1. The difference between shell and bash is that bash is a type of shell, meaning all shell script will run in bash but not all bash scripts will necessarily work in shell. Both bash and shell allow communication between the user and machine. Bash is the default shell on my machine, because it is a Mac.

```
[(base) macbook-air-130:~ maceyjacobs$ pwd                                          ]
 /Users/maceyjacobs
[(base) macbook-air-130:~ maceyjacobs$ ls -a                                        ]
 .
 ..
 .CFUserTextEncoding
 .DS_Store
 .RData
 .Rapp.history
 .Rhistory
 .Trash
 .anaconda
 .astropy
 .bash_history
 .bash_profile
 .bash_profile.pysave
 .bash_sessions
 .conda
 .condarc
 .config
 .continuum
 .cups
 .gitconfig
 .grasp_jss
```

2. My home directory is maceyjacobs. It contains many files (the screenshot cuts them off) of work from my various computer science courses.

3.
   a.
   ```
   (base) macbook-air-130:~ maceyjacobs$ pwd
   /Users/maceyjacobs
   (base) macbook-air-130:~ maceyjacobs$ cd../../
   -bash: cd../../: No such file or directory
   ```
   This command would move back two folders, but since I am in my home directory, it returns "no such file or directory."

   b.
   ```
   (base) macbook-air-130:~ maceyjacobs$ pwd
   /Users/maceyjacobs
   (base) macbook-air-130:~ maceyjacobs$ cd Documents
   (base) macbook-air-130:Documents maceyjacobs$ pwd
   /Users/maceyjacobs/Documents
   (base) macbook-air-130:Documents maceyjacobs$ cd
   (base) macbook-air-130:~ maceyjacobs$ pwd
   /Users/maceyjacobs
   ```
   If I change from the home directory to a sub folder, then use the command "cd" without a specified folder after it, it will return me to the home directory.

```
[(base) macbook-air-130:~ maceyjacobs$ ls -a
.
..
.CFUserTextEncoding
.DS_Store
.RData
.Rapp.history
.Rhistory
.Trash
.anaconda
.astropy
.bash_history
.bash_profile
.bash_profile.pysave
.bash_sessions
.conda
.condarc
.config
.continuum
.cups
.gitconfig
.grasp_jss
.grasp_jss2
.grasp_settings
.idlerc
.ipython
.local
.matplotlib
.ssh
.tcshrc
.wing101-9
.xonshrc
.zshrc
14A.java
18A.java
18B.java
AccumulatingTotal.class
AccumulatingTotal.java
AdditionQuiz.log
AdditionQuiz.py
AnimalSounds.csv
Applications
Arithmetic.java
BMI.java
BabbageBurgers.class
BabbageBurgers.java
ChangMaker.java
Classwork10.Rmd
Classwork10.html
Classwork7.Rmd
Classwork7.html
Classwork9.Rmd
Classwork9.html
ClassworkLab2.Rmd
ClassworkLab2.html
ClassworkLab6.Rmd
ClassworkLab6.html
ClassworkLab8.Rmd
ClassworkLab8.html
ConversationStarter.java
CubeVolPractice
DCPARKINGANDTICKETANALYSIS.Rmd
DCPARKINGANDTICKETANALYSIS.html
```

4.

```
[(base) macbook-air-130:~ maceyjacobs$ ls -l
total 7203128
-rw-r--r--    1 maceyjacobs  staff        819 Sep 25  2019 14A.java
-rw-r--r--    1 maceyjacobs  staff         83 Oct  3  2019 18A.java
-rw-r--r--    1 maceyjacobs  staff        608 Oct  2  2019 18B.java
-rw-r--r--    1 maceyjacobs  staff       1372 Sep 11  2019 AccumulatingTotal.class
-rw-r--r--    1 maceyjacobs  staff        421 Sep 11  2019 AccumulatingTotal.java
-rw-r--r--    1 maceyjacobs  staff       2270 Mar  2  2023 AdditionQuiz.log
-rw-r--r--    1 maceyjacobs  staff       3211 Mar  2  2023 AdditionQuiz.py
-rw-r--r--@   1 maceyjacobs  staff         90 Mar 16  2023 AnimalSounds.csv
drwxr-xr-x    8 maceyjacobs  staff        256 Sep 12 10:33 Applications
-rw-r--r--    1 maceyjacobs  staff        800 Sep  3  2019 Arithmetic.java
-rw-r--r--    1 maceyjacobs  staff       1031 Sep 13  2019 BMI.java
-rw-r--r--    1 maceyjacobs  staff       1608 Sep 12  2019 BabbageBurgers.class
-rw-r--r--    1 maceyjacobs  staff        686 Sep 12  2019 BabbageBurgers.java
-rw-r--r--    1 maceyjacobs  staff        788 Sep  5  2019 ChangMaker.java
-rw-r--r--    1 maceyjacobs  staff       3111 Aug  6 19:59 Classwork10.Rmd
-rw-r--r--    1 maceyjacobs  staff    9422206 Aug  6 19:59 Classwork10.html
-rw-r--r--    1 maceyjacobs  staff       1927 Jul 25 21:19 Classwork7.Rmd
-rw-r--r--    1 maceyjacobs  staff       1927 Jul 25 21:19 Classwork7.html
-rw-r--r--    1 maceyjacobs  staff       2904 Aug  5 10:00 Classwork9.Rmd
-rw-r--r--    1 maceyjacobs  staff     979467 Aug  5 10:00 Classwork9.html
-rw-r--r--    1 maceyjacobs  staff       2126 Jul 10 08:56 ClassworkLab2.Rmd
-rw-r--r--    1 maceyjacobs  staff       2127 Jul  9 20:34 ClassworkLab2.html
-rw-r--r--    1 maceyjacobs  staff       1246 Jul 23 20:35 ClassworkLab6.Rmd
-rw-r--r--    1 maceyjacobs  staff     630364 Jul 23 20:35 ClassworkLab6.html
-rw-r--r--    1 maceyjacobs  staff       1564 Jul 30 19:19 ClassworkLab8.Rmd
-rw-r--r--    1 maceyjacobs  staff     633854 Jul 30 19:19 ClassworkLab8.html
-rw-r--r--    1 maceyjacobs  staff        389 Sep 12  2019 ConversationStarter.java
-rw-r--r--    1 maceyjacobs  staff          0 Feb  2  2023 CubeVolPractice
-rw-r--r--    1 maceyjacobs  staff      10966 Aug  8 17:56 DCPARKINGANDTICKETANALYSIS.Rmd
-rw-r--r--@   1 maceyjacobs  staff    4489212 Aug  8 17:57 DCPARKINGANDTICKETANALYSIS.html
drwx------+ 230 maceyjacobs  staff       7360 Sep 13 13:32 Desktop
drwx------+  21 maceyjacobs  staff        672 Mar 15  2023 Documents
drwx------@ 1884 maceyjacobs staff      60288 Sep  5 16:46 Downloads
-rw-r--r--    1 maceyjacobs  staff       8342 Aug 10 12:26 Final.Rmd
-rw-r--r--    1 maceyjacobs  staff    2369774 Aug 10 12:26 Final.html
-rw-r--r--    1 maceyjacobs  staff       7064 Aug  8 14:04 FinalProject.Rmd
-rw-r--r--    1 maceyjacobs  staff    3417532 Aug  8 14:05 FinalProject.html
-rw-r--r--    1 maceyjacobs  staff      11151 Aug  8 16:03 FinalProjectedits.Rmd
-rw-r--r--    1 maceyjacobs  staff   42131794 Aug  8 16:06 FinalProjectedits.html
-rw-r--r--    1 maceyjacobs  staff        757 Aug 30  2019 HelloWorld.class
-rw-r--r--    1 maceyjacobs  staff        412 Aug 30  2019 HelloWorld.java
-rw-r--r--    1 maceyjacobs  staff       1855 Jul  3 11:02 Homework1.Rmd
-rw-r--r--    1 maceyjacobs  staff     627134 Jul  3 11:02 Homework1.html
-rw-r--r--    1 maceyjacobs  staff       3260 Jul 10 10:01 Homework2.Rmd
-rw-r--r--    1 maceyjacobs  staff       3260 Jul 10 10:01 Homework2.html
-rw-r--r--    1 maceyjacobs  staff       4722 Jul 16 20:20 Homework4.Rmd
-rw-r--r--    1 maceyjacobs  staff       4722 Jul 16 20:20 Homework4.html
-rw-r--r--    1 maceyjacobs  staff       4044 Jul 22 00:04 Homework5.Rmd
-rw-r--r--    1 maceyjacobs  staff     891715 Jul 22 00:05 Homework5.html
-rw-r--r--    1 maceyjacobs  staff       3708 Jul 23 20:13 Homework6.Rmd
-rw-r--r--    1 maceyjacobs  staff       3708 Jul 23 20:13 Homework6.html
-rw-r--r--    1 maceyjacobs  staff       2993 Jul 26 22:49 Homework7.Rmd
-rw-r--r--    1 maceyjacobs  staff     632055 Jul 26 22:50 Homework7.html
-rw-r--r--    1 maceyjacobs  staff       3024 Jul 31 09:22 Homework8.Rmd
-rw-r--r--    1 maceyjacobs  staff     638731 Jul 31 09:22 Homework8.html
-rw-r--r--    1 maceyjacobs  staff       4013 Aug  5 13:31 Homework9.Rmd
-rw-r--r--    1 maceyjacobs  staff     631350 Aug  5 13:32 Homework9.html
-rw-r--r--    1 maceyjacobs  staff        487 Sep  2  2019 House.java
-rw-r--r--    1 maceyjacobs  staff       3820 Feb 27  2024 JacobsAsssignment1.py
-rw-r--r--    1 maceyjacobs  staff        791 Sep  2  2019 Lab01B.class
```

I only included the first page of files for each result, because I have so many files in my home directory. Ls –a returns a list of all files including the files with a dot before them. Ls –l returns a longer form list with additional detail but not the files with dots before them.

5.

```
[(base) macbook-air-130:~ maceyjacobs$ mkdir temp_bash
[(base) macbook-air-130:~ maceyjacobs$ cd temp_bash
[(base) macbook-air-130:temp_bash maceyjacobs$ touch myfile.txt
[(base) macbook-air-130:temp_bash maceyjacobs$ ls
myfile.txt
[(base) macbook-air-130:temp_bash maceyjacobs$ stat myfile.txt
16777233 88530218 -rw-r--r-- 1 maceyjacobs staff 0 0 "Sep 13 13:43:31 2024" "Sep 13 13:43:31 2024" "Sep 13 13:43:31 2024" "Sep 13 13:43:31 2024" 4096 0 0 myfile.txt
(base) macbook-air-130:temp_bash maceyjacobs$
```

The numbers may refer to the location of the file in memory, or the size (I am not sure). Then the home directory is listed as the owner/location, and the dates refer to the creation date, access dates, and modification dates.

```
[(base) macbook-air-130:temp_bash maceyjacobs$ echo "This is my first line" >> myfile.txt
[(base) macbook-air-130:temp_bash maceyjacobs$ echo "This is my second line" >> myfile.txt
[(base) macbook-air-130:temp_bash maceyjacobs$ cat myfile.txt
 This is my first line
 This is my second line
[(base) macbook-air-130:temp_bash maceyjacobs$ cp myfile.txt copy_myfile.txt
[(base) macbook-air-130:temp_bash maceyjacobs$ echo "This is a new line" > copy_myfile.txt
[(base) macbook-air-130:temp_bash maceyjacobs$ cat copy_myfile.txt
 This is a new line
```

6. The difference between >> and > is that using >> adds a new line and > replaces the text with new text.