Using SSH to Connect to deepthought

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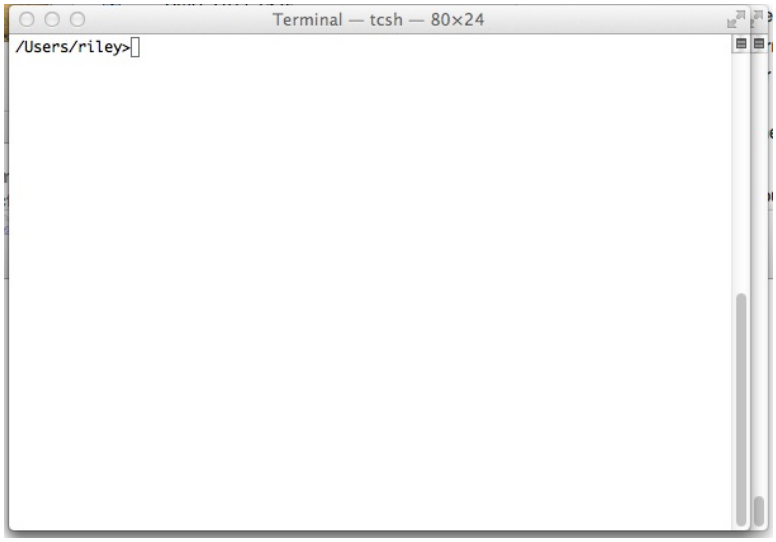
1. If you use Windows and have not yet installed *XWin32* you should go to `http://software.oit.gatech.edu`, select your affiliation as `student` and the software type is `Microsoft Windows Desktop`. Then select and download `X-Win32 2014 (with SSH).`

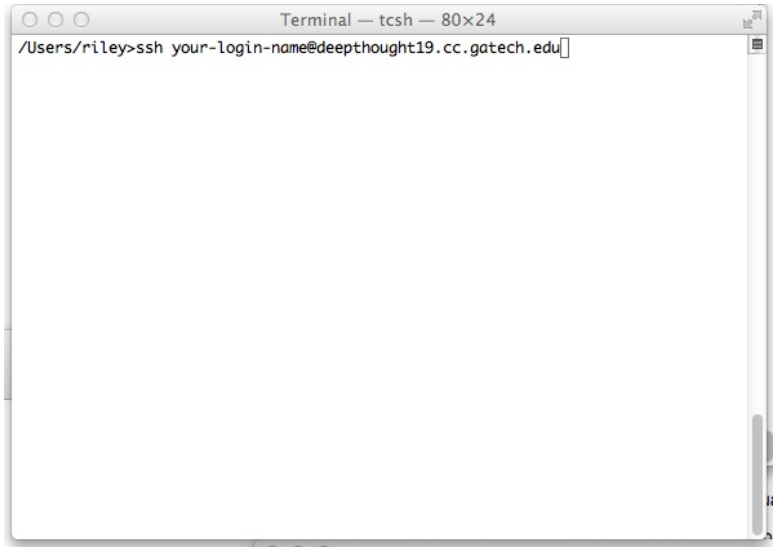
2. Bring up a terminal window on your laptop. If you have a Mac or Linux it is simply the `Terminal` application. For windows use the XWin32 downloaded above. Below is a screen shot of the terminal window on Mac.

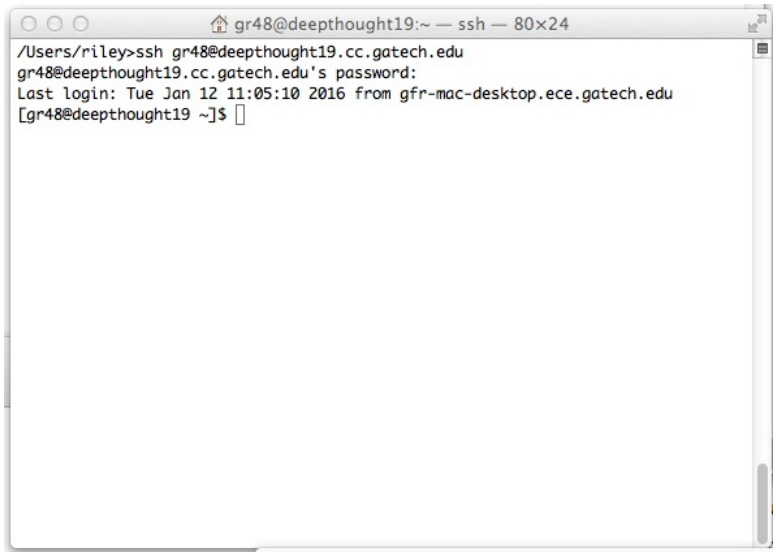


   Notice the prompt showing the current working directory (`/Users/riley` in my case. Yours will of course be different.

3. Use the `ssh` command to "connect" to a different computer, `deepthought19.cc.gatech.edu` in this case.

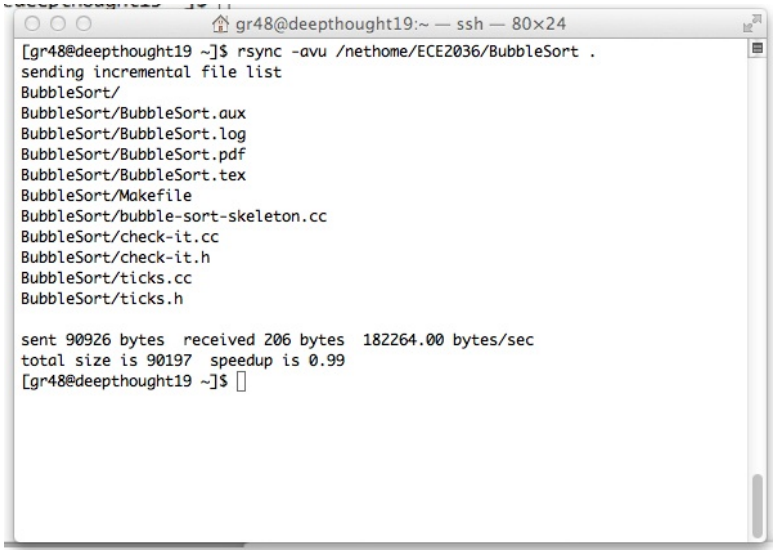
   Below are screen shots before and after entering the final "return" key and after entering your log in password.



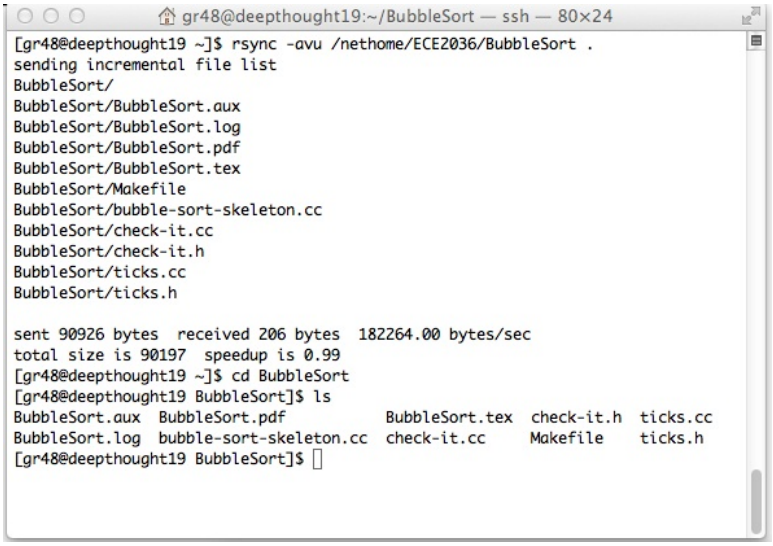


Note that the "Prompt" is slightly different on deepthought in that it prints the login name followed by the local machine name (deepthought19 in this case).

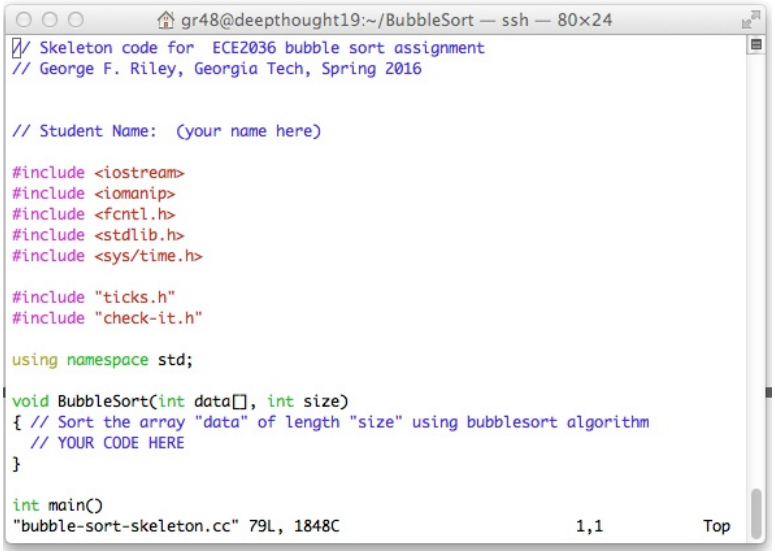
4. Below is an example of how to download the *Skeleton* code that is usually provided for the C and C++ programming assignments.



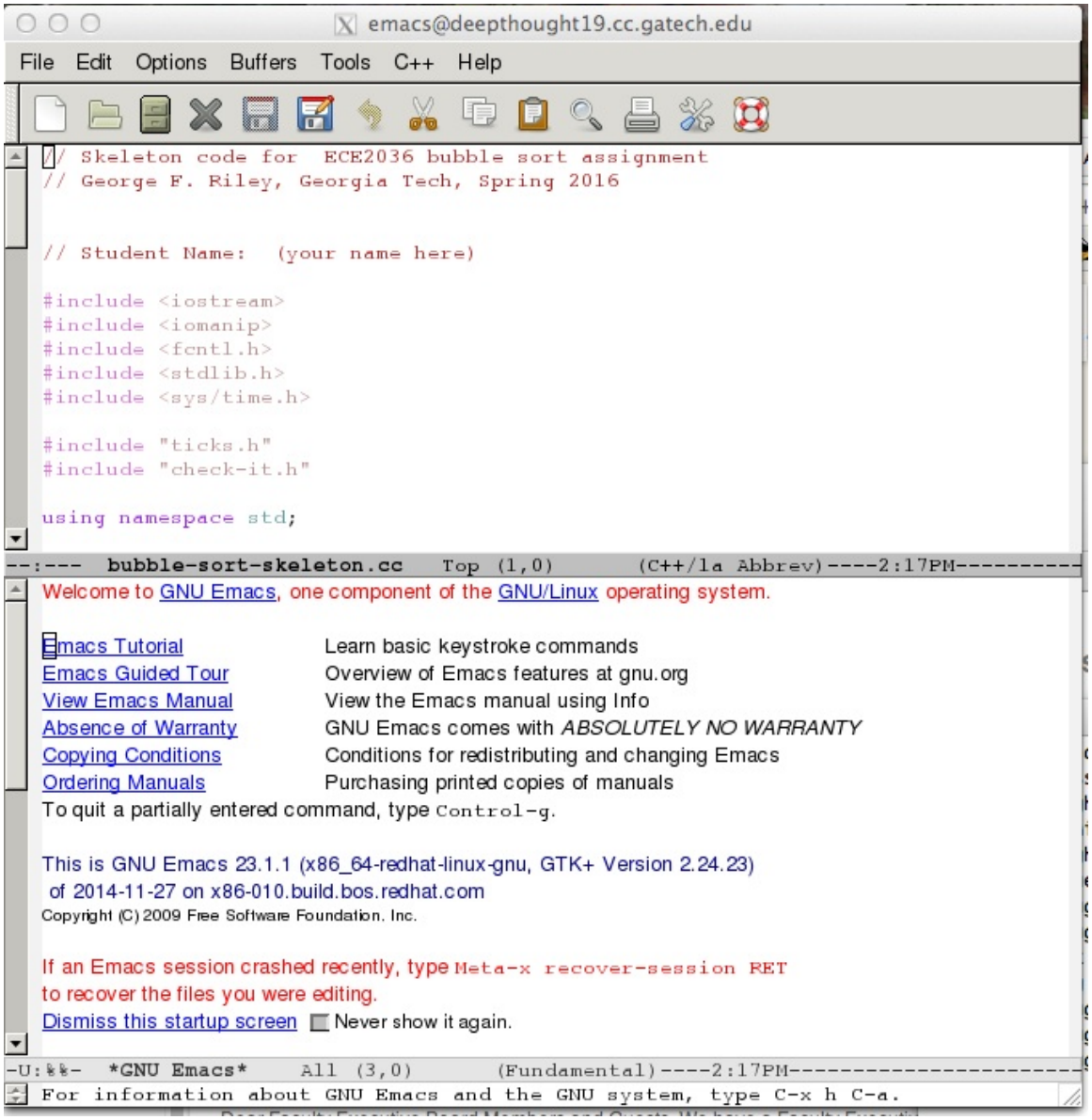
5. Finally is an example of the output after changing your working directory using `cd` and then a `ls` (list files) command.



6. Next is a screen shot of using the `vi` text editor. In this case we have specified to run the `vi` program on the `bubble-sort.cc` file. There are many good on-line resources about how to use `vi`.



7. Finally a screenshot of using `emacs` to edit your bubble-sort.cc file. Notice that `emacs` opens a second and larger window with the text of the program. This will only happen if you have *X11* installed on your laptop. For linux systems it is included with the distribution, but with Mac OSX there is a separate install process for *X11* called *XQuartz*. For windows platforms the *XWin32* discussed above should be sufficient.



8. There are a few linux commands that are needed to successfully complete the assignments. There are dozens of on-line resources for learning linux shell commands. A few of the useful commands are given below.

   (a) `ls` - List all files in the current directory excepting *hidden* files.

   (b) `ls -la` – List in long format all files in the current directory including *hidden* files.

   (c) `cd SomeDirectoryName` - Change your working directory to some other directory. If the `SomeDirectoryName` starts with a forward slash, the directory is relative to the system *root* directory. You would rarely do this.

   (d) `cd` - Change your working directory to your *home* directory.

   (e) `cd ..` - Change your working directory to the *parent* of the current directory.

   (f) `make program-name` - Run the compiler and linker to create an executable binary `program-name` using the source code `program-name.cc`

   (g) `g++ -o program-name -g -Wall program-name.cc` Run the C++ compiler, compiling program `program-name.cc` and writing the executable binaries on file `program -name`