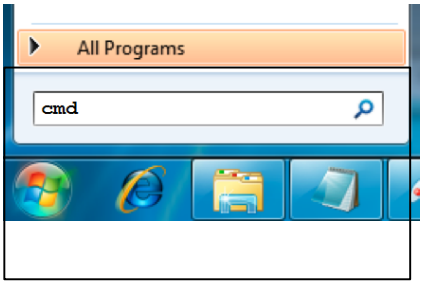
# Command-Line Compiling With Python 3

Your system should already have Python installed. To make sure one is installed *and working* on your system, go to a "command prompt" and enter the command `python -V`.

**What's A Command Prompt?**
Just about all systems have a command prompt. It's a solid-color window (usually black or white) with a message (or "prompt") that indicates it's ready for a user to type a command. After a command gets typed, it gets sent to the system when the user presses the ENTER (or "return") key. Before we can talk about running a Python program, we need to get a command prompt so that we can type commands.

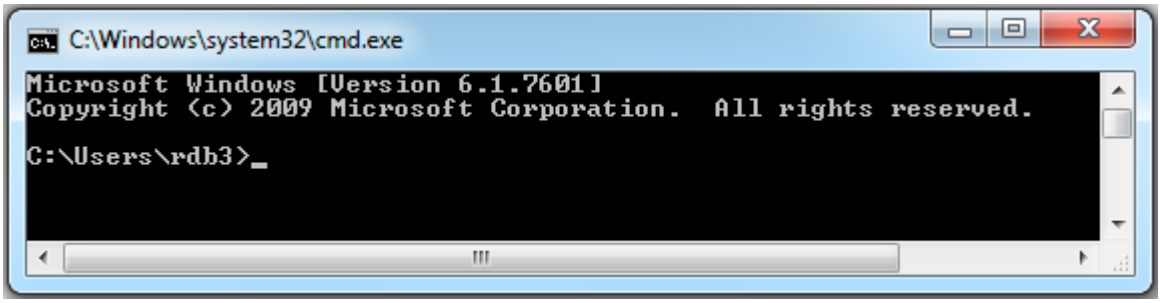
How you get to a command prompt depends on the system you're using. On a Mac, you simply run the Terminal app that is part of its OSX operating system – it's in the Applications folder. On Linux and UNIX systems, you probably start out with a command prompt when the computer boots up.

In Microsoft Windows there are lots of ways to get to a command prompt, so take your pick. One way is to use either the "run" or "search" option, and enter the three letters `cmd` – that should find a file named "cmd" or "cmd.exe", which you would then choose and run.

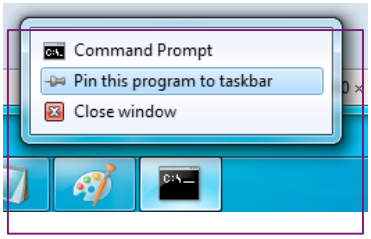



Another way is to look for the command prompt icon on the desktop or in the menu system, and click it.

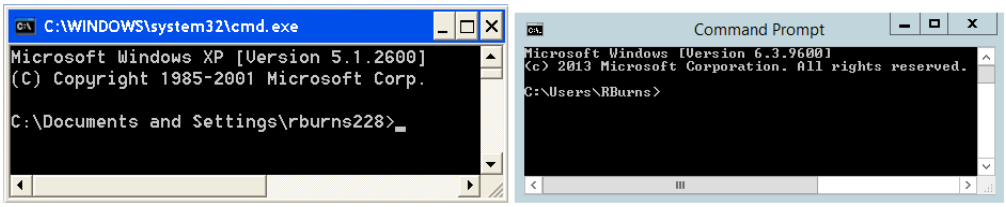
If any of this works, you'll see something similar to this – a command prompt:



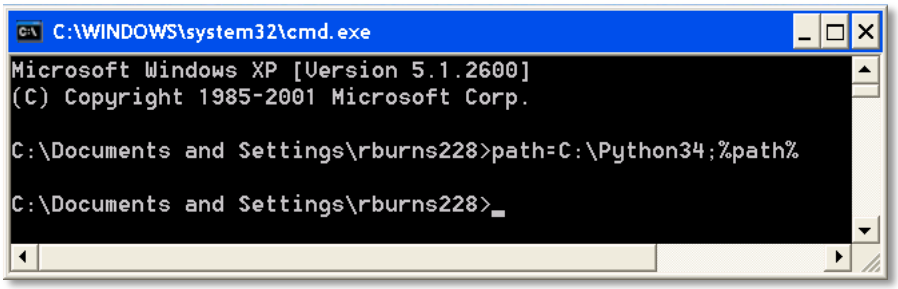
You'll be doing this so often that you may wish to "pin" its icon to the task bar.



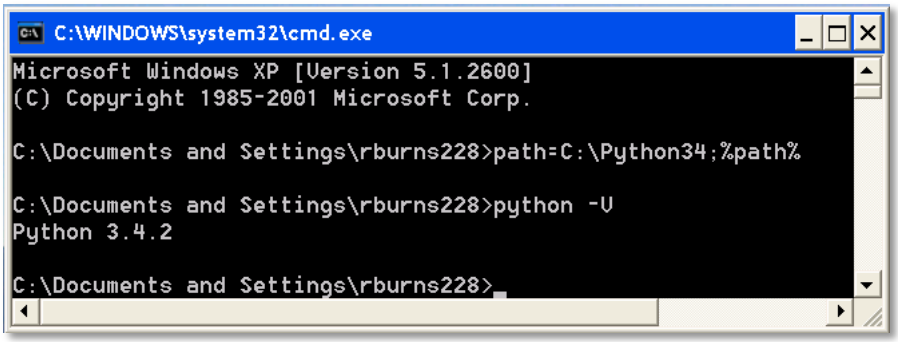

To begin a Python programming session using command-line compiling, open a command prompt. Here's what it should look like (in Windows XP and 8):



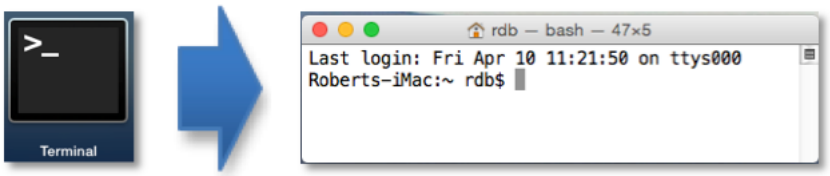

Every time you begin a Python session, you *may* have to enter this command: `path=c:\Python34;%path%`. If yours works without it, great!




There is no feedback or other output produced by the `path` command, but the `python -V` command should report "version 3", like this:

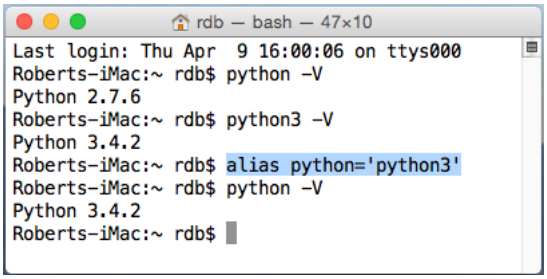


**Running Python On A Mac**
To begin a Python programming session using command-line compiling, launch the Terminal app, and you should see a window appear on your desktop:



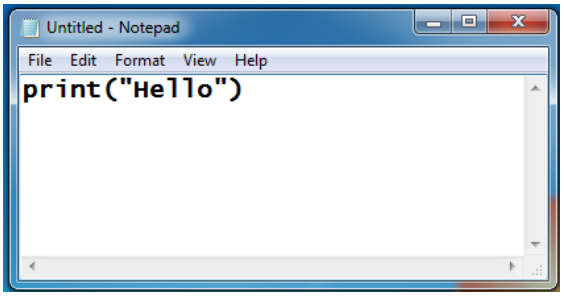

The `python -V` command should work, but if it says version 2, then try the command `python3 -V`. If that works, then do this:

Every time you begin a Python session, enter this command: `alias python='python3'`. Then proceed as normal – you're running Python 3! Or you can just use the command `python3` instead of `python` to run your Python programs.



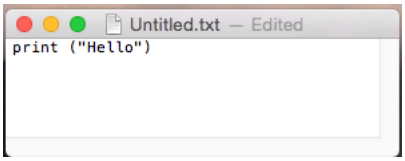

## Editing

Use any text-editor or code editor to create your program, like Windows Notepad:



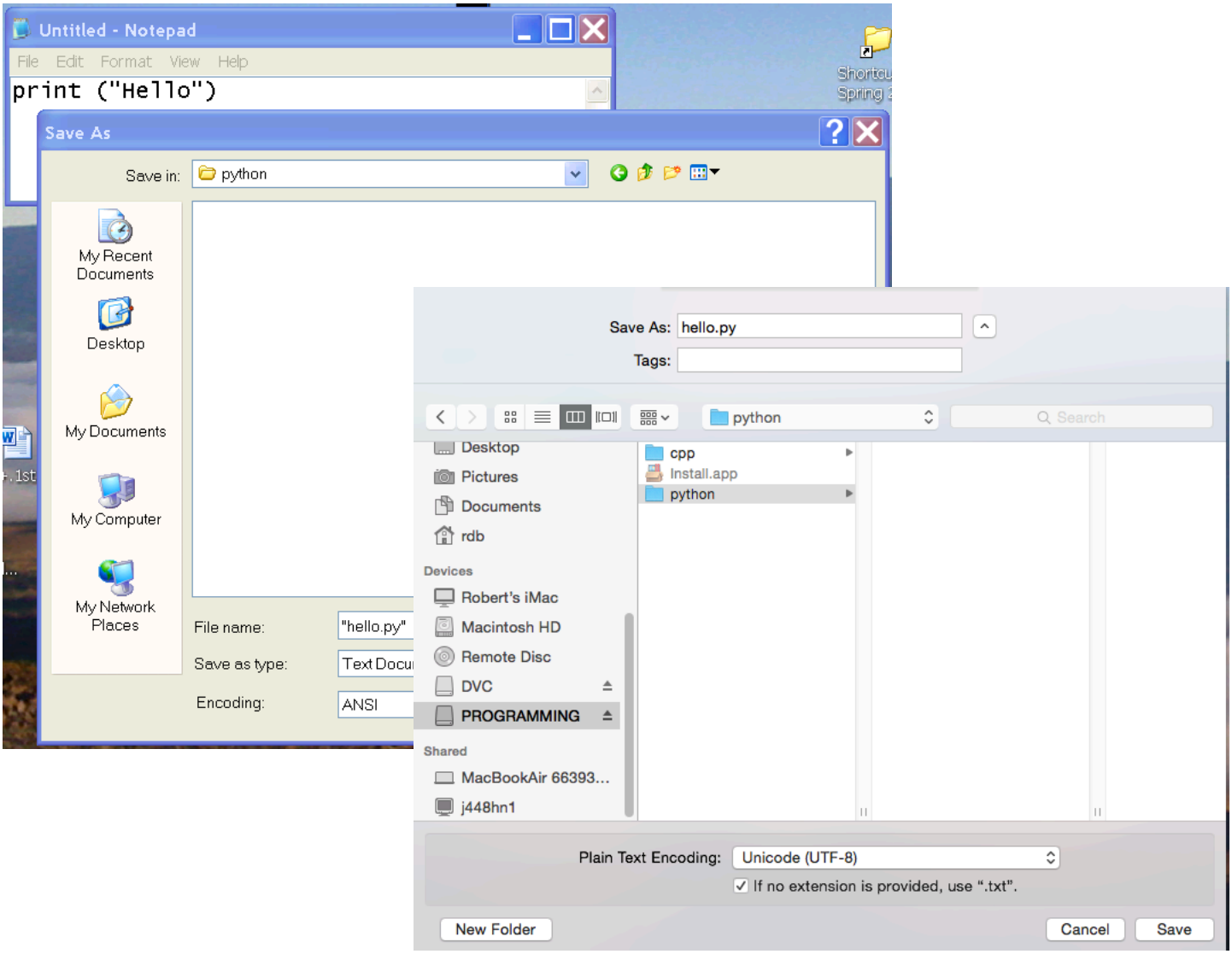

You can use any other editor and system. So if you are using Mac, you can use **TextEdit**, configured for plain text.

As you type the program, there should be an indication on the editor about the line number that is currently being edited. In **Notepad** this is located in the lower right with the abbreviations "Ln" for line number and "Col" for column number. (If this does not appear, then revisit section 2.1.1 above.) This is not so important for now, but knowing the line number will be important when we get into larger programs, in case Python detects and reports typing errors. Unfortunately the line number does not appear in TextEdit on a Mac – one reason why Brackets may be the better choice for an editor.




**Saving A File**

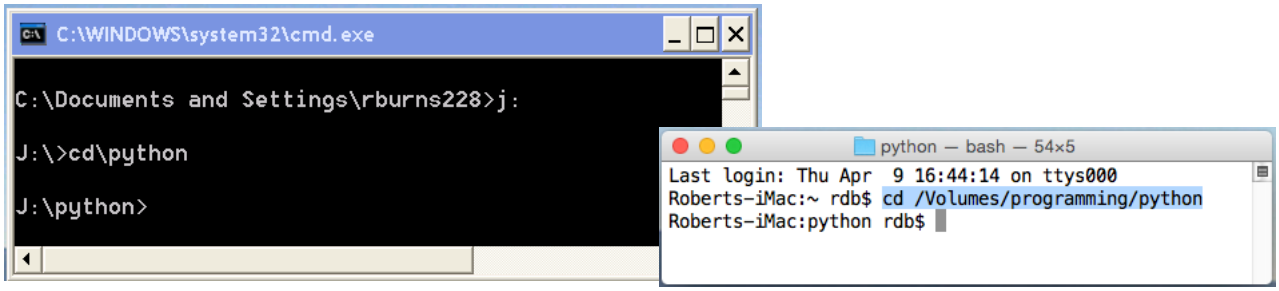
Save the file with a **.py** extension, into the "working folder" you created for storing your programming files. If you use **Notepad** on a PC, you may have to enclose the filename in quotes, or else **.txt** may be appended to the filename! The saved file is called the "source file", and it contains "source code". It should look something like this on PCs and Macs:



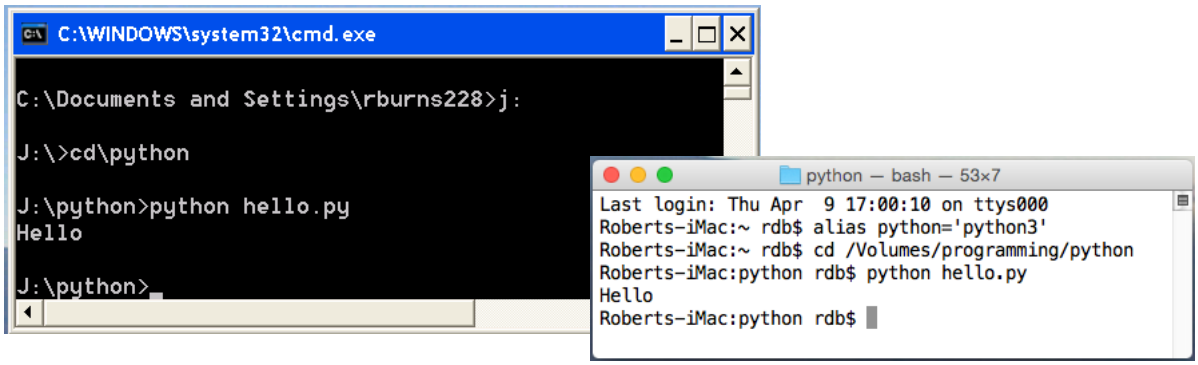
# Ruinning A Python Program

Now that the program's source file has been saved to the drive, you are ready to execute it, or as it's also called, "run". The two words are used interchangeably in programming.

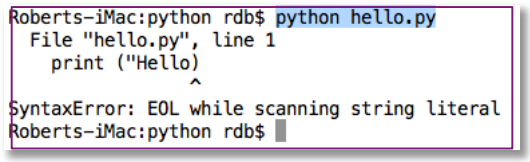
First, go to a command prompt as explained above, and navigate to the drive and working folder containing your edited source file. It should look like this on a PC or Mac, with what *you* would type appearing like this: `cd\python` in the PC screen shots, and like this: `cd /Volumes/programming/python` in the Mac screenshots:




Here's how to ***EXECUTE*** it. Invoke Python by typing this command: `python hello.py`




If there are any errors, it should be evident from the output. Line numbers should also appear in Python's output, guiding you to the problem, like this (with a missing quote mark):




**Rerunning**

When you use the command line to run your programs, it will seem as if there is a lot of typing to do – repetitive typing. But you do not have to retype a command over and over again. PCs and Macs both let you use the UP and DOWN ARROWs of the keyboard to recall a recently typed command. On PCs, you can also use the F7 key to get a menu of recently typed commands, although the UP ARROW is the easiest way to recall the last-typed command.