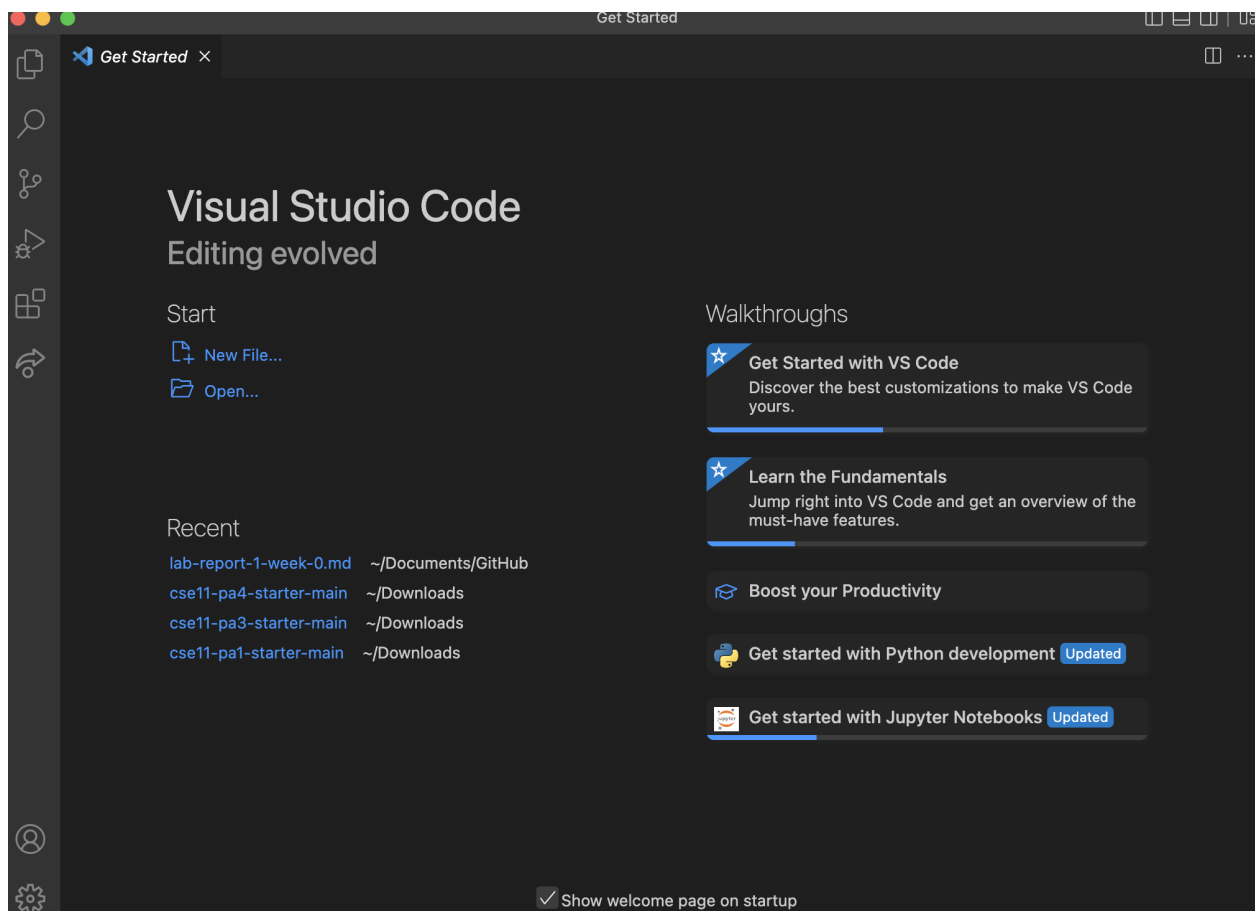
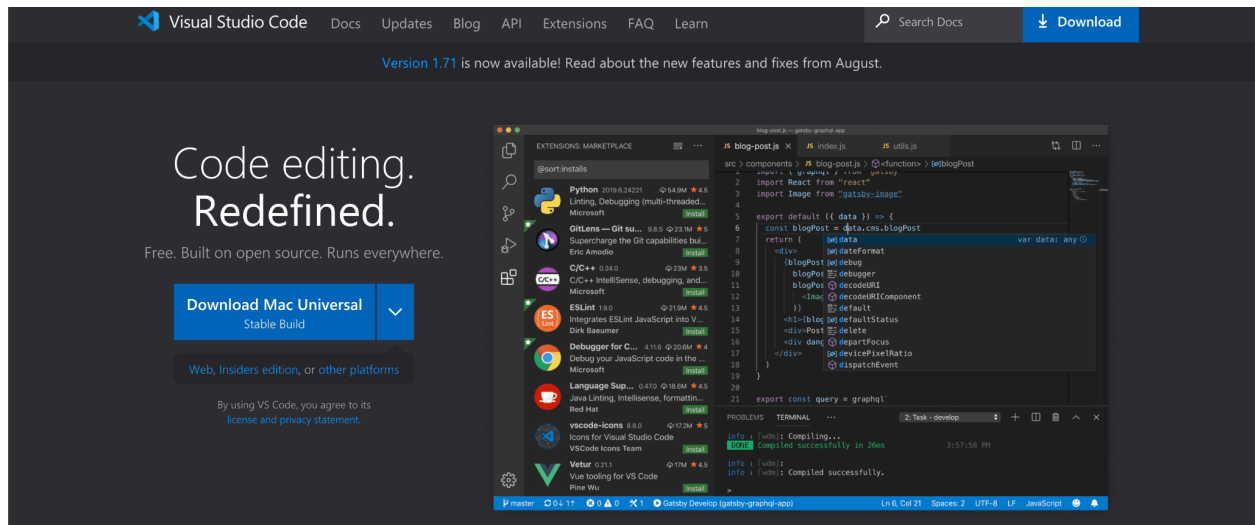


Step 1: Download VSC



```
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE JUPYTER bash - shaysamat + - □ □ ^ ×

The default interactive shell is now zsh.
To update your account to use zsh, please run `chsh -s /bin/zsh`.
For more details, please visit https://support.apple.com/kb/HT208050.
○ Shays-MacBook-Pro:~ shaysamat$
```

- You want to download VSC from the website <https://code.visualstudio.com/>
- The second screenshot would be the screen you should see when you open the application once it's done downloading.
- You want to open preferences and create a new terminal and the terminal should look like the third screenshot

Step 2 Remotely Connecting:

```
The default interactive shell is now zsh.
To update your account to use zsh, please run `chsh -s /bin/zsh`.
For more details, please visit https://support.apple.com/kb/HT208050.
Shays-MacBook-Pro:~ shaysamat$ ssh cs15lfa22fk@ieng6.ucsd.edu
(cs15lfa22fk@ieng6.ucsd.edu) Password:
Last login: Fri Sep 30 16:10:54 2022 from cpe-76-176-153-196.san.res.rr.com
Hello cs15lfa22fk, you are currently logged into ieng6-203.ucsd.edu

You are using 0% CPU on this system

Cluster Status
Hostname      Time      #Users  Load  Averages
ieng6-201     16:30:01   14  0.08,  0.11,  0.08
ieng6-202     16:30:01   12  0.11,  0.12,  0.48
ieng6-203     16:30:01   13  0.50,  0.27,  0.16

Fri Sep 30, 2022  4:31pm - Prepping cs15lfa22
[cs15lfa22fk@ieng6-203]:~:13$
```

- You want to put in the command “ssh” in this case, “ssh cs15lfa22fk@ieng6.ucsd.edu”
- Then enter your password and the output should look like this.

Step 3 Try Some Commands:

```

Fri Sep 30, 2022 4:31pm - Prepping cs15lfa22
[cs15lfa22fk@ieng6-203]:~:13$ ls-a
bash: ls-a: command not found...
[cs15lfa22fk@ieng6-203]:~:14$ ls -a
.          .bashrc  .kshrc    .modulesbeginv  .ssh      myfile.txt
..         .cache   .local    .motd            .zprofile myfile.txt.
.bash_history .config  .locallogin .procmailrc     .zshenv   perl5
.bash_profile .cshrc   .login     .profile         .zshrc    poem.txt
[cs15lfa22fk@ieng6-203]:~:15$ ls -lat
ls: cannot access -: No such file or directory
ls: cannot access lat: No such file or directory
[cs15lfa22fk@ieng6-203]:~:16$ ls -lat
total 116
-rw-r--r--  1 cs15lfa22fk ieng6_cs15lfa22 1338 Sep 30 16:31 .modulesbeginv
-rw-----  1 cs15lfa22fk ieng6_cs15lfa22  198 Sep 30 16:10 .bash_history
drwxr-s---  7 cs15lfa22fk ieng6_cs15lfa22 4096 Sep 30 16:10 .
drwx--S---  2 cs15lfa22fk ieng6_cs15lfa22 4096 Sep 30 16:08 .ssh
-rw-r-----  1 cs15lfa22fk ieng6_cs15lfa22    0 Sep 30 15:41 myfile.txt
-rw-r-----  1 cs15lfa22fk ieng6_cs15lfa22    0 Sep 30 15:39 myfile.txt.
-rw-r-----  1 cs15lfa22fk ieng6_cs15lfa22    0 Sep 30 15:37 poem.txt
-rw-r-----  1 cs15lfa22fk ieng6_cs15lfa22    0 Sep 30 15:21 .motd
drwxr-sr-x  2 cs15lfa22fk ieng6_cs15lfa22 4096 Sep 30 15:21 perl5
drwxr-sr-x  3 cs15lfa22fk ieng6_cs15lfa22 4096 Sep 30 15:21 .local
drwxr-sr-x  3 cs15lfa22fk ieng6_cs15lfa22 4096 Sep 30 15:21 .config
drwxr-sr-x  3 cs15lfa22fk ieng6_cs15lfa22 4096 Sep 30 15:21 .cache
drwxr-sr-x 464 cs15lfa22fk ieng6_cs15lfa22 36864 Sep 30 08:06 ..
-rwxr-x---  1 cs15lfa22fk ieng6_cs15lfa22  290 Sep  8 16:11 .zshrc
-rwxr-x---  1 cs15lfa22fk ieng6_cs15lfa22  481 Sep  8 16:11 .zshenv
-rwxr-x---  1 cs15lfa22fk ieng6_cs15lfa22 1931 Sep  8 16:11 .zprofile
-rwxr-x---  1 cs15lfa22fk ieng6_cs15lfa22 1961 Sep  8 16:11 .profile
-rwxr-x---  1 cs15lfa22fk ieng6_cs15lfa22  837 Sep  8 16:11 .procmailrc
-rwxr-x---  1 cs15lfa22fk ieng6_cs15lfa22  431 Sep  8 16:11 .login
-rwxr-x---  1 cs15lfa22fk ieng6_cs15lfa22  155 Sep  8 16:11 .locallogin
-rwxr-x---  1 cs15lfa22fk ieng6_cs15lfa22 1692 Sep  8 16:11 .kshrc
-rwxr-x---  1 cs15lfa22fk ieng6_cs15lfa22 1931 Sep  8 16:11 .cshrc
-rwxr-x---  1 cs15lfa22fk ieng6_cs15lfa22 1721 Sep  8 16:11 .bashrc
-rwxr-x---  1 cs15lfa22fk ieng6_cs15lfa22  975 Sep  8 16:11 .bash_profile

```

- Type in `ls -lat` in terminal and you should see things resembling the top half of the screenshot which shows the directory.
- You can type in `touch [filename]`
- Then type `ls -a` in the terminal which also shows more of a directory.
- You will see your files in the directory and the timestamp in which you added it.

Step 4 Moving Files with scp

```

Shays-MacBook-Pro:~ shaysamat$ scp WhereAmI.java cs15lfa22fk@ieng6.ucsd.edu:~/
(cs15lfa22fk@ieng6.ucsd.edu) Password:
WhereAmI.java                                100% 290    13.7KB/s  00:00
Shays-MacBook-Pro:~ shaysamat$

```

```

Shays-MacBook-Pro:~ shaysamat$ ssh cs15lfa22fk@ieng6.ucsd.edu
(cs15lfa22fk@ieng6.ucsd.edu) Password:
Last login: Fri Sep 30 16:31:23 2022 from cpe-76-176-153-196.san.res.rr.com
Hello cs15lfa22fk, you are currently logged into ieng6-203.ucsd.edu

You are using 0% CPU on this system

Cluster Status
Hostname      Time      #Users  Load  Averages
ieng6-201     17:10:01   11  0.01, 0.06, 0.06
ieng6-202     17:10:01    8  0.06, 0.14, 0.14
ieng6-203     17:10:01   10  0.11, 0.12, 0.13

Fri Sep 30, 2022  5:12pm - Prepping cs15lfa22
[cs15lfa22fk@ieng6-203]:~:17$ ls
WhereAmI.java  myfile.txt  myfile.txt.  perl5  poem.txt
[cs15lfa22fk@ieng6-203]:~:18$ █

```

- The first screenshot you want to input in the terminal scp WhereAmI.java cs15lfa22fk@ieng6.ucsd.edu:~/
- Then after you want to sign back into the ssh ssh cs15lfa22fk@ieng6.ucsd.edu
- After that you want to do the command ls to see the files, and you will see the WhereAmI.java file there

Step 5 Setting an SSH Key

```

[cs15lfa22fk@ieng6-203]:~:18$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/home/linux/ieng6/cs15lfa22/cs15lfa22fk/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/linux/ieng6/cs15lfa22/cs15lfa22fk/.ssh/id_rsa.
Your public key has been saved in /home/linux/ieng6/cs15lfa22/cs15lfa22fk/.ssh/id_rsa.pub.
The key fingerprint is:
SHA256:bKG/RtGQ8EPWGSVT41X8FGyuDNfjqk/wgG08TzGADEF8 cs15lfa22fk@ieng6-203.ucsd.edu
The key's randomart image is:
+---[RSA 2048]-----+
|      .+==+E+  o+o |
|      ++ =+  o  oo |
|      ++ +.  +.. |
|      o.oo.=.  o. |
|      . S.  ++o |
|      o.    +. |
|      .. oo+. |
|      .. *=o |
|      ..  .o. |
+-----[SHA256]-----+
[cs15lfa22fk@ieng6-203]:~:19$ $ ssh cs15lfa22zz@ieng6.ucsd.edu
bash: $: command not found...
[cs15lfa22fk@ieng6-203]:~:20$ ssh cs15lfa22fk@ieng6.ucsd.edu
cs15lfa22fk@ieng6.ucsd.edu's password:

```

- First you want to enter ssh-keygen

- Then you can enter a passphrase for your key, you can enter nothing if you want to
- After you do this, you can sign back in again with your key and you can switch from ssh to scp

Step 6 Optimizing Remote Running

```
● Shays-MacBook-Pro:~ shaysamat$ ssh cs15lfa22fk@ieng6.ucsd.edu "ls"  
(cs15lfa22fk@ieng6.ucsd.edu) Password:  
myfile.txt  
myfile.txt.  
perl5  
poem.txt  
WhereAmI.java
```

- You can make things much easier by simply putting the command in quotes
- You can also use semicolons to run multiple commands in one line