UNIVERSITY OF MICHIGAN INFORMATICS
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Installing Python

Increasingly a number of School of Information and EECS courses are using Python as a programming language. Python is viewed as a good combination of ease of use and powerful capabilities. Python is often used to do data manipulation and processing. If you are not planning to be a professional programmer (i.e. you are a biologist or user interface designer) and you only have time or energy to learn one programming language - know one computer language – that language should be Python.

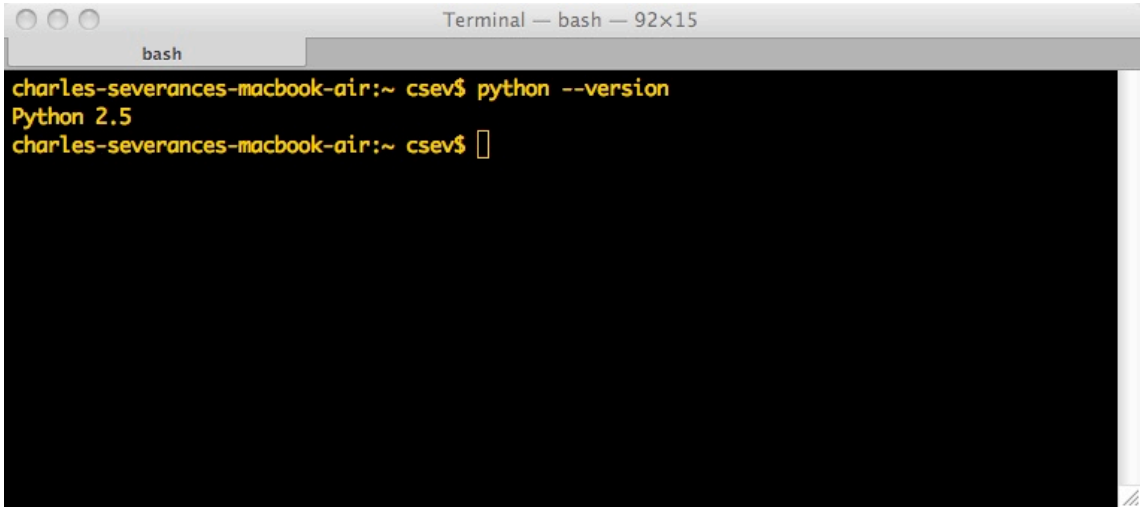
This handout covers getting Python installed in a Macintosh, Windows XP, and Windows Vista systems and shows you how to run your first Python program. We will not cover how to edit the Python source code – we recommend JEdit (www.jedit.org) as a programmer's editor. You will likely end up with problems if you try to use Notepad (Windows) or TextEdit (Macintosh) to edit your Python code. You can also use the built in Python editor (IDLE) to edit your Python programs – this has some advantages and disadvantages as well – particularly as your programs get more sophisticated.

This handout will show you how to run Python programs in the terminal interface in each of the operating systems. While this might seem a little clunky at first for folks used to point and click interfaces – we find that you feel more powerful and capable in the command line interface – once you get used to it.

Installing Python on a Macintosh

The good news is that Python is already installed on all recent Macintosh systems. To check which version of Python you have, launch a terminal window under Applications -> Utilities -> Terminal and type the command:

```
python –version
```



You will be using Terminal a lot – so you might want to keep it in your dock at the bottom of the screen. To do this click on the Terminal icon in the dock and hold for a few seconds – a menu will pop up – select **Keep in Dock** – and Terminal will always be there with one click to launch it.

You may want to upgrade the version of Python you have on your Macintosh – simply go to www.python.org and download and install a newer version. Afterwards make sure to go into your terminal program and check to see that you are running the correct version of Python using the above command.

Macintosh users can skip the Windows installation and jump to the "Running Python Interactively" section.

Installing Python on Windows

Python is very popular on Windows systems but it does not come pre-installed as it does on the Macintosh. The installation is very simple – but we have to configure some system settings after the installation. Go to

http://www.python.org/download/

And search for the Windows Installer – download the installer and save it to your Desktop. When the download completes – simply click on the installer to begin the installation process.

During the installation you may see several dialog boxes asking you to trust or approve the installer to do something. Make sure to say "yes" or "approve" these actions so the installation can continue. Windows is just being cautious – the time to worry about these pop-ups is when

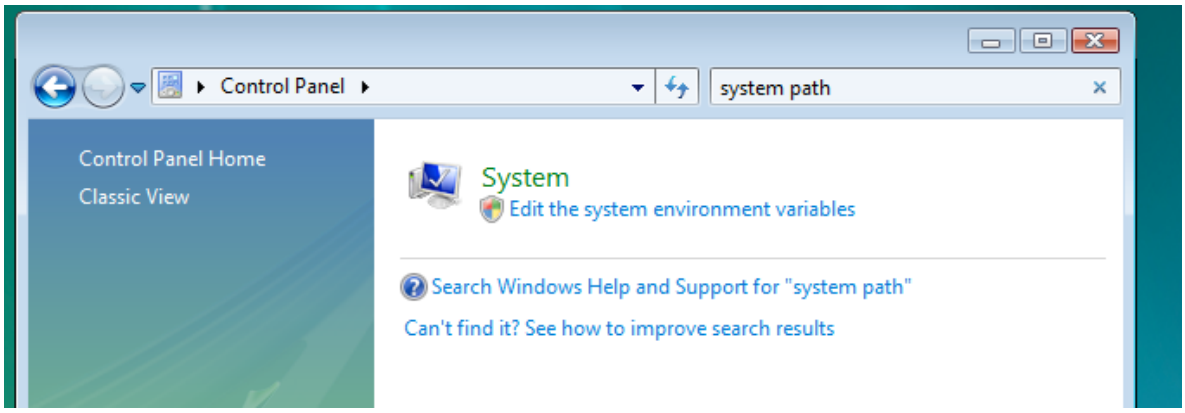
Once the Python installation is complete, you need to set it u in the Windows Command Line.

Setting up Python For Windows Command Line

This step makes it possible to run Python from the Windows Command Line. It is a bit convoluted - but you should be able to follow the steps and get it to work. If you are uncomfortable following these steps – get some help – you only have to do this **once** and then never again – so you don't have to really learn this. A skilled computer user can do this for you in a few seconds with these instructions.

First you need to go into the Control Panel and get to the System Properties Dialog. There are different steps between Vista and XP to get th System Properties – once you get to System Properties – the steps are the same for both versions of Windows.

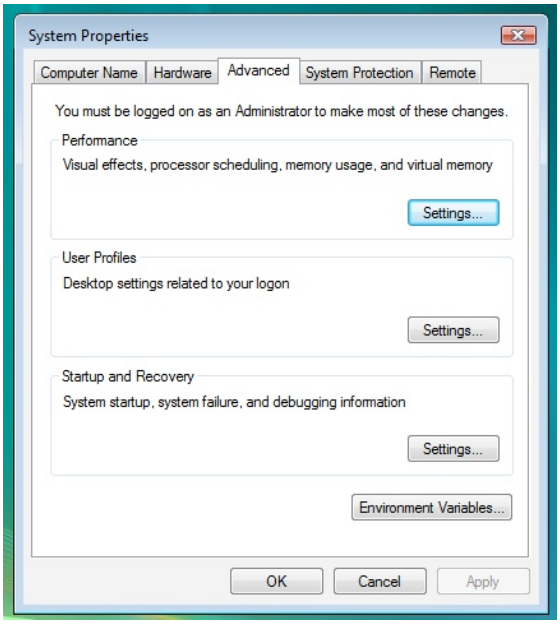
Windows Vista Initial Steps: Go to **Start -> Control Panel** (control panel is usually on the right side of the **Start** pop up on the third up from the bottom). Then in the upper right of the control panel in the search area, type **system path -** Vista will present you with an option titled "Edit the System Environment Variables".



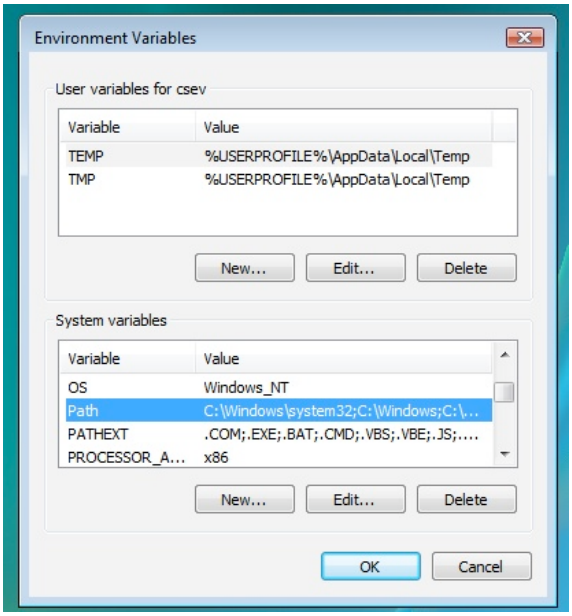
You will get a security dialog – then press **Continue** and move forward to see the System Properties dialog box.

Windows XP Initial Steps: Go to **Start -> Control Panel** – once you are in Control Panel, depending on whether you are in classic mode or not, you may have to Select **Performance and Maintenance** and then click on **System** to bring up the System Properties dialog.

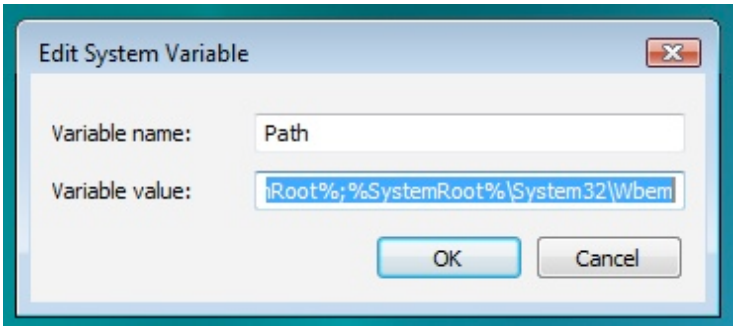
Windows – Both Versions:



Press the button labeled **Environment Variables** – in the section titled System Variables scroll down until you find the one called **Path**.



After you have selected the **Path** variable press the **Edit** button – it will bring up the following interface.

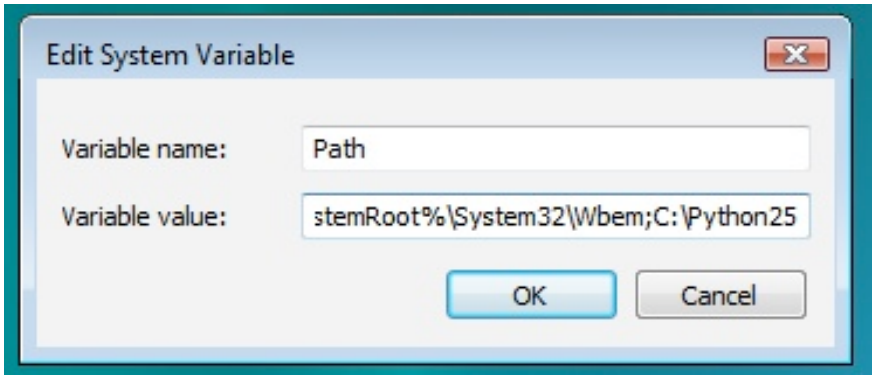


Do this next step carefully. Put your cursor in the text area labeled "Variable Value" and use your right cursor to move to the very end of the string and then add the following text to the end of the **Path** string. In the above example we want to add the text at the end of the "Wbem". Your existing **Path** string may look different – all that matters is that you add this text at the end of whatever is there.

;C:\Python25

Note if you are installing a version later than 2.5.x, you will need to change the "25" to whatever directory that was used to install Python (i.e. the path might be C:\Python26)

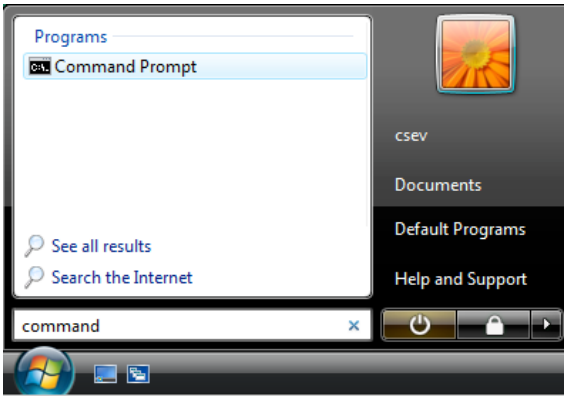
When you are done – it should look like this.



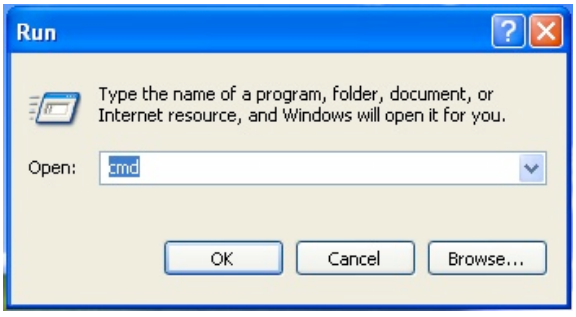
If you are unsure if you are doing this right – just press Cancel a bunch of times and get some help. But if it looks right (you have added the **;C:\Python25** to the end of the path string with no extra spaces) – then press **OK** and save the Path System Variable. The close the rest of the Dialog boxes to insure the settings are saved.

Then check to see if this worked by starting the command line interface.

Windows Vista Instructions: Press **Start** (the round Window icon in the lower right) and in the space called **Start Search** type in the word **command** – Vista will find the "Command Prompt" – select and launch the Command Prompt.



Windows XP Instructions: To start the command line interface to Windows XP, do **Start -> Run -> cmd -> OK** – You will see an interface that looks as follows after you press **Start -> Run** – simply enter **cmd** and press **OK**.

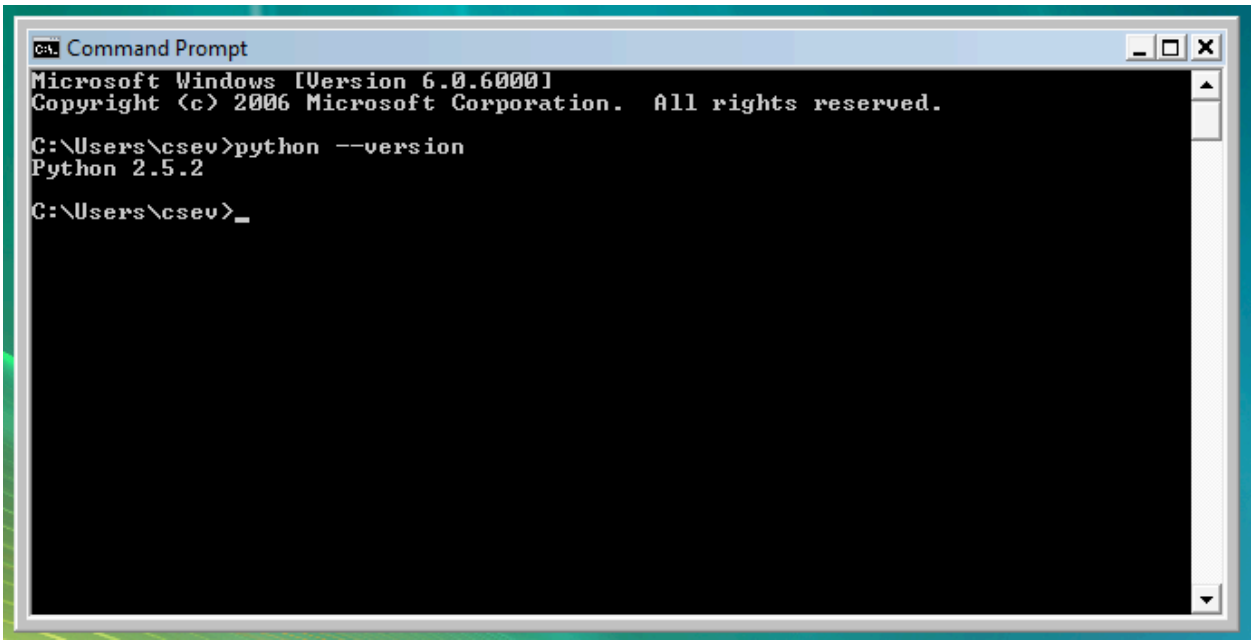


Windows Both Versions Instructions:

Then bring up the command window and type

python --version

If all has went well – you should see the following screen.



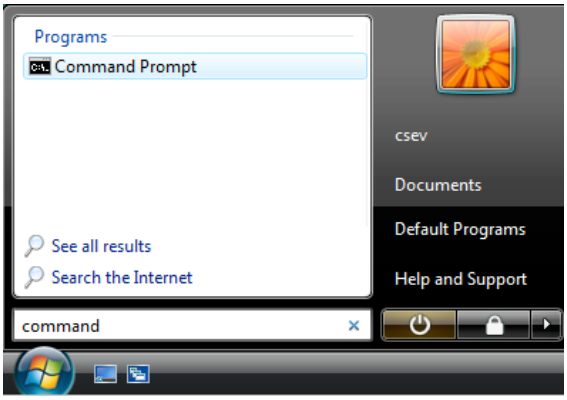
If you make a mistake – you can try to fix the **Path** variable more than once – but make sure to close and re-open the command line interface each time you change the **Path** variable – so the command line interface reloads the new **Path** Variable. You can type this command in the command line to see the contents of the Path variable:

echo %PATH%

Hopefully you get through this step – or get someone to help you through the step and then you can forget about this and just use Python from then on.

Using Python In the Windows Command Line Interface

Windows Vista: To start the command line interface to Windows Vista, press the Window in the lower right and in the space called **Start Search** type in the word **command** – Vista will find the "Command Prompt" – select and launch the Command Prompt.



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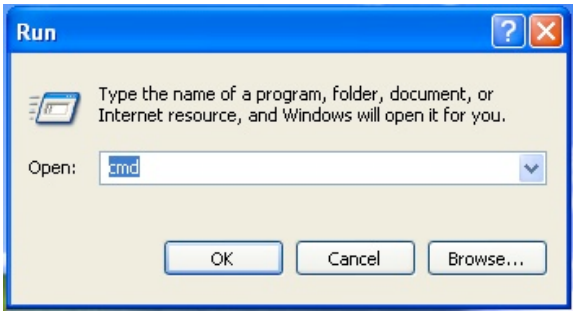
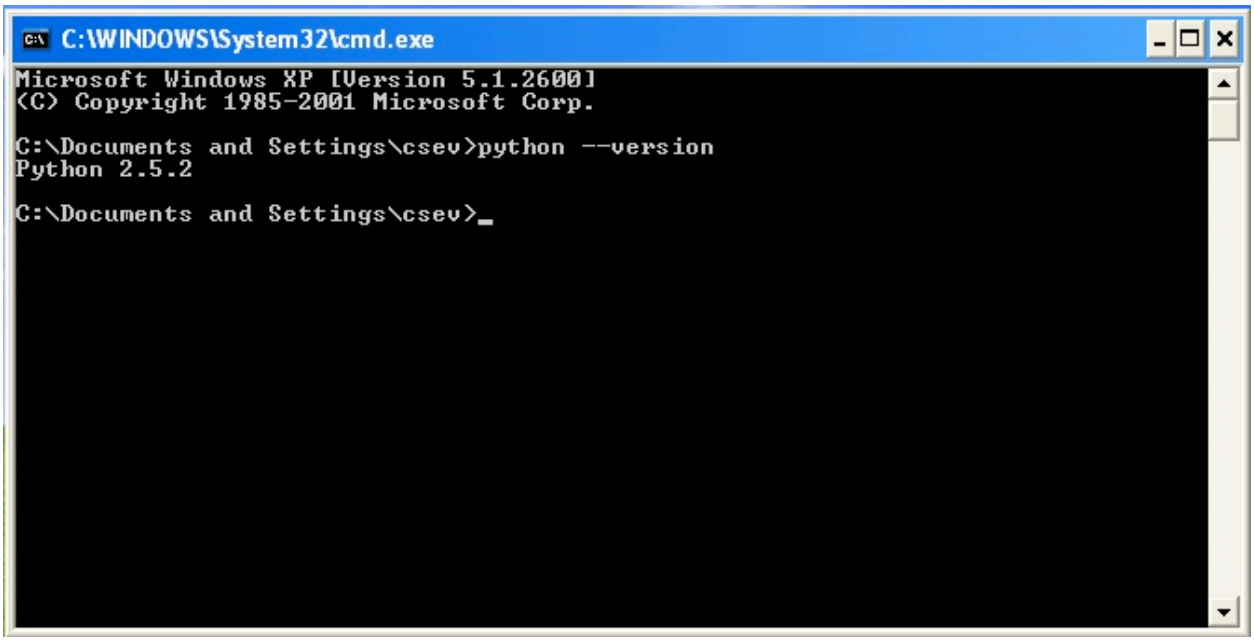


Once you are in the command line interface in Vista *or* XP (or Macintosh for that matter) – simply type

python –version

To see what version of Python you are running. This also verifies that Python is correctly installed.



Running Python Interactively

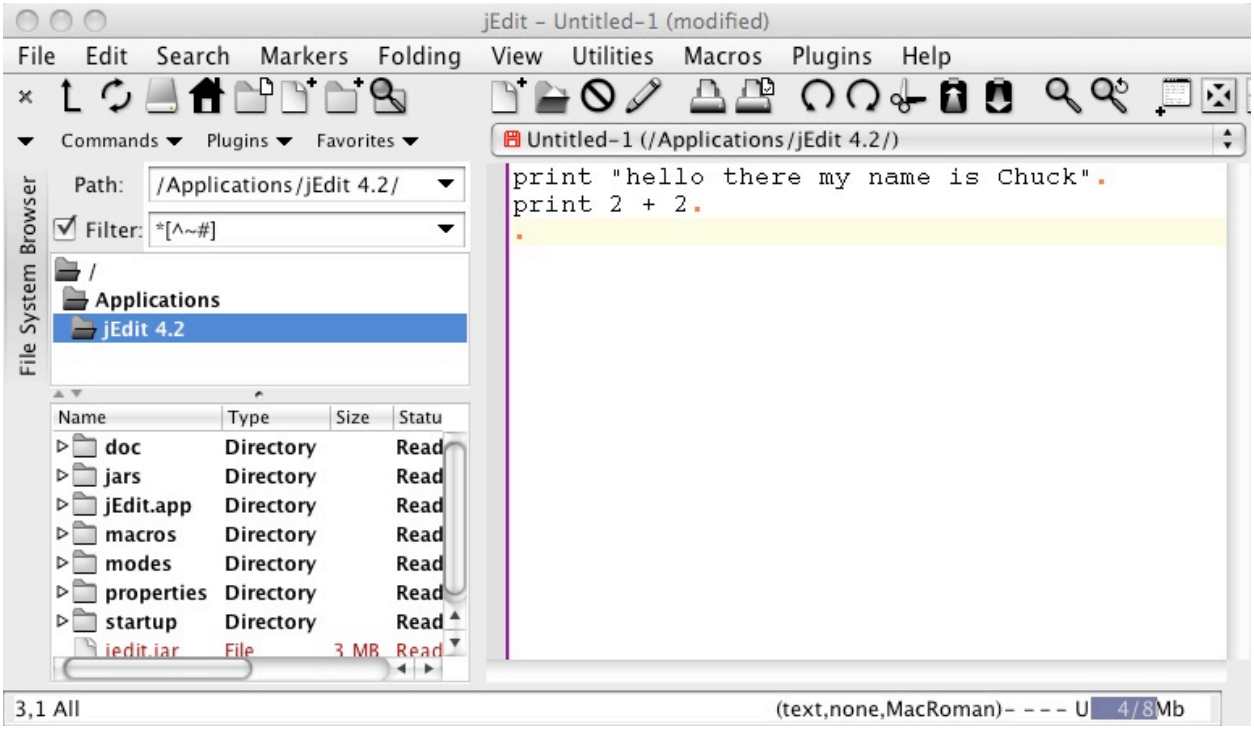
You can use Python without actually writing a program – you can just run Python and give it Python code interactively. Start a command line interface (Terminal, cmd, command – depending on your operating system) and run Python with no parameters. You will see a ">>>" prompt which indicates Python wants you to "talk Python" to it.

Type the following into your command line or terminal window – your inputs are in bold. The exit() command terminates your interactive Python session.

python
Python 2.5 (r25:51918, Sep 19 2006, 08:49:13)
[GCC 4.0.1 (Apple Computer, Inc. build 5341)] on darwin
Type "help", "copyright", "credits" or "license" for more information.
>>> **print "Hello my name is chuck"**
Hello my name is chuck
>>> **print 2 + 2**
4
>>> **exit()**

Writing Your First Python Program (Assuming JEdit)

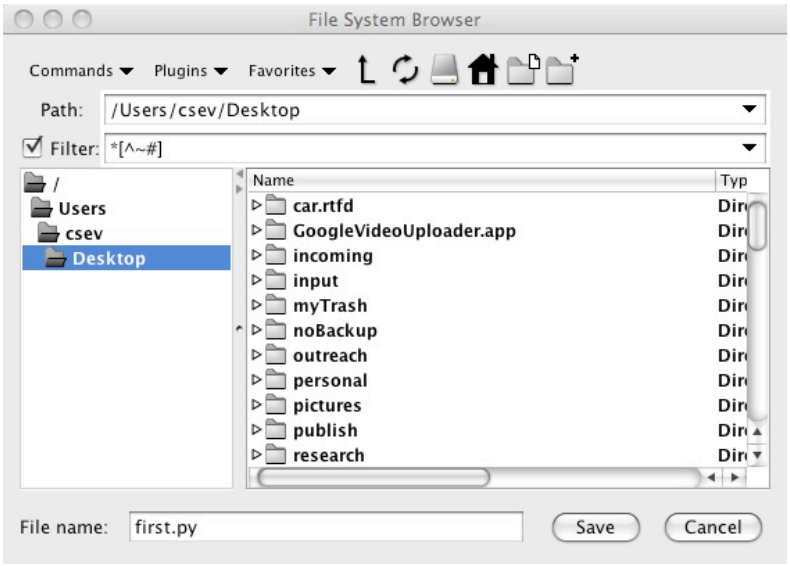
Open JEdit and type in the code shown below:



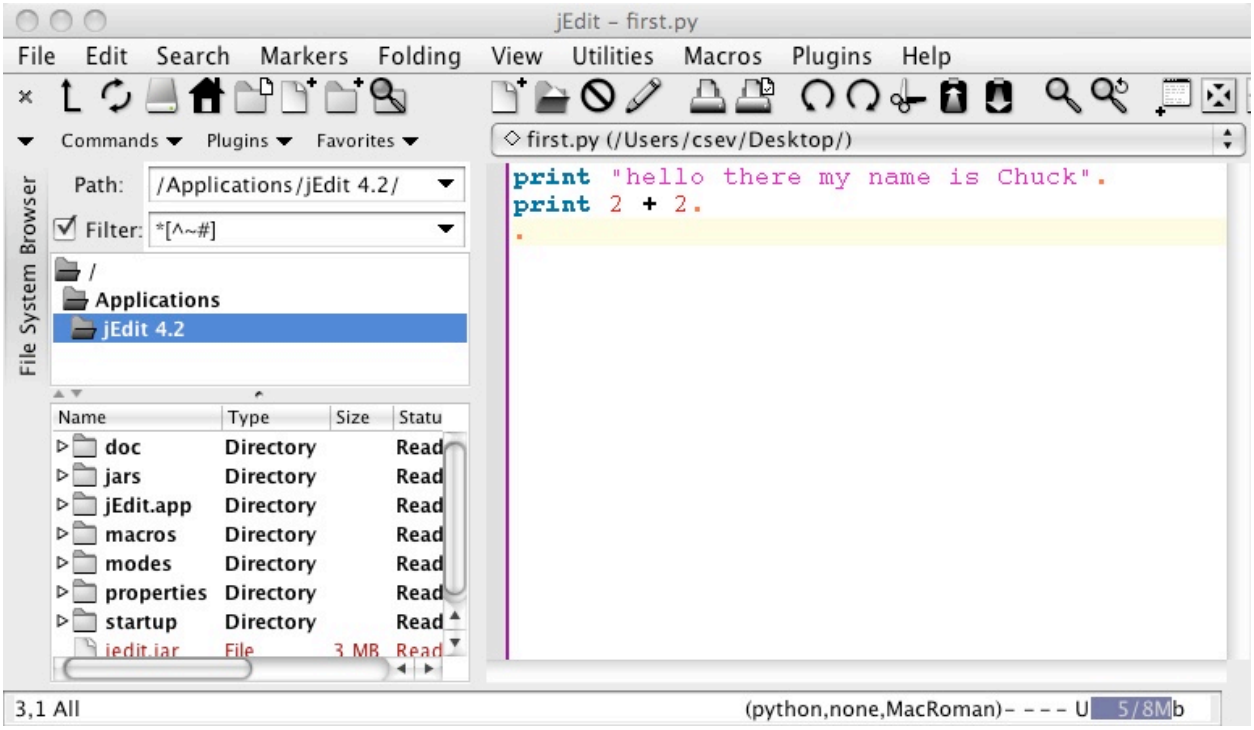
You will note the red "floppy disk" icon next to the file name that indicates that the text has not yet been saved into a file. Select File -> Save As – then navigate to your Desktop. The Desktop is different for each operating system:

Macintosh: /Users/csev/Desktop
Windows XP: C:\Documents and Settings\csev\Desktop
Windows Vista: C:\Users\csev\Desktop

Name the file **first.py** and press **Save** to save the file.



After you press **Save**, JEdit should look as follows (See below for Vista and XP):



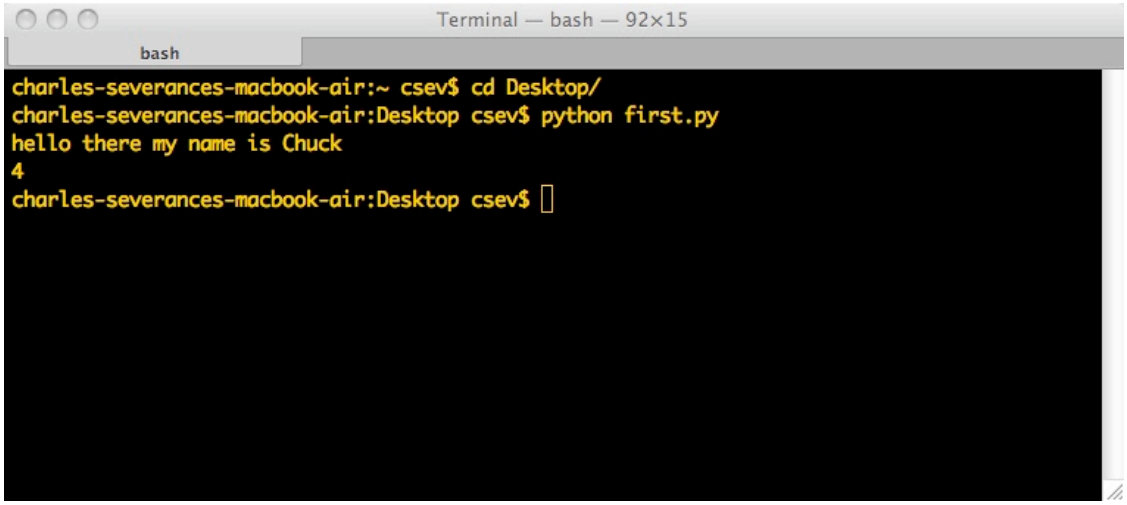
Then open the command line interface and switch to the Desktop files by using the command

cd Desktop

And then type

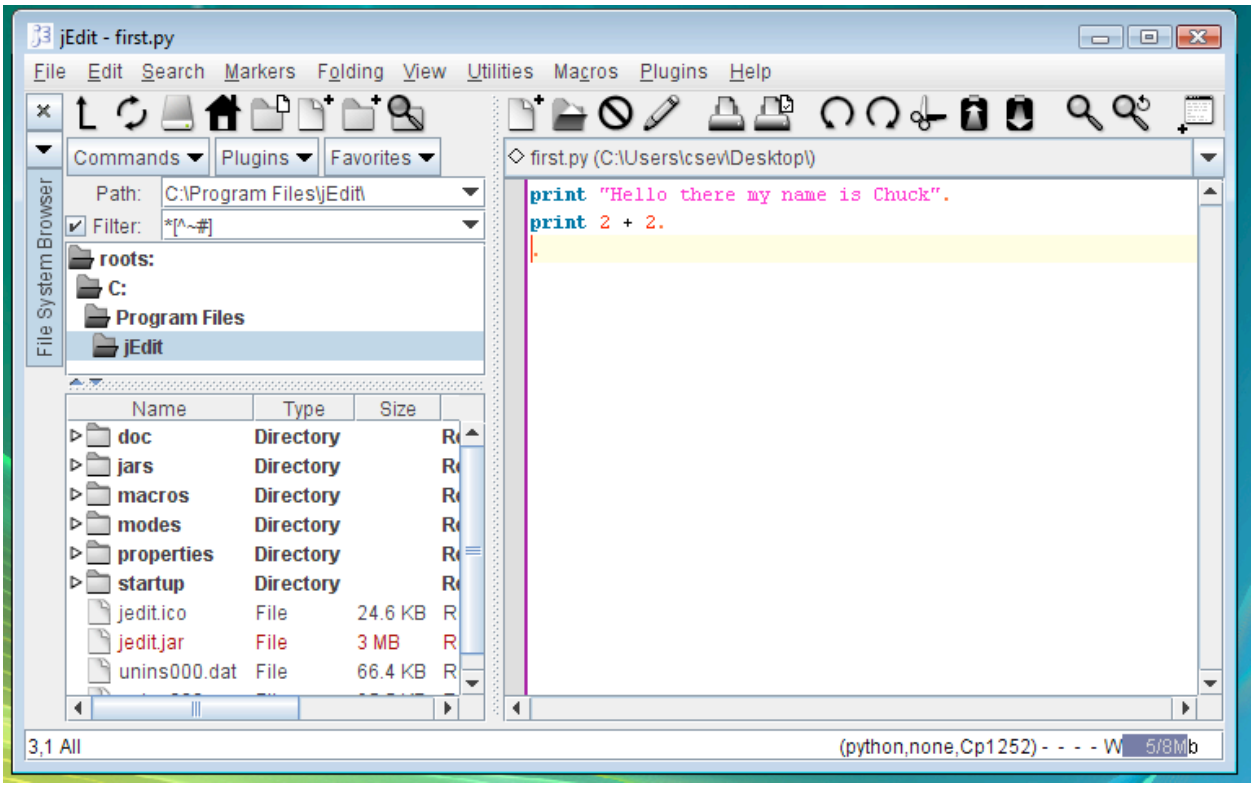
python first.py

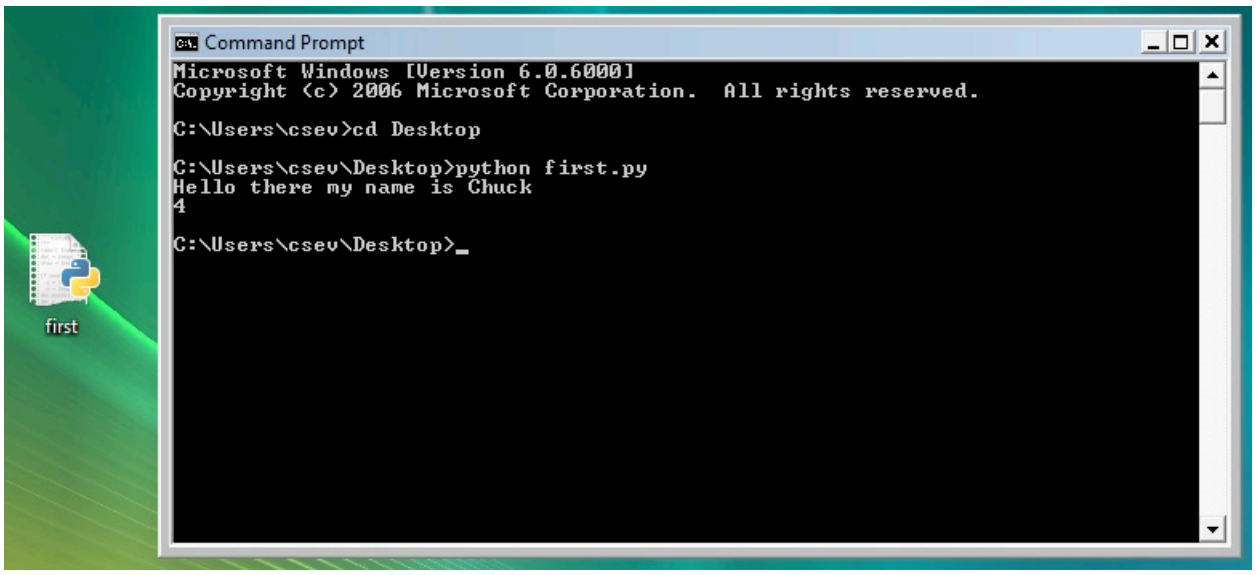
It should look as follows (Macintosh):



Congratulations – you have run your first Python Program – give yourself a pat on the back.

If you are in Windows Vista, editing and running the program will look as follows:





If you are running Windows XP, editing and running the program will look as follows: