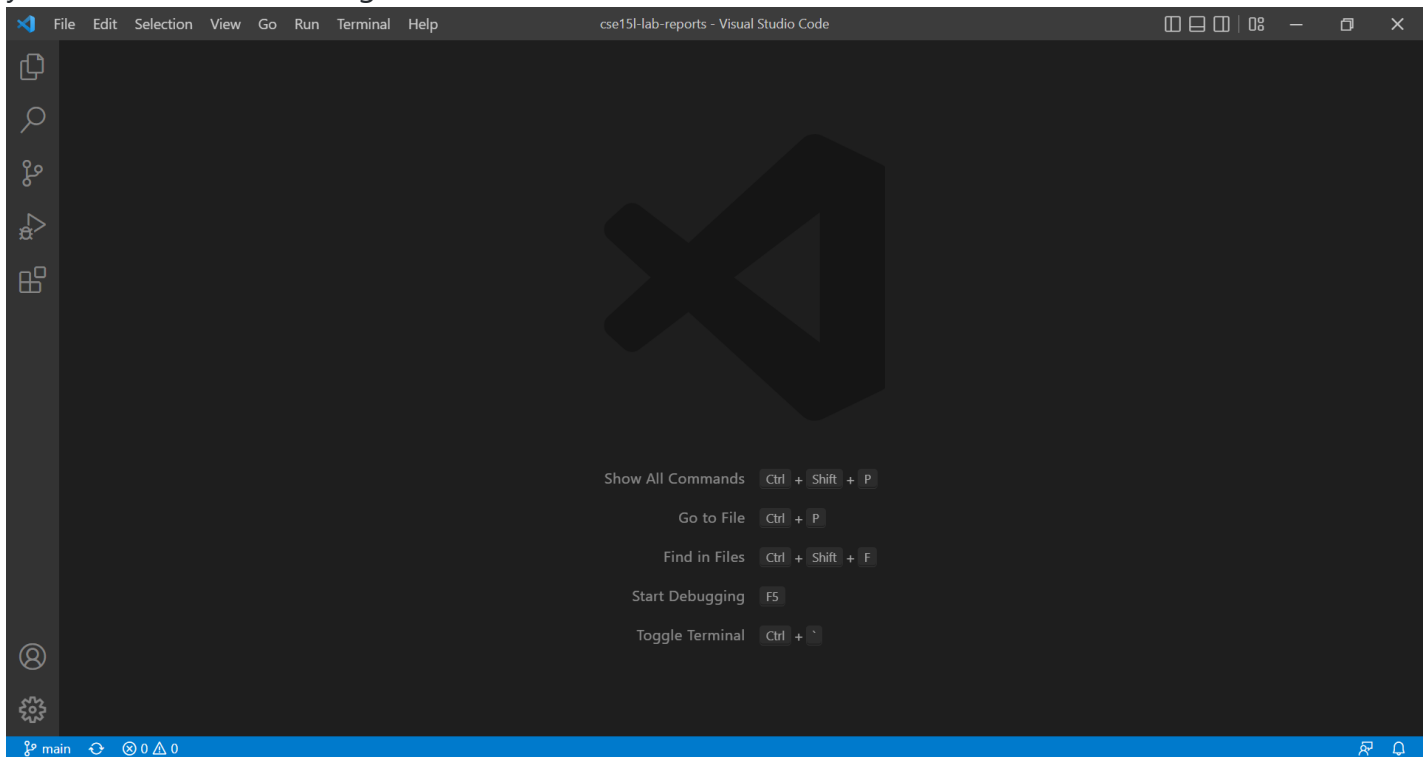# cse15l-lab-reports

Lab Report 1

This tutorial will cover how to log into a course-specific account on `ieng6` . ***

Step 1: Installing Visual Studio Code

Go to the Visual Studio Code website https://code.visualstudio.com/ and follow the intructions on how to download and install the source code editor. Once complete, when you open up VS Code you should see something like this:

Step 2: Remotely Connecting

Enter the following into the VS Code terminal:

```
$ ssh cs15lfa22XX@ieng6.ucsd.edu
```

Replace the XX with your course-specific letters. Answer `yes` to the following message.

```
Are you sure you want to continue connecting (yes/no/[fingerprint])?
```

This will then prompt you to enter your password. If the password you entered is correct but you are unable to log in, click here for tutorials to reset your password. Once you are logged in, you should see the following screen:

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**   JUPYTER   ⟩ ssh + ∨ ⊓ 🗑 ∨ ✕

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\tanks\source\repos\cse15l-lab-reports> ssh cs15lfa22ap@ieng6.ucsd.edu
Password:
Attempting to create directory /home/linux/ieng6/cs15lfa22/cs15lfa22ap/perl5
============================ NOTICE =================================
Authorized use of this system is limited to password-authenticated
usernames which are issued to individuals and are for the sole use of
the person to whom they are issued.

Privacy notice: be aware that computer files, electronic mail and
accounts are not private in an absolute sense.  You are responsible
for adhering to the ETS Acceptable Use Policies, which you can review at:
https://blink.ucsd.edu/faculty/instruction/tech-guide/policies/ets-acceptable-use-policies.html
====================================================================

*** Problems, Suggestions, or Feedback ***

    For help requests, please create a ticket at:
    https://support.ucsd.edu/its

    You may also report issues, suggestions, or feedback by e-mailing root on any system:
    mail -s "Your subject here" root
    Type your message - Ctrl+D to send

*** Access our Linux ssh terminals or remote desktops via a web browser at: ***
    https://linuxcloud.ucsd.edu

    All accounts must be enrolled in Duo for access. No VPN required.


--------------------------------------------------------
```

Ln 1, Col 1   Spaces: 2   UTF-8   CRLF   Java   ℛ   🔔

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**   JUPYTER   ⟩ ssh + ∨ ⊓ 🗑 ∨ ✕

```
--------------------------------------------------------

Hello cs15lfa22ap, you are currently logged into ieng6-202.ucsd.edu

You are using 0% CPU on this system

Cluster Status
Hostname    Time      #Users  Load  Averages
ieng6-201   14:45:01   14   0.01,  0.03,  0.05
ieng6-202   14:45:01   9    1.83,  1.96,  1.95
ieng6-203   14:45:01   14   0.07,  0.11,  0.07


Fri Sep 30, 2022  2:46pm - Prepping cs15lfa22
[cs15lfa22ap@ieng6-202]:~:1$ 
```

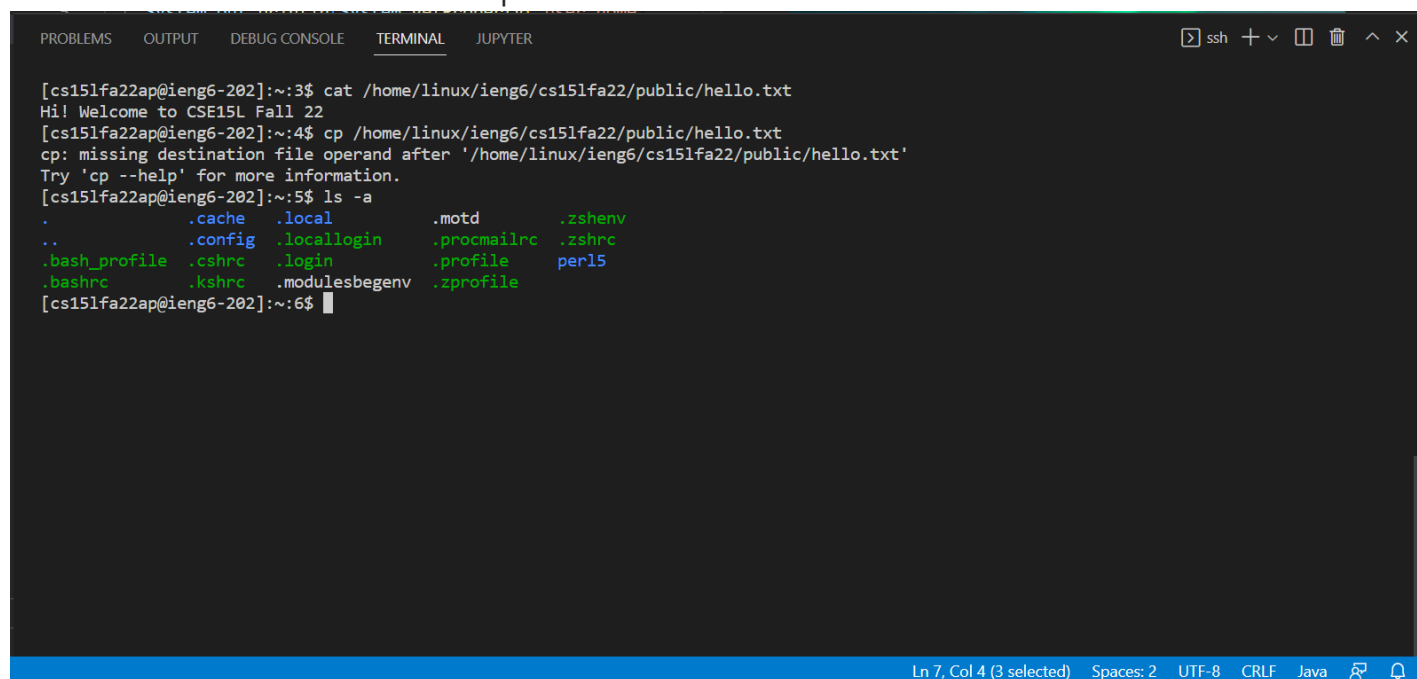Ln 1, Col 1   Spaces: 2   UTF-8   CRLF   Java   ℛ   🔔

Step 3: Trying Some Commands

Now try some of the following commands on both your local computer and the remote computer (the one after inputing your ssh username and password), the last command listed exits you from the remote computer:

```
cd
cd ~
ls
ls -a
pwd
mkdir
cp /home/linux/ieng6/cs15lfa22/public/hello.txt ~/
cat /home/linux/ieng6/cs15lfa22/public/hello.txt
exit
```

Here is a screenshot of some examples:

Step 4: Moving Files with `scp`

First, copy the following code into a new java file in VS Code:

```java
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"));
    }
}
```

Enter the following compile and run commands in the terminal on your **local computer:**

```
$ javac WhereAmI.java
$ java WhereAmI
```

Then enter the following into your terminal (replacing XX with your course-specifc letters of course):

```
$ scp WhereAmI.java cs15lfa22XX@ieng6.ucsd.edu:~/
```

This will prompt you to enter the same password you used for the ssh log in. Then log back into ieng6 with `ssh` and type `ls` into the terminal, you should then see the WhereAmI file in your home directory, thus now you can enter the same compile and run commands on the remote computer.

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL    JUPYTER                                    ⟩ ssh + ∨ ☐ 🗑 ∨ ✕

PS C:\Users\tanks\source\repos\cse15l-lab-reports> javac WhereAmI.java
PS C:\Users\tanks\source\repos\cse15l-lab-reports> java WhereAmI
Windows 10
tanks
C:\Users\tanks
C:\Users\tanks\source\repos\cse15l-lab-reports
PS C:\Users\tanks\source\repos\cse15l-lab-reports> scp WhereAmI.java cs15lfa22ap@ieng6.ucsd.edu:~/
ssh: Could not resolve hostname ieng6.ucsd.edu: No such host is known.
lost connection
PS C:\Users\tanks\source\repos\cse15l-lab-reports> scp WhereAmI.java cs15lfa22ap@ieng6.ucsd.edu:~/
Password:
WhereAmI.java                                                          100%  297    26.6KB/s   00:00
PS C:\Users\tanks\source\repos\cse15l-lab-reports> ssh cs15lfa22ap@ieng6.ucsd.edu
Password:
Last failed login: Wed Sep 28 16:40:15 PDT 2022 from 100.80.44.166 on ssh:notty
There were 7 failed login attempts since the last successful login.
Hello cs15lfa22ap, you are currently logged into ieng6-201.ucsd.edu

You are using 0% CPU on this system

Cluster Status
Hostname    Time      #Users  Load  Averages
ieng6-201   16:20:01   15  0.19,  0.10,  0.07
ieng6-202   16:20:01    7  0.07,  0.17,  0.79
ieng6-203   16:20:01   11  0.02,  0.06,  0.05


Fri Sep 30, 2022  4:22pm - Prepping cs15lfa22
[cs15lfa22ap@ieng6-201]:~:6$ ls
WhereAmI.java  perl5
[cs15lfa22ap@ieng6-201]:~:7$ javac WhereAmI.java
[cs15lfa22ap@ieng6-201]:~:8$ java WhereAmI
Linux
cs15lfa22ap
/home/linux/ieng6/cs15lfa22/cs15lfa22ap
/home/linux/ieng6/cs15lfa22/cs15lfa22ap
```
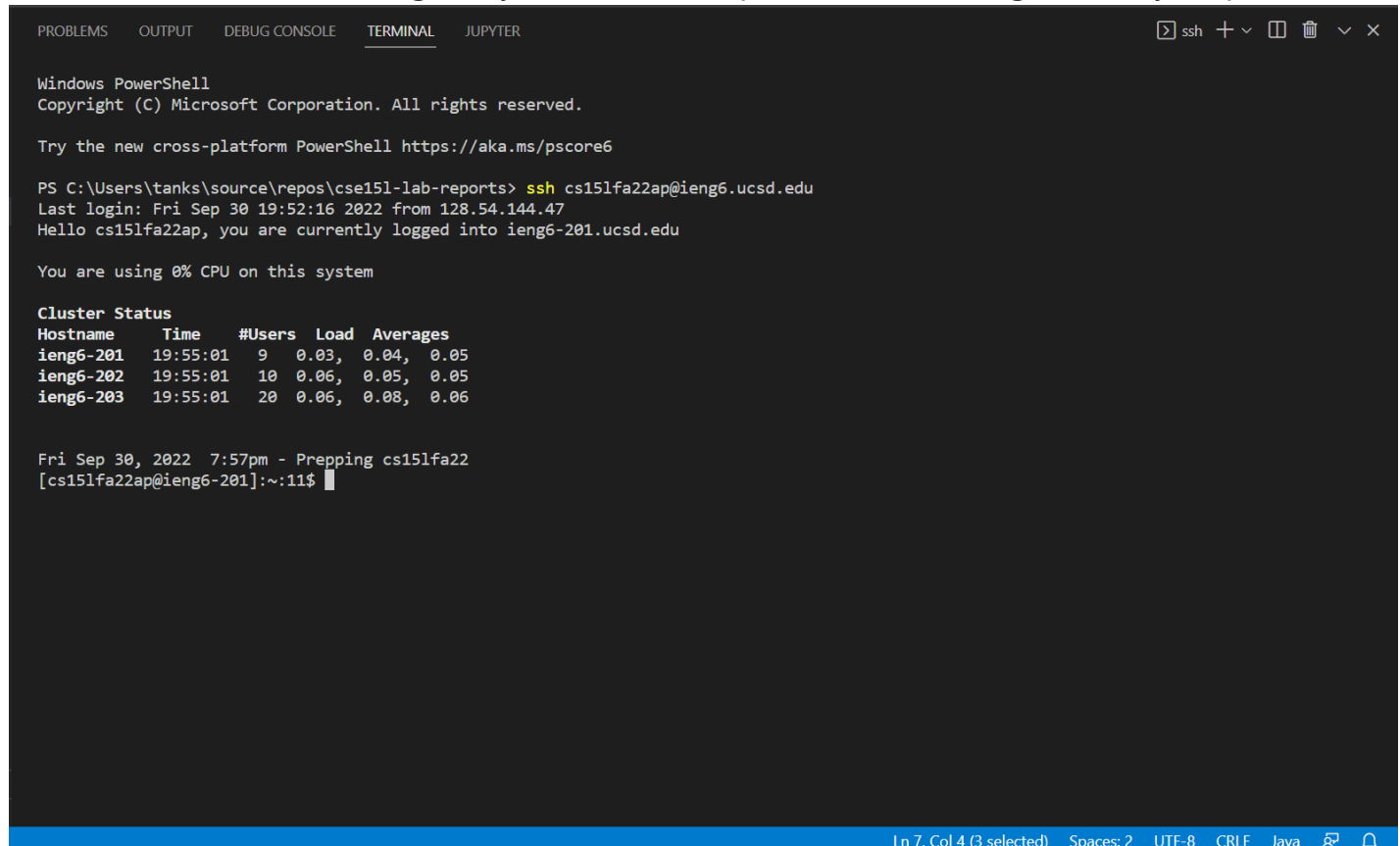Ln 7, Col 4 (3 selected)   Spaces: 2   UTF-8   CRLF   Java   👤 🔔

Step 5: SSH Key Setup

In short, setting up an SSH Key will allow you to log in into `ieng6` without having to enter your password everytime. To set it up, enter `ssh-keygen` into the terminal on your local computer. Any subsequent prompts just hit enter for the default response. Then log back into `ieng6` and enter `mkdir .ssh` into the terminal, now log back out. Then enter the following into the terminal on your local computer (using your own username and path):

```
$ scp /Users/joe/.ssh/id_rsa.pub cs15lfa22@ieng6.ucsd.edu:~/.ssh/authorized_keys
```

You should now be able to log into your remote computer without having to enter your password:

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL    JUPYTER                                    > ssh + ∨  ⊟  🗑  ∨  ✕

Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\tanks\source\repos\cse15l-lab-reports> ssh cs15lfa22ap@ieng6.ucsd.edu
Last login: Fri Sep 30 19:52:16 2022 from 128.54.144.47
Hello cs15lfa22ap, you are currently logged into ieng6-201.ucsd.edu

You are using 0% CPU on this system

Cluster Status
Hostname    Time      #Users  Load  Averages
ieng6-201   19:55:01   9     0.03,  0.04,  0.05
ieng6-202   19:55:01   10    0.06,  0.05,  0.05
ieng6-203   19:55:01   20    0.06,  0.08,  0.06


Fri Sep 30, 2022  7:57pm - Prepping cs15lfa22
[cs15lfa22ap@ieng6-201]:~:11$

                                              Ln 7, Col 4 (3 selected)  Spaces: 2  UTF-8  CRLF  Java  ⌨  🔔
```
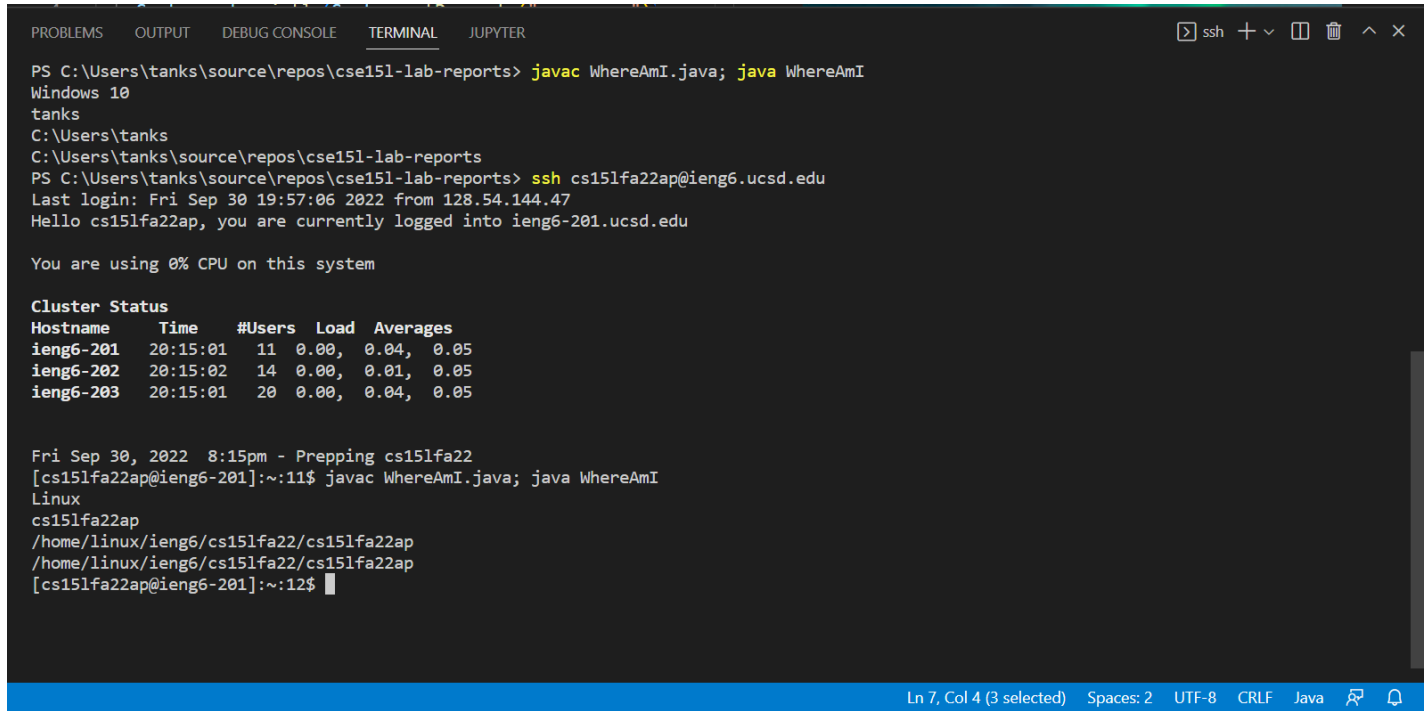
Step 6: Remote Running Optimization

If you ever want your remote running experience to be smoother, the up arrow key is your best friend. The VS Code terminal saves all the previous commands you entered into it, so using the up arrow allows you to easily reuse commands without having to re-type them. Using semicolons to separate individual commands allows you to run multiple commands on a single line:

```
$ cp javac WhereAmI.java; java WhereAmI
```

Try to use the least amount of keyboard and mouse inputs (1 input counts as hitting a key or clicking the mouse) to make an edit to the `WhereAmI.java` file and then copying and running it on

the remote computer.

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL    JUPYTER                            [>] ssh + v  [] [] ^ X

PS C:\Users\tanks\source\repos\cse15l-lab-reports> javac WhereAmI.java; java WhereAmI
Windows 10
tanks
C:\Users\tanks
C:\Users\tanks\source\repos\cse15l-lab-reports
PS C:\Users\tanks\source\repos\cse15l-lab-reports> ssh cs15lfa22ap@ieng6.ucsd.edu
Last login: Fri Sep 30 19:57:06 2022 from 128.54.144.47
Hello cs15lfa22ap, you are currently logged into ieng6-201.ucsd.edu

You are using 0% CPU on this system

Cluster Status
Hostname    Time      #Users  Load  Averages
ieng6-201   20:15:01   11  0.00,  0.04,  0.05
ieng6-202   20:15:02   14  0.00,  0.01,  0.05
ieng6-203   20:15:01   20  0.00,  0.04,  0.05


Fri Sep 30, 2022  8:15pm - Prepping cs15lfa22
[cs15lfa22ap@ieng6-201]:~:11$ javac WhereAmI.java; java WhereAmI
Linux
cs15lfa22ap
/home/linux/ieng6/cs15lfa22/cs15lfa22ap
/home/linux/ieng6/cs15lfa22/cs15lfa22ap
[cs15lfa22ap@ieng6-201]:~:12$ █

                                    Ln 7, Col 4 (3 selected)   Spaces: 2   UTF-8   CRLF   Java   [] []
```

Finish

That's it! You have now finished the tutorial on VS Code setup and ieng6 basics.

Back to index

Back to github