Lab 1

Adrian Lopez
Casey Vassios

Lab Objective

- Review the following basic Unix commands: *ls, cp, rm, mv, cd, mkdir, vi*
- Develop a simple C++ application using Makefile. The app consists of two files, *main.cpp* and *message.cpp*. The former contains the **main()** function and the later has the function **display_message(..)** that takes a string as input and prints it out. The **main()** function calls **display_message(..)** to display a message such as *CSUSB CSE 460 the Beautiful!*. Your Makefile should link the modules together by command

Unix Commands

ls: lists files in a directory

```
                    004628818@jb358-22:/students/csci/004628818              ×

 File  Edit  View  Search  Terminal  Help
[004628818@jb358-22 004628818]$ ls
cse202  cse330  cse572   Documents  Music     Public     Videos
cse320  cse500  Desktop  Downloads  Pictures  Templates
[004628818@jb358-22 004628818]$ ls -a
.                 Desktop          .gnote           .nv
..                .dia             .gnupg           .oracle_jre_usage
.adobe            .dmrc            .gstreamer-0.10  Pictures
.bash_history     Documents        .gtk-bookmarks   .printer-groups.xml
.bash_logout      Downloads        .gvfs            Public
.bash_profile     .emacs           .ICEauthority    .pulse
.bashrc           .emacs.d         .icons           .pulse-cookie
.cache            .esd_auth        .java            .ssh
.config           .esets           .kde             Templates
cse202            .fontconfig      .kmrc            .themes
cse320            .gconf           .local           .thumbnails
cse330            .gconfd          .macromedia      Videos
cse500            .gimp-2.6        .mozilla         .viminfo
cse572            .gnome2          Music            .vnc
.dbus             .gnome2_private  .nautilus        .Xauthority
[004628818@jb358-22 004628818]$ 
```

```
              004628818@jb358-22:/students/csci/004628818/cse330/hw1         ×

 File  Edit  View  Search  Terminal  Help
[004628818@jb358-22 hw1]$ ls -l
total 48
-rwxr-xr-x 1 004628818 csci 14371 Apr 30  2014 hw1
-rw-r--r-- 1 004628818 csci  1149 Apr 30  2014 hw1.cpp
-rw-r--r-- 1 004628818 csci  1669 Apr 30  2014 hw1.cpp~
-rw-r--r-- 1 004628818 csci  4376 Apr 30  2014 hw1.txt
-rw-r--r-- 1 004628818 csci     0 Apr 30  2014 hw1.txt~
-rw-r--r-- 1 004628818 csci  1166 May  2  2014 hw2.cpp~
-rw-r--r-- 1 004628818 csci  2555 Apr 30  2014 vector.h
-rw-r--r-- 1 004628818 csci  2557 Apr 30  2014 vector.h~
-rw-r--r-- 1 004628818 csci    19 Apr 29  2014 vector.txt
[004628818@jb358-22 hw1]$ 
```

cp: copy files/directories from one directory to another

```
004628818@jb358-22:/students/csci/004628818/Documents/cse460                    ✕

File   Edit   View   Search   Terminal   Help

[004628818@jb358-22 Documents]$ ls
cse202  cse320  cse330  cse460  cse500  cse572  temp.cpp
[004628818@jb358-22 Documents]$ cp temp.cpp cse460
[004628818@jb358-22 Documents]$ cd cse460
[004628818@jb358-22 cse460]$ ls
temp.cpp
[004628818@jb358-22 cse460]$ ▯
```

```
004628818@jb358-22:/students/csci/004628818                                     ✕

File   Edit   View   Search   Terminal   Help

[004628818@jb358-22 004628818]$ ls
cse460-2  Documents  Music      Public      Videos
Desktop   Downloads  Pictures   Templates
[004628818@jb358-22 004628818]$ cp -r cse460-2 Documents
[004628818@jb358-22 004628818]$ cd Documents
[004628818@jb358-22 Documents]$ ls
cse202  cse320  cse330  cse460  cse460-2  cse500  cse572  lab1.cpp
[004628818@jb358-22 Documents]$ cd ..
[004628818@jb358-22 004628818]$ ls
cse460-2  Documents  Music      Public      Videos
Desktop   Downloads  Pictures   Templates
[004628818@jb358-22 004628818]$ ▯
```

rm: remove file from a directory

```
004628818@jb358-22:/students/csci/004628818/Documents                           ✕

File   Edit   View   Search   Terminal   Help

[004628818@jb358-22 Documents]$ ls
cse202  cse320  cse330  cse460  cse500  cse572  temp.cpp
[004628818@jb358-22 Documents]$ rm temp.cpp
[004628818@jb358-22 Documents]$ ls
cse202  cse320  cse330  cse460  cse500  cse572
[004628818@jb358-22 Documents]$ ▯
```

```
004628818@jb358-22:/students/csci/004628818/Documents                           ✕

File   Edit   View   Search   Terminal   Help

[004628818@jb358-22 Documents]$ ls
cse202  cse320  cse330  cse460  cse460-2  cse500  cse572
[004628818@jb358-22 Documents]$ rm -d cse460-2
[004628818@jb358-22 Documents]$ ls
cse202  cse320  cse330  cse460  cse500  cse572
[004628818@jb358-22 Documents]$ ▯
```

_mv_: move file from one directory to another or rename a file

```
004628818@jb358-22:/students/csci/004628818/Documents        ✕

File  Edit  View  Search  Terminal  Help
[004628818@jb358-22 Documents]$ ls
cse202  cse320  cse330  cse460  cse500  cse572  temp.cpp
[004628818@jb358-22 Documents]$ mv temp.cpp 460.cpp
[004628818@jb358-22 Documents]$ ls
460.cpp  cse202  cse320  cse330  cse460  cse500  cse572
[004628818@jb358-22 Documents]$ ▯
```

```
004628818@jb358-22:/students/csci/004628818/Documents/cse460     ✕

File  Edit  View  Search  Terminal  Help
[004628818@jb358-22 Documents]$ ls
cse202  cse320  cse330  cse460  cse500  cse572  temp.cpp
[004628818@jb358-22 Documents]$ mv temp.cpp cse460
[004628818@jb358-22 Documents]$ ls
cse202  cse320  cse330  cse460  cse500  cse572
[004628818@jb358-22 Documents]$ cd cse460
[004628818@jb358-22 cse460]$ ls
temp.cpp
[004628818@jb358-22 cse460]$ ▯
```

_cd_: change directory

```
004628818@jb358-22:/students/csci/004628818/Documents/cse460     ✕

File  Edit  View  Search  Terminal  Help
[004628818@jb358-22 Documents]$ ls
cse202  cse320  cse330  cse460  cse500  cse572
[004628818@jb358-22 Documents]$ cd cse460
[004628818@jb358-22 cse460]$ ls
temp.cpp
[004628818@jb358-22 cse460]$ ▯
```

```
004628818@jb358-22:/students/csci/004628818           ✕

File  Edit  View  Search  Terminal  Help
[004628818@jb358-22 004628818]$ mkdir cse460
[004628818@jb358-22 004628818]$ ls
cse202  cse330  cse500  Desktop    Downloads  Pictures  Templates
cse320  cse460  cse572  Documents  Music      Public    Videos
[004628818@jb358-22 004628818]$ ▯
```

mkdir: make directory

```
[004628818@jb358-22 004628818]$ mkdir cse460
[004628818@jb358-22 004628818]$ ls
cse202   cse330   cse500   Desktop     Downloads   Pictures   Templates
cse320   cse460   cse572   Documents   Music       Public     Videos
[004628818@jb358-22 004628818]$ ▢
```

```
[004628818@jb358-22 Documents]$ mkdir cse460-2
[004628818@jb358-22 Documents]$ ls
cse202   cse320   cse330   cse460   cse460-2   cse500   cse572
[004628818@jb358-22 Documents]$ ▢
```

_vi_: opens vi text editor to create or edit a file

```
Lab 1 vi example▢
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
-- INSERT --                                    1,17          All
```

Editing file in vi

```
OO4628818@jb358-22:/students/csci/OO4628818/Documents          ✕

File  Edit  View  Search  Terminal  Help
[004628818@jb358-22 Documents]$ ls
cse202  cse320  cse330  cse460  cse500  cse572
[004628818@jb358-22 Documents]$ vi lab1.cpp
[004628818@jb358-22 Documents]$ ls
cse202  cse320  cse330  cse460  cse500  cse572  lab1.cpp
[004628818@jb358-22 Documents]$ ▯
```

Creating file using vi

main.cpp
#include <iostream>

using namespace std;

#include "functions.h"

int main(){
        display_message();
        cout << endl;
        return 0;
}

message.cpp
#include <iostream>

using namespace std;

#include "functions.h"

void display_message(){
        string message;
        getline(cin, message);
        cout << message;
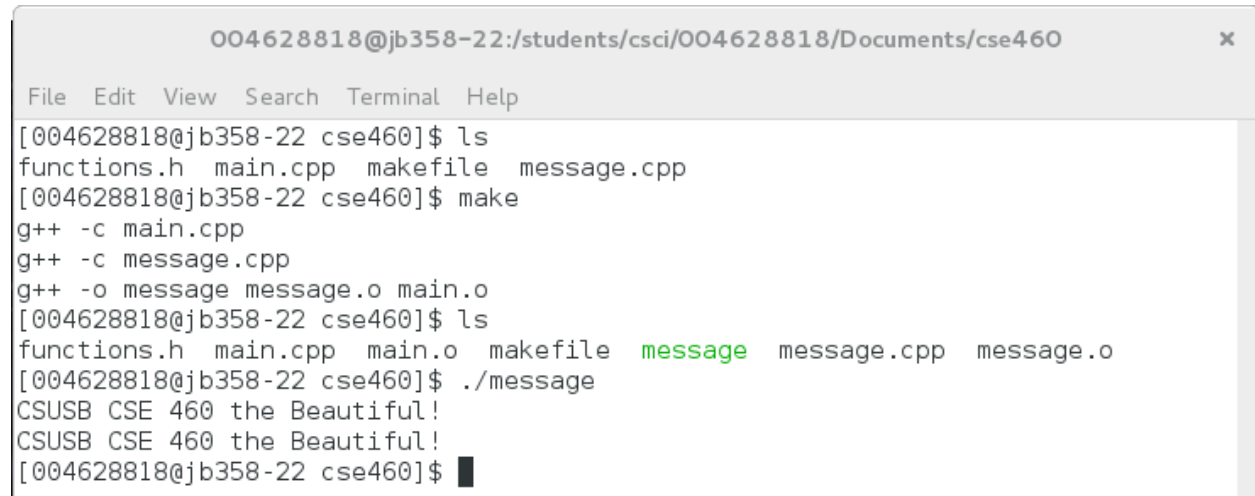}

functions.h
void display_message();

makefile

message: main.o message.o

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

main.o: main.cpp

      g++ -c main.cpp

message.o: message.cpp

      g++ -c message.cpp

Executable


```
004628818@jb358-22:/students/csci/004628818/Documents/cse460                    ×

File  Edit  View  Search  Terminal  Help
[004628818@jb358-22 cse460]$ ls
functions.h  main.cpp  makefile  message.cpp
[004628818@jb358-22 cse460]$ make
g++ -c main.cpp
g++ -c message.cpp
g++ -o message message.o main.o
[004628818@jb358-22 cse460]$ ls
functions.h  main.cpp  main.o  makefile  message  message.cpp  message.o
[004628818@jb358-22 cse460]$ ./message
CSUSB CSE 460 the Beautiful!
CSUSB CSE 460 the Beautiful!
[004628818@jb358-22 cse460]$ █
```

Evaluation

We have described and given examples of the following terminal commands: ls, cp, rm, mv, cd, mkdir, vi.

We successfully developed the display_message program using Makefile. The makefile creates the .o files required to make the executable message.

Score: 20/20