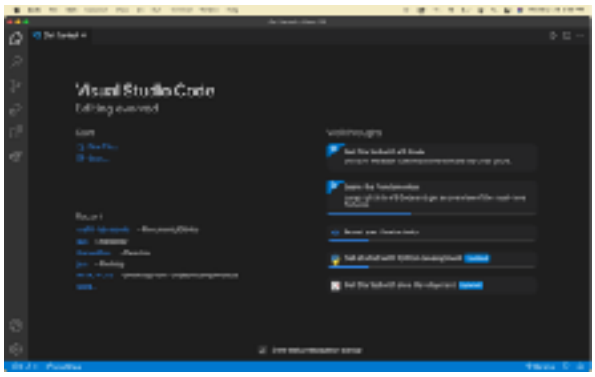
Lab Report 1

Here is how to connect to a course-specific account on ieng6! (Mac only)

Step 1: Install VSCode

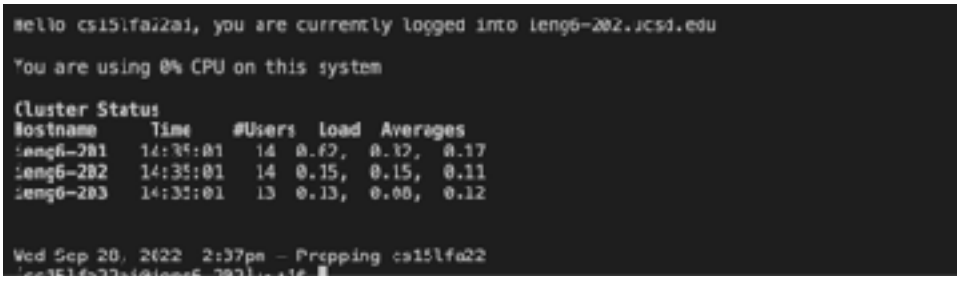
Go to the this link: https://code.visualstudio.com/
Press Download
Unzip and Open
It should look like this:



Step 2: Remotely Connecting
In VSCode, open a new terminal by pressing terminal > new terminal
Enter this command with your specific ID:

```
ssh cs15lfa22zz@ieng6.ucsd.edu
```

Enter your password and you should see this.



You are now connected!!

Step 3: Trying some commands

Now you can try some commands and see what happens.

Try:

```
ls
cd
ls -lat
ls -a
cp /home/linux/ieng6/cs15lfa22/public/hello.txt ~/
And others
```

And see what they do.

Step 4: Moving Files with scp

Now let's move a file from our computer to the remote computer.
First use exit to log out.
Now, create a new java file called WhereAmI.java and copy this code:

```
class WhereAmI {
    public static void main(String[] args) {
      System.out.println(System.getProperty("os.name"));
      System.out.println(System.getProperty("user.name"));
      System.out.println(System.getProperty("user.home"));
      System.out.println(System.getProperty("user.dir"));
    }
}
```

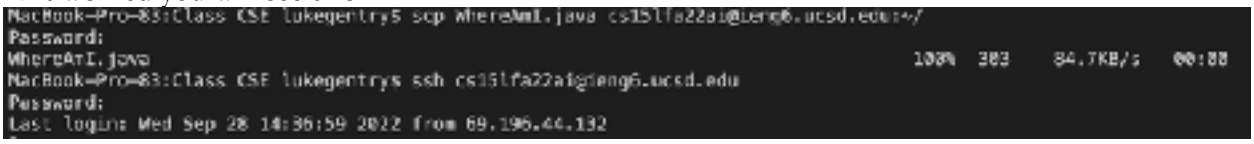
In the terminal run

javac WhereAmI.java
Java WhereAmI

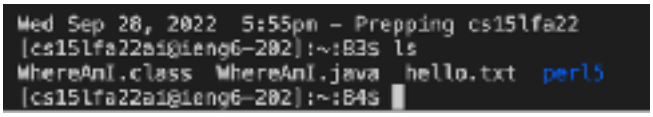
Take not of the output, it should look like this:

Now let's copy that file to the remote computer.

Copy this command into the terminal:
`scp WhereAmI.java cs15lfa22zz@ieng6.ucsd.edu: ~/`
Make sure to change the zz to your id
Enter your password.
If it worked you will see this:



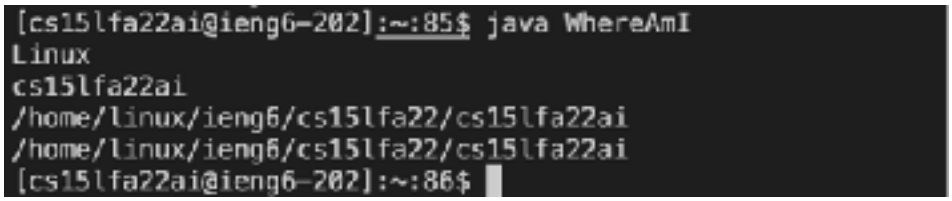
Now reconnect to the computer with
`ssh cs15lfa22zz@ieng6.ucsd.edu`
Type the command ls.
You should notice that the file WhereAmI.java is now there.



WhereAmI.class will be there too if you compile it.
Next run that file with

```
javac WhereAmI.java
Java WhereAmI
```

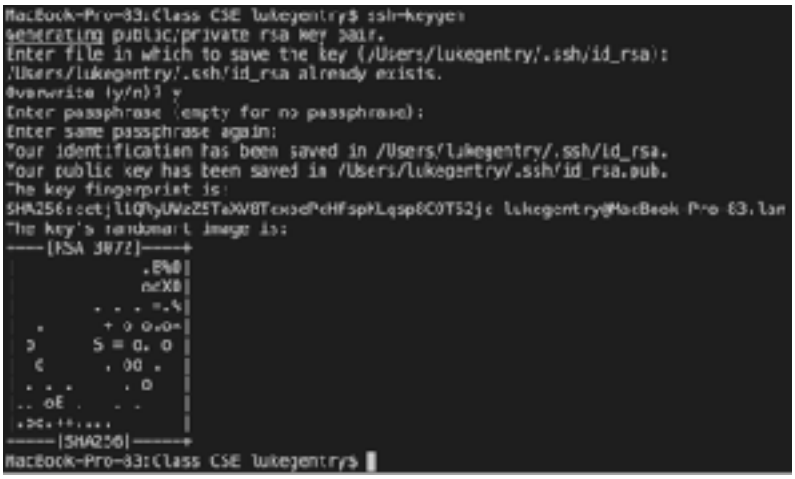
The output should look like this:



Step 5:

Now let's set an SSH Key so we don't have to type in that password every time!
Make sure you exit and then use the command
`ssh-keygen`
It will ask for a you to enter a file to save the key, just press enter if the line ends with is_rsa
Enter a "passphrase" (a shorter password)

It should output a picture like this:



Next, reconnect to the server using
`ssh cs15lfa22zz@ieng6.ucsd.edu`
And your password
Run the command: mkdir .ssh
If it says that the file exists, don't worry about it and move on.
Exit the remote computer
Run this command to copy the key to the remote computer:

```
scp /Users/<your_username>/.ssh/id_rsa.pub
cs15lfa22zz@ieng6.ucsd.edu:~/.ssh/authorized_keys
```

Make sure to add your username on your Mac and your id.

If it works it will look like this.
Now try to connect again with
`ssh cs15lfa22zz@ieng6.ucsd.edu`
It should now look like this:

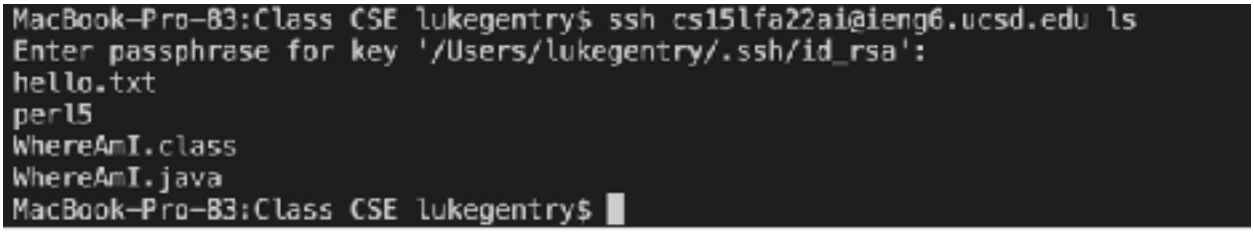
Enter your passphrase and it should connect!

Step 6: Optimizing Remote Running!

You can also write extra command lines at the end of an ssh connection line to run it immediately on the server. For example:

ssh cs15lfa22zz@ieng6.ucsd.edu ls

It should look like this.



You can also run multiple commands with semicolons. For example:
`cp WhereAmI.java OtherMain.java; javac OtherMain.java; java WhereAmI`

Done!