375 (0rg)-----
```



```

In [24]: print lines[1]
4,5

In [25]: print lines[0]
1,2

In [26]: print lines[0].st
1,2

In [27]: print lines[0].sp
['1,2']

In [28]: print lines[0].sp
['1', '2\n']

In [29]: print lines[0].st
['1', '2']

In [30]:

```

```

<monhammad> hi
<berrya> morning
<mluke> good morning ev
*** Gmasetti (~chatzill
joined channel #unhrese
<Gmasetti> 'morning !
[11:06]
<cenglert> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
<tnguyen> hi!
-U:***- #unhresearchtools

```

researchtools@ubu
\*Minibuf-1\*

File Edit Options Buffers Tools Minibuf Help

```

#+BEGIN_SRC python
datafile = open('data.csv')
type( datafile )
datafile.readline()
datafile.readline()
datafile.readline()
datafile.readline()
#+END_SRC

We can read an entire text file with one readlines (not the plural
's') command. This is easy and works for small files, but it will get
really slow for large files.

#+BEGIN_SRC python
datafile = open('data.csv')
lines = datafile.readlines()

```

```

--:***- 12-python.org 59% L369 (Org)-----
Click <mouse-2> on a completion to select it.
In this buffer, type RET to select the completion near point.

Possible completions are:
#unhresearchtools
*Messages*
*scratch*
.emacs
first.py
researchtools.ccom.nh:6667
*GNU Emacs*
*Process List*
.bashrc
12
helloworld.py

```

```

-U:***- *Completions* All L1 (Completion List)-----
Switch to buffer (default *Process List*):

```



The screenshot shows a terminal window with a Python script being executed. The script reads a file named 'data.csv' and prints the first line and its length. The output shows the first line is '1,2' and its length is 3. Below the terminal, there is a file editor window showing the same Python script. The editor has a menu bar with 'File', 'Edit', 'Options', 'Buffers', 'Tools', 'IM-Python', 'Python', 'YASnippet', and 'Help'. The 'Buffers' menu is open, showing a list of buffers including 'first.py', '12-python.org', and 'Process List'. The 'first.py' buffer is selected. The editor also shows a chat window on the left with messages from users like <berry>, <mluke>, <Gmasetti>, <cengler>, <ygh2>, <matt\_w>, and <tnghuyen>.

```
In [24]: print lines[1]
4,5

In [25]: print lines[0]
1,2

In [26]: print lines[0].st
1,2

In [27]: print lines[0].sp
['1,2']

In [28]: print lines[0].sp
['1', '2\n']

In [29]: print lines[0].st
['1', '2']

In [30]:
```

```
<berry> morning
<mluke> good morning ev
*** Gmasetti (~chatzill
joined channel #unhrese

<Gmasetti> 'morning !
[11:06]
<cengler> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
<tnghuyen> hi!
```

```
#!/usr/bin/env python
print 'hello world'

We can read an entire text file with one readlines (not the plural
's') command. This is easy and works for small files, but it will get
really slow for large files.

#+BEGIN_SRC python
datafile = open('data.csv')
lines = datafile.readlines()
print lines
print len(lines)

line = lines[0]
print 'line: ', line
line = line.strip() # remove blank space on the left or right of the string
--:**- 12-python.org 59% L369 (Org)-----
```



Applications Places System

researchtools@ubu first.py

File Edit View Search Te File Edit Options Buffers Tools IM-Python Python YASnippet Help

In [24]: print lines[1]  
4,5

In [25]: print lines[0]  
1,2

In [26]: print lines[0].st  
1,2

In [27]: print lines[0].sp  
['1,2']

In [28]: print lines[0].sp  
['1', '2\n']

In [29]: print lines[0].st  
['1', '2']

In [30]:

```
#!/usr/bin/env python

print 'hello world'

datafile = open('data.csv')
lines = datafile.readlines()
print lines
print len(lines)

line = lines[0]
print 'line: ', line
line = line.strip() # remove blank space on the left or right of the string
print 'line with strip:', line
fields = line.split(',')
print 'first:', fields

print lines[0]
print lines[0].strip()
print lines[0].strip().split(',') # yikes! you can chain things together
print 'second:', lines[0].strip().split(',')
```

<monhammad> hi  
<berrya> morning  
<mluke> good morning ev  
\*\*\* Gmasetti (~chatzill  
joined channel #unhresear  
  
<Gmasetti> 'morning !  
[11:06]  
<cenglert> morning  
<ygh2> hello  
[11:07]  
<matt\_w> hi  
[11:13]  
<tnguyen> hi!

-U:\*\*\*- first.py All L4 (Python yas)

-U:\*\*\*- #unhresearchtools@...

Saturday, October 8, 11

34:45 Paste with C-y



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

```
In [25]: print lines[0]
1,2
```

```
In [26]: print lines[0].strip()
1,2
```

```
In [27]: print lines[0].split()
['1,2']
```

```
In [28]: print lines[0].split(',')
['1', '2\n']
```

```
In [29]: print lines[0].strip().split(',')
['1', '2']
```

```
In [30]: run first.py
hello world
```

```
In [31]:
```

```
<monhammad> hi
<berrya> morning
<mluke> good morning ev
*** Gmasetti (~chatzill
joined channel #unhresear
<Gmasetti> 'morning !
[11:06]
<cenglert> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
<tnguyen> hi!
```

```
-U:**- #unhresearchtools@
```

ippet Help



or right of the string

chain things together



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

```
In [29]: print lines[0].strip().split(',')
['1', '2']
```

```
In [30]: run first.py
hello world
```

```
In [31]: run first.py
hello world
['1,2\n', '4,5\n', '9,-1\n']
3
line: 1,2
```

```
line with strip: 1,2
first: ['1', '2']
1,2
```

```
1,2
['1', '2']
second: ['1', '2']
```

```
In [32]:
```

```
<monhammad> hi
<berrya> morning
<mluke> good morning ev
*** Gmasetti (~chatzill
joined channel #unhresear
<Gmasetti> 'morning !
[11:06]
<cenglert> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
<tnguyen> hi!
```

```
-U:***- #unhresearchtools@
```

```
-U:--- first.py All L21 (Python yas)-----
```






```
Wrote /home/researchtools/class/12/first.py
```

ippet Help



or right of the string

chain things together

 [researchtools@...  [Index of /~schw...  first.py  #unhresearchtools  researchtools@u...

Saturday, October 8, 11

35:35



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

In [31]: run first.py

hello world

['1,2\n', '4,5\n', '9,-1\n']

3

line: 1,2

line with strip: 1,2

first: ['1', '2']

1,2

1,2

['1', '2']

second: ['1', '2']

In [32]: lines

Out[32]: ['1,2\n', '4,5\n', '9,-1\n']

In [33]: line = li

liaupunov linalg

lines

list

license line

linspace

little\_endian

In [33]: line = lines[0]

&lt;monhammad&gt; hi

&lt;berrya&gt; morning

&lt;mluke&gt; good morning ev

\*\*\* Gmasetti (~chatzill

joined channel #unhresear

&lt;Gmasetti&gt; 'morning !

[11:06]

&lt;cenglert&gt; morning

&lt;ygh2&gt; hello

[11:07]

&lt;matt\_w&gt; hi

[11:13]

&lt;tnguyen&gt; hi!

-U:\*\*- #unhresearchtools@

print len(lines)

line = lines[0]

print 'line: ', line

line = line.strip() # remove blank space on the left or right of the string

print 'line with strip:', line

fields = line.split(',')

print 'first:', fields

print lines[0]

print lines[0].strip()

print lines[0].strip().split(',') # yikes! you can chain things together

print 'second:', lines[0].strip().split(',')

ippet Help



[researchtools@... [Index of /~schw... first.py #unhresearchtools researchtools@u...

Saturday, October 8, 11

36:05



researchtools@ubuntu: ~/class/12

File Edit View Search Term

license line

In [33]: line = lines[0]

In [34]: print line

1,2

In [35]: line = line.strip()

In [36]: line

Out[36]: '1,2'

In [37]: print line

1,2

In [38]: fields = line.split

In [39]: fields

Out[39]: ['1', '2']

In [40]:

&lt;monhammad&gt; hi

&lt;berrya&gt; morning

&lt;mluke&gt; good morning eve

\*\*\* Gmasetti (~chatzill@

joined channel #unhresearch

&lt;Gmasetti&gt; 'morning !

[11:06]

&lt;cenglert&gt; morning

&lt;ygh2&gt; hello

[11:07]

&lt;matt\_w&gt; hi

[11:13]

&lt;tnguyen&gt; hi!

-U:\*\*\* #unhresearchtools@U

12-python.org

File Edit Options Buffers Tools Org Tbl Help



```
datafile = open('data.csv')
lines = datafile.readlines()
print lines
print len(lines)

line = lines[0]
print 'line: ', line
line = line.strip() # remove blank space on the left or right of the string
print 'line with strip:', line
fields = line.split(',')
print 'first:', fields

print lines[0]
print lines[0].strip()
print lines[0].strip().split(',') # yikes! you can chain things together
print 'second:', lines[0].strip().split(',')
```

-:\*\*\* 12-python.org 61% L380 (Org)-----

#!/usr/bin/env python

print 'hello world'

```
datafile = open('data.csv')
lines = datafile.readlines()
print lines
print len(lines)
```

```
line = lines[0]
print 'line: ', line
line = line.strip() # remove blank space on the left or right of the string
print 'line with strip:', line
fields = line.split(',')
print 'first:', fields
```

-U:--- first.py Top L6 (Python yas)-----



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

In [38]: fields = line.split(',')  
In [39]: fields  
Out[39]: ['1', '2']

In [40]:

In [41]:

In [42]:

In [43]: for item in [ 1, 3, 6, 'nine']:  
.....: print item  
.....:1  
3  
6  
nine

In [44]:

```
<monhammad> hi  
<berrya> morning  
<mluke> good morning eve  
*** Gmasetti (~chatzill@  
joined channel #unhresearch  
  
<Gmasetti> 'morning !  
[11:06]  
<cenglert> morning  
<ygh2> hello  
[11:07]  
<matt_w> hi  
[11:13]  
<tnguyen> hi!
```

-U:\*\*\*- #unhresearchtools@U

comes to huge files. Let's try some for loops.

**\*Try these in ipython\***

```
#+BEGIN_SRC python  
for item in [ 1, 3, 6, 'nine' ]:  
    print item  
#+END_SRC
```

Here is where I stop and talk about indentation controlling the beginning and ending of "blocks"!!!

A file also works as a sequence.

```
#+BEGIN_SRC python
```

---:\*\*\*- 12-python.org 62% L396 (0rg)-----

Saturday, October 8, 11

37:10

Indenting!



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

```
.....: print item
.....:
.....:
```

```
1
3
6
nine
```

```
In [44]: myfile = open('data.csv')
```

```
In [45]: for line in myfile:
.....:     print line
```

```
.....:
.....:
```

```
1,2
```

```
4,5
```

```
9,-1
```

```
In [46]:
```

```
<monhammad> hi
```

```
<berrya> morning
```

```
<mluke> good morning eve
```

```
*** Gmasetti (~chatzill@
```

```
joined channel #unhresearch
```

```
$
```

```
$
```

```
<Gmasetti> 'morning !
```

```
$ [11:06]
```

```
<cenglert> morning
```

```
<ygh2> hello
```

```
$ [11:07]
```

```
<matt_w> hi
```

```
$ [11:13]
```

```
<tnguyen> hi!
```

```
-U:***- #unhresearchtools@U
```

```
A file also works as a sequence.
```

```
#+BEGIN_SRC python
```

```
myfile = open('data.csv')
```

```
for line in myfile:
```

```
    print line
```

```
#+END_SRC
```

```
Gives:
```

```
#+BEGIN_EXAMPLE
```

```
1,2
```

```
4,5
```

```
-U:***- #unhresearchtools@U
```

```
--:***- 12-python.org 64% L410 (0rg)-----
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-U:***- #unhresearchtools@U
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-U:***- #unhresearchtools@U
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-U:***- #unhresearchtools@U
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-U:***- #unhresearchtools@U
```

```
--:***- 12-python.org 64% L410 (0rg)-----
```

Saturday, October 8, 11

39:05



```
.....  
.....  
1  
3  
6  
nine
```

```
In [44]: myfile = open('data
```

```
In [45]: for line in myfile:
```

```
.....:     print line
```

```
.....:
```

```
.....:
```

```
1,2
```

```
4,5
```

```
9,-1
```

```
In [46]: for line in myfile:
```

```
print line.strip()
```

```
<monammad> hi
```

```
<berry> morning
```

```
<mluke> good morning eve
```

```
*** Gmasetti (~chatzill@
```

```
joined channel #unhresear
```

```
<Gmasetti> 'morning !
```

```
[11:06]
```

```
<cenglert> morning
```

```
<ygh2> hello
```

```
[11:07]
```

```
<matt_w> hi
```

```
[11:13]
```

```
<tnguyen> hi!
```

```
-U:***- #unhresearchtools@U
```



```
#!/usr/bin/env python  
  
print 'hello world'  
  
datafile = open('data.csv')  
lines = datafile.readlines()  
print lines  
print len(lines)  
  
line = lines[0]  
print 'line: ', line  
line = line.strip() # remove blank space on the left or right of the string  
print 'line with strip:', line  
fields = line.split(',')  
print 'first:', fields  
  
print lines[0]  
print lines[0].strip()  
print lines[0].strip().split(',') # yikes! you can chain things together  
print 'second:', lines[0].strip().split(',')  
  
for line in myfile:  
    print line.strip()  
    print '-----'  
  
print 'done'
```

```
-U:***- first.py All L27 (Python yas)-----
```



```
researchtools@ubuntu: ~/class/12
File Edit View Search Terminal Help

9, -1

In [46]: for line in myfile:
        print line.strip()
        ....:     print '----'
        ....:     print 'done'

-----



File "<ipython console>", line 4
      print 'done'
      ^
SyntaxError: invalid syntax

In [48]: for line in myfile:
        print line.strip()
        print '----'
        ....:
        ....:

In [51]:
<monhammad> hi
<berrya> morning
<mluke> good morning eve
*** Gmasetti (~chatzill@
joined channel #unhresearch

<Gmasetti> 'morning !
[11:06]
<cenglert> morning
<ygh2> hello
[11:07]
<matt_w> hi
[11:13]
<tnguyen> hi!

-U:***- #unhresearchtools@U
-U:--- first.py All L26 (Python yas)
Wrote /home/researchtools/class/12/first.py
```

```
Snippet Help
 

t or right of the string

print lines[0].strip().split( , ) # yikes! you can chain things together
print 'second:', lines[0].strip().split(',')

for line in myfile:
    print line.strip()
    print '----'

print 'done'
```



researchtools@ubuntu: ~/class/12

File Edit View Search Terminal Help

```
In [48]: for line in myfile:
        print line.strip()
        print '-----'
```

```
.....:
.....:
```

```
In [51]: myfile = open('data.csv')
```

```
In [52]: for line in myfile:
        print line.strip()
        print '-----'
```

```
.....:
.....:
```

```
1,2
```

```
-----
```

```
4,5
```

```
-----
```

```
9,-1
```

```
-----
```

```
In [55]:
```

```
<monhammad> hi
```

```
<berrya> morning
```

```
<mluke> good morning eve
```

```
*** Gmasetti (~chatzill@
```

```
joined channel #unhresearch
```

```
<Gmasetti> 'morning !
```

```
[11:06]
```

```
<cenglert> morning
```

```
<ygh2> hello
```

```
[11:07]
```

```
<matt_w> hi
```

```
[11:13]
```

```
<tnguyen> hi!
```

```
-U:***- #unhresearchtools@U
```

```
-U:--- first.py All L26 (Python yas)
```

```
Wrote /home/researchtools/class/12/first.py
```

```
Wrote /home/researchtools/class/12/first.py
```

```
Wrote /home/researchtools/class/12/first.py
```

```
Wrote /home/researchtools/class/12/first.py
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Wrote /home/researchtools/class/12/first.py
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Wrote /home/researchtools/class/12/first.py
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Wrote /home/researchtools/class/12/first.py
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Wrote /home/researchtools/class/12/first.py
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Wrote /home/researchtools/class/12/first.py
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Wrote /home/researchtools/class/12/first.py
```

```
Wrote /home/researchtools/class/12/first.py
```

```
Wrote /home/researchtools/class/12/first.py
```

Snippet Help



t or right of the string

Saturday, October 8, 11

41:45



```
print '----'
....:
....:
```

```
In [51]: myfile = open('data.csv')
```

```
In [52]: for line in myfile:
print line.strip()
print '----'
....:
....:
```

```
1,2
```

```
----
```

```
4,5
```

```
----
```

```
9,-1
```

```
----
```

```
In [55]: print 'done'
```

```
done
```

```
In [56]:
```

```
<monhammad> hi
```

```
<berrya> morning
```

```
<mluke> good morning eve
```

```
*** Gmasetti (~chatzill@
```

```
joined channel #unhresearch
```

```
$
```

```
$
```

```
<Gmasetti> 'morning !
```

```
$ [11:06]
```

```
<cenglert> morning
```

```
<ygh2> hello
```

```
$ [11:07]
```

```
<matt_w> hi
```

```
$ [11:13]
```

```
<tnguyen> hi!
```

```
-U:***- #unhresearchtools@U
```



```
#!/usr/bin/env python

print 'hello world'

datafile = open('data.csv')
lines = datafile.readlines()
print lines
print len(lines)

line = lines[0]
print 'line: ', line
line = line.strip() # remove blank space on the left or right of the string
print 'line with strip:', line
fields = line.split(',')
print 'first:', fields

print lines[0]
print lines[0].strip()
print lines[0].strip().split(',') # yikes! you can chain things together
print 'second:', lines[0].strip().split(',')

for line in myfile:
    print line.strip()
    print '----'

print 'done'
```