SSH and (S)FTP

CS101

What is SSH?

SSH stands for **S**ecure **SH**ell, and it allows you to remotely access the command line of another machine. In the CS department, people often use SSH to connect to the lab machines from their personal laptops. The best part is, you can SSH from anywhere! You don't have to be in the GDC or even on campus.

The SSH command

```
ssh <username>@<lab-machine>.cs.utexas.edu
```

You will then be prompted to input your UTCS password.

List of available lab machine can be found here

https://apps.cs.utexas.edu/unixlabstatus/

How do you SSH?

On Windows

Using the PuTTY program (download from putty.org), fill in the appropriate credentials, then connect!

On Mac/Linux

Run ssh `<username>@<lab-machine>.cs.utexas.edu` in your terminal, enter your password, and you're connected!

Now What?

The command line works just as if you were sitting at a machine in one of the labs. You can interact with it like any other Linux terminal. To exit, call `exit`.

What is (S)FTP?

(S)FTP stand for (**S**ecure) **F**ile **T**ransfer **P**rotocol. It's used to securely transfer files between machines. This is useful for testing CS312/CS314 code on the lab machines, since most assignments in UTCS are graded on the lab machines.

Some vocab

Local Machine	The machine you have in front of you, the one that you're using to access another computer with
Remote Machine	The machine you are accessing remotely, in this case the lab machine

(S)FTP with FileZilla

Download FileZilla from here. It's available for Windows, macOS and Linux!

0. Enter lab machine name for **`host`**
1. Enter UTCS username for **`username`**
2. Enter UTCS password for **`password`**
3. Enter 22 for **`port`**
4. Connect!

The left window shows the filesystem on your local machine, and the right window shows the remote filesystem. Simply drag and drop files to transfer them!

(S)FTP with the Command Line

```
sftp <utcs-username>@<lab-machine-name>.cs.utexas.edu
```

`help` to see command help

`ls` to show contents of remote directory

`lls` to show contents of local directory

`cd` to change directories on remote machine

`lcd` to change directories locally

`bye` to exit the SFTP session

`get <remote-path> <local-path>` to copy file at remote-path to file at local-path

`get -r <remote-path> <local-path>` to copy directory recursively at remote-path to file at local-path

`put <local-path> <remote-path>` to copy file at local-path to file at remote-path

`put -r <local-path> <remote-path>` to copy directory recursively at local-path to file at remote-path

A challenge!

0. SSH into your lab machine and make a directory named `foo`
1. Add a file in **`foo`** called bar
2. Disconnect from the SSH session
3. Connect to the same lab machine with SFTP
4. Navigate to **`bar`** and download it to your local machine
5. Make a file called **`baz`** on your local machine
6. Copy **`baz`** to the directory **`foo`** on the remote machine
7. Delete the folder **`foo`** (and its contents) and disconnect from the SFTP session

Questions?

Thanks for coming!