George Suarez
CSE 460
Lab 1
20 Point Total

1) Basic Linux Commands

ls - Lists the contents of the working directory

[006098556@csusb.edu@csevnc ~]$ ls

Desktop Documents Downloads Music Pictures Public Templates Videos

ls -a - Lists the contents of the working directory as well hidden contents with the *-a* option

[006098556@csusb.edu@csevnc ~]$ ls -a

.   .bashrc   Downloads .ICEauthority   Pictures Videos

..   .cache   .emacs.d .local   .pki   .viminfo

.atom   .ccache   .esd_auth .mozilla   Public   .vscode

.bash_history .config   .gitconfig Music   .racket

.bash_logout Desktop .gnome   .nv   .ssh

.bash_profile Documents .gnupg   .oracle_jre_usage Templates

cp – Makes copies of files and directories

[006098556@csusb.edu@csevnc test]$ ls

file1.txt file2.txt test2

[006098556@csusb.edu@csevnc test]$ cp file1.txt newfile1.txt

[006098556@csusb.edu@csevnc test]$ ls

file1.txt file2.txt newfile1.txt test2

Copying file2.txt into test2 directory

[006098556@csusb.edu@csevnc test]$ cp file2.txt test2

[006098556@csusb.edu@csevnc test]$ cd test2

[006098556@csusb.edu@csevnc test2]$ ls

file2.txt

rm – Removes files or directories

[006098556@csusb.edu@csevnc test2]$ ls

file2.txt

[006098556@csusb.edu@csevnc test2]$ rm file2.txt

[006098556@csusb.edu@csevnc test2]$ ls
[006098556@csusb.edu@csevnc test2]$

rm -rf – Removes files or directories by using recursion to remove any subdirectories that the directory may have and its' files by force

[006098556@csusb.edu@csevnc test]$ ls test2
file3.txt file4.txt file5.txt test3 test4 test5
[006098556@csusb.edu@csevnc test]$ rm -rf test2
[006098556@csusb.edu@csevnc test]$ ls test2
ls: cannot access 'test2': No such file or directory

mv – Moves files or directories given the source and destination

[006098556@csusb.edu@csevnc test]$ ls
file1.txt file2.txt newfile1.txt test2
[006098556@csusb.edu@csevnc test]$ mv file1.txt test2
[006098556@csusb.edu@csevnc test]$ ls
file2.txt newfile1.txt test2
[006098556@csusb.edu@csevnc test]$ cd test2
[006098556@csusb.edu@csevnc test2]$ ls
file1.txt

Renaming files using *mv*

[006098556@csusb.edu@csevnc test]$ ls
file2.txt newfile1.txt test2
[006098556@csusb.edu@csevnc test]$ mv file2.txt file3.txt
[006098556@csusb.edu@csevnc test]$ ls
file3.txt newfile1.txt test2

mkdir – Creates a new directory given a name

[006098556@csusb.edu@csevnc test]$ ls
file1.txt
[006098556@csusb.edu@csevnc test]$ mkdir test2
[006098556@csusb.edu@csevnc test]$ ls
file1.txt test2

cd – Changes the directory

[006098556@csusb.edu@csevnc test]$ ls

```
file3.txt  newfile1.txt  test2
[006098556@csusb.edu@csevnc test]$ cd test2
[006098556@csusb.edu@csevnc test2]$ ls
file1.txt
```

cd .. – Goes up a level of the directory

```
[006098556@csusb.edu@csevnc test2]$ ls
file1.txt
[006098556@csusb.edu@csevnc test2]$ cd ..
[006098556@csusb.edu@csevnc test]$ ls
file3.txt  newfile1.txt  test2
```

vi – Opens up the built-in text editor on your terminal

Creates a text file by using *vi*

```
[006098556@csusb.edu@csevnc test]$ vi file1.txt
[006098556@csusb.edu@csevnc test]$ ls
file1.txt
```

2) The C++ Program

main.cpp:

```cpp
#include "message.h"
int main()
{
 display_message("CSUSB CSE 460 is Beautiful!");
   return 0;
}
```

message.cpp:

```cpp
#include "message.h"
#include <string>
#include <iostream>


void display_message(std::string msg)
```

```
{
    std::cout << msg << std::endl;
}
```

message.h:

```
#ifndef MESSAGE_H
#define MESSAGE_H

#include <string>

void display_message(std::string msg);

#endif
```

Makefile:

```
message: message.o main.o
    g++ -o message message.o main.o

message.o main.o:
    g++ -c message.cpp
    g++ -c main.cpp

clean:
    rm message.o main.o message
```

Using the Makefile to run the C++ program:

georgesuarez at MacBook-Pro in ~/University/cse460/Lab 1 on master*

$ ls

Makefile   main.cpp   message.cpp message.h

georgesuarez at MacBook-Pro in ~/University/cse460/Lab 1 on master*

$ make message

g++ -c message.cpp

g++ -c main.cpp

g++ -o message message.o main.o

georgesuarez at MacBook-Pro in ~/University/cse460/Lab 1 on master*

$ ./message

CSUSB CSE 460 is Beautiful!

georgesuarez at MacBook-Pro in ~/University/cse460/Lab 1 on master*

$ ls

Makefile   main.o   message.cpp message.o

main.cpp   message   message.h

georgesuarez at MacBook-Pro in ~/University/cse460/Lab 1 on master*

$ make clean

rm message.o main.o message

georgesuarez at MacBook-Pro in ~/University/cse460/Lab 1 on master*

$ ls

Makefile   main.cpp   message.cpp message.h

georgesuarez at MacBook-Pro in ~/University/cse460/Lab 1 on master*

$

Points Given: 20/20

Comments: I gave clear and concise explanations of each linux commands as well with examples, and successfully ran the C++ program by using a Makefile.