CS 325 - useful details: `ssh`, `~st10/325submit`, and `sftp`

When you create SQL scripts on nrs-projects, you will submit them on nrs-projects, using a tool described below, `~st10/325submit`. (Since the files are on nrs-projects, this is convenient -- there is no need for you to transfer files from nrs-projects to your computer for every submission. You only need to transfer those files to your computer for your own backups as desired.)

When you create files on your own computer -- as you will for some project milestones -- you'll submit those to Canvas. (And so you won't have to transfer these files to nrs-projects, unless you wish to.)

And, every handout requiring submissions will specifically say how its files are to be submitted, whether using `~st10/325submit` or submitting them to Canvas.

to turn in SQL-related files on nrs-projects...

...is basically a 3-step process:

* connect/log on to nrs-projects using `ssh`,

* `cd` to the directory/folder containing the files you want to submit

* run the program `~st10/325submit` while in that directory/folder to submit/turn in those files

ssh - secure shell - how to connect to nrs-projects

`ssh` (secure shell) is used to connect to computers across a network. It allows you to log onto a remote Unix computer and use it from wherever you are on the Internet.

...from Windows

HSU's campus labs (including `vlab.humboldt.edu`) include a "graphical" implementations of `ssh` called PuTTY.

For PuTTy, use `nrs-projects.humboldt.edu` as the host, and use your campus username, and your campus password. Some of these `ssh` programs may also want a port number -- if so, use a port number of `22`.

Once you see the prompt:

[*your_hsu_username*`@nrs-projects ~]$`

...you are now logged into nrs-projects, and can type Unix commands at this prompt. (Type the enter key to end a Unix command, and note that Unix is case-sensitive.)

It is good practice to logout (type the command `logout` or type the ctrl and d keys at the same time) when you are done.

...from Mac OS X or Linux (or Windows 10 running bash?)

There are graphical ssh clients for these, too, but I tend to just use their command-line versions (which

should already be installed on your computer).

For the command-line version already installed in Mac OS X, you'll want to open a terminal using the Terminal application (under Applications -> Utilities); if you use Linux, you probably already know how to open a terminal window under whatever version you are running.

Once you have a terminal window open, just type:

`ssh` *your_hsu_username*`@nrs-projects.humboldt.edu`

substituting your HSU username where indicated. Answer `y` for yes to agree if it asks you if its really okay to proceed, and type in your HSU campus password when indicated. (NOTE: your password will not show on the screen when you type it, for security reasons! It IS still being read in.)

Once you see the prompt:

[*your_hsu_username*`@nrs-projects ~]$`

...you are now logged into nrs-projects, and can type Unix commands at this prompt. (Type the enter key to end a Unix command, and note that Unix is case-sensitive.)

It is good practice to logout (type the command `logout` or type the ctrl and d keys at the same time) when you are done.

`~st10/325submit` - how to use to submit SQL-related files on nrs-projects

`~st10/325submit` is a small program (a Perl script) in my directory on nrs-projects that I wrote for students to use to submit homework files that are on nrs-projects.

Whether you are using Windows, Mac OS X, or Linux:

1. Use `ssh` to log onto nrs-projects (as discussed above).

2. Use the `cd` command to change to the directory where your files are -- for example, if those files are in your nrs-projects directory/folder `this-homework`, then:

    `cd this-homework`

    ...will change to that directory. The command `pwd` will tell you the name of the present directory, if you have forgotten, and `cd` all by itself will take you back to your main, home directory.

3. Make sure that your files are in this directory -- `ls` will list all of the files in your current directory.

4. Now that you are in the directory where the files to submit, are, type:

    `~st10/325submit`

    ...to run the submission program. Give the homework number when asked (in lab, I'll try to remember to tell you what number to use), and when asked if you want to submit all of the appropriate-type files in the current directory, answer `y` for yes.

    Make sure that you see the files you hoped to submit listed as having been submitted; don't

worry if others were submitted, also, as long as the ones you wanted to submit made it.

5. A copy of what you submitted is stored in a directory named `submitted` in your current directory. Keep this copy until this work's grade is posted on Canvas.

And, remember to `logout` of your `ssh` session when you are done.

sftp - secure file transfer program - how to transfer files to and from nrs-projects

`sftp` (secure file transfer program) is used to transfer files between computers across a network. It allows you to connect to a remote computer and transfer files between it and the computer you connect to from wherever you are on the Internet.

You can use this to save backup copies of your nrs-projects files onto your own computer.

And -- if you prefer to type your SQL scripts on your own computer -- you can use this to transfer those scripts to nrs-projects to execute them using Oracle `sqlplus`.

...from Windows

WinSCP, installed in HSU campus labs, is a "graphical" implementations of `sftp`.

And, there is an open source version, FileZilla, which has versions for Windows and Mac OS X, available from:

https://filezilla-project.org/

For any of these choices of software, use `nrs-projects.humboldt.edu` as the host, and use your campus username, and your campus password. If WinSCP or FileZilla require a port number, enter a port number of `22`.

Once you have connected, you can drag files from the left side to the right side to move files from your computer to nrs-projects, and from the right side to the left side to move files from nrs-projects to your computer.

...from Mac OS X or Linux (or Windows 10 running bash?)

There are graphical sftp clients for these, too -- for example, FileZilla, which has versions for Windows and Mac OS X, is available from:

https://filezilla-project.org/

-- but I tend to just use their command-line versions (which should already be installed on your computer).

For the command-line approach, on Mac OS X, you'll want to open a terminal using the Terminal application (under Applications -> Utilities); if you use Linux, you probably already know how to open a terminal window under whatever version you are running.

Once you have a terminal window open, life is easier if you go to the directory (using the `cd` command) where the files are that you want to transfer. Then, type:

`sftp` *your_hsu_username*`@nrs-projects.humboldt.edu`

substituting your HSU username where indicated. Answer `y` for yes to agree if it asks you if its really okay to proceed, and type in your HSU campus password when indicated. (NOTE: your password will not show on the screen when you type it, for security reasons! It IS still being read in.)

Once you see the prompt:

`sftp>`

...you are now connected to nrs-projects using `sftp`, and can type `sftp` commands at this prompt. (Type the enter key to end an `sftp` command, and note that Unix is case-sensitive.)

Here are a few very useful `sftp` commands:

`cd` *directory_name*	change to directory *directory_name* **on nrs-projects**
`lcd` *directory_name*	(local `cd`) change to directory *directory_name* **on your (local) computer**
`pwd`	see the name of the current directory **on nrs-projects**
`lpwd`	(local `pwd`) see the name of the current directory **on your (local) computer**
`ls`	list the files in the current directory **on nrs-projects**
`lls`	(local `ls`) list the files in the current directory **on your (local) computer**
`put` *file_name*	transfer a copy of the file *file_name* <u>from **your**</u> computer **to** nrs-projects
`get` *file_name*	transfer a copy of the file *file_name* **from** nrs-projects <u>to **your**</u> computer
`?`	gives a list of sftp commands, each with a 1-line description
`quit`	exit `sftp`

It is good practice to quit (type the command `quit` or type the ctrl and d keys at the same time) when you are done.