README
Sender & Receiver-IPC

Section#: CPSC 351-01 10536

Names: Email Address:
Allen Mrazek   amrazek@csu.fullerton.edu
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Each member's contribution:
Allen Mrazek: Wrote the error handling code, the design document, and
                took screenshots.
Jeremy Rico : Actualized Reader Program
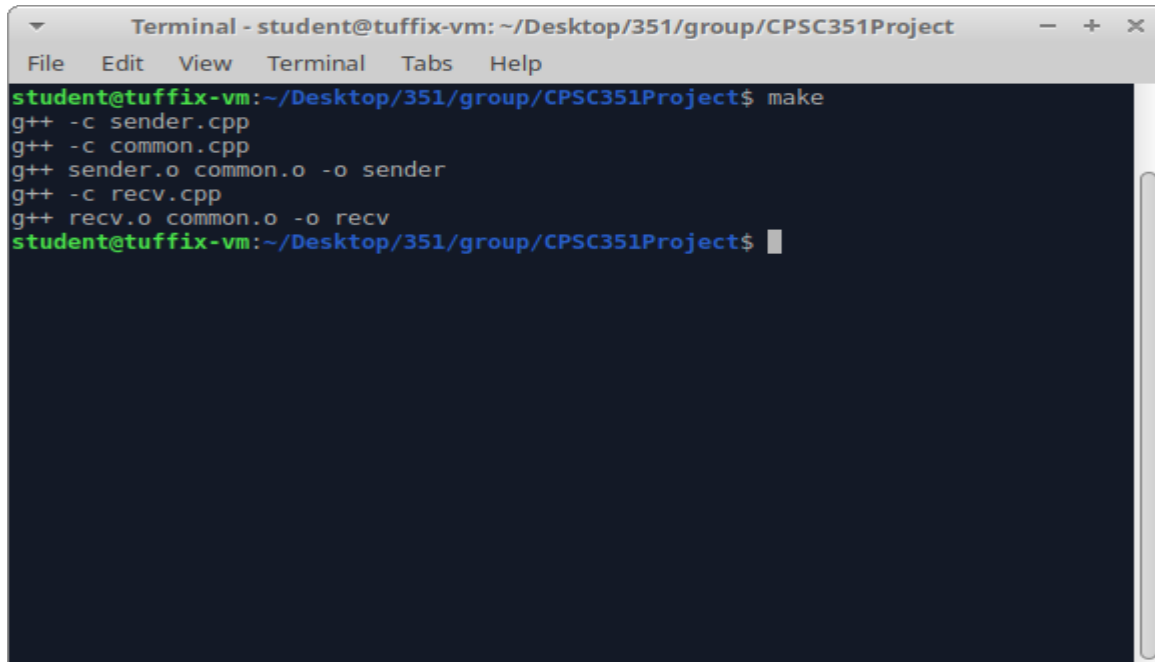Saytu Singh: Actualized Writer Program
Trenton Jansen: Administration and wrote README.txt.

Programming Language:
For this project, we conducted a C++ program that demonstrates a IPC (Inter Process Communication) between a sender and a receiver.
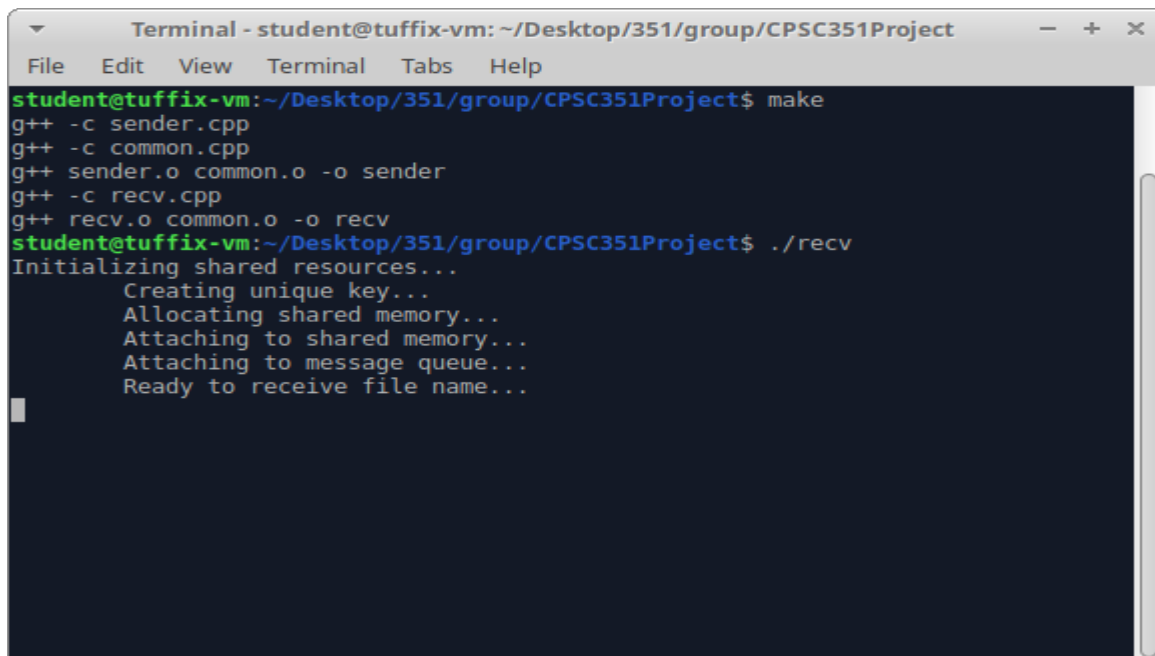
How to execute program:
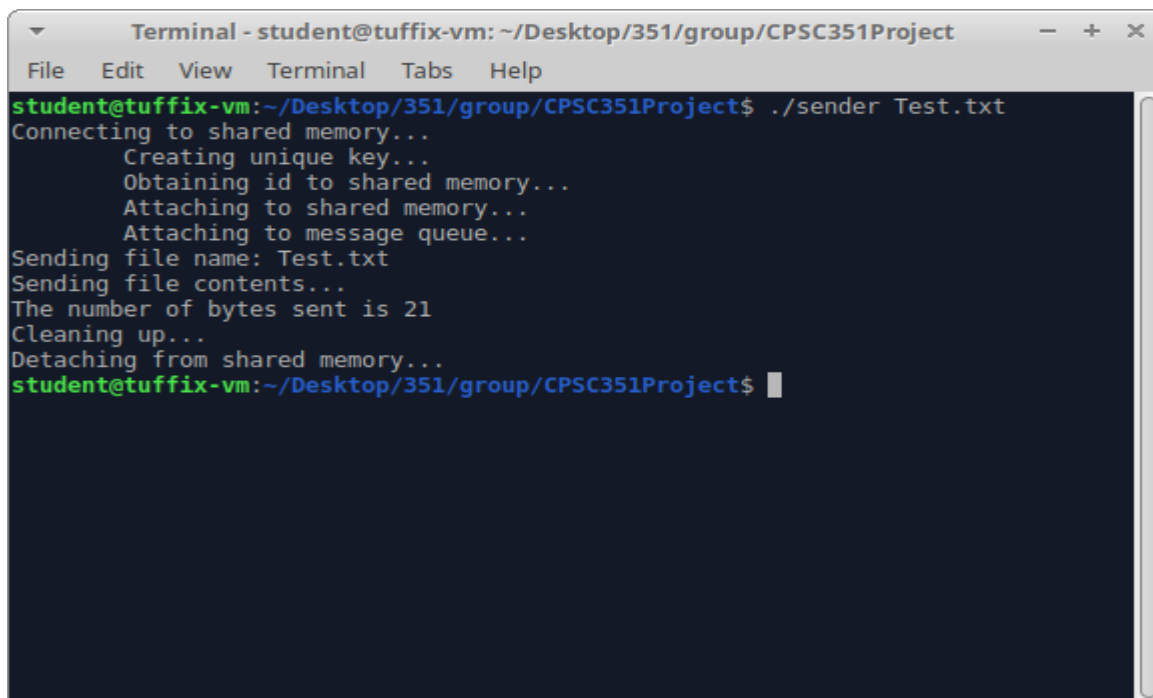
1. cd to project directory
2. type 'make'

```
Terminal - student@tuffix-vm: ~/Desktop/351/group/CPSC351Project     —  +  ×
File   Edit   View   Terminal   Tabs   Help
student@tuffix-vm:~/Desktop/351/group/CPSC351Project$ make
g++ -c sender.cpp
g++ -c common.cpp
g++ sender.o common.o -o sender
g++ -c recv.cpp
g++ recv.o common.o -o recv
student@tuffix-vm:~/Desktop/351/group/CPSC351Project$ ▮
```

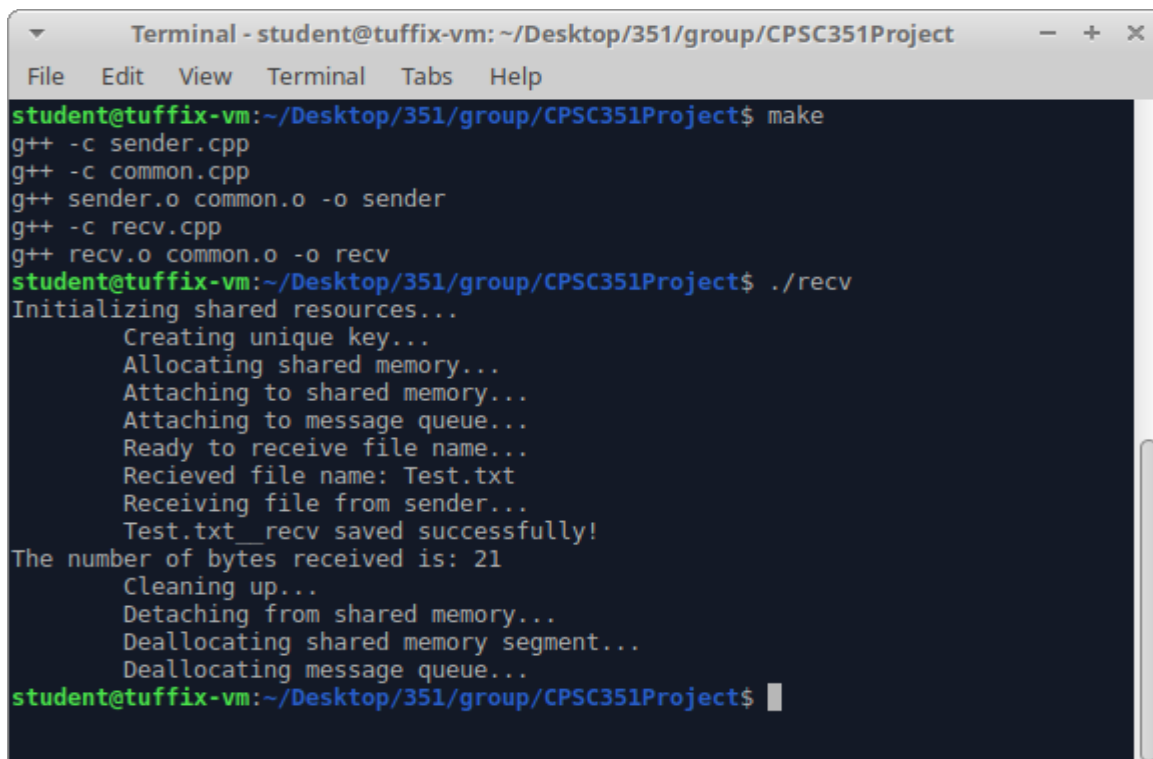3. execute receiver program with './recv' command. Receiver program must be run before the sender program.

```
Terminal - student@tuffix-vm: ~/Desktop/351/group/CPSC351Project     —  +  ×
File   Edit   View   Terminal   Tabs   Help
student@tuffix-vm:~/Desktop/351/group/CPSC351Project$ make
g++ -c sender.cpp
g++ -c common.cpp
g++ sender.o common.o -o sender
g++ -c recv.cpp
g++ recv.o common.o -o recv
student@tuffix-vm:~/Desktop/351/group/CPSC351Project$ ./recv
Initializing shared resources...
        Creating unique key...
        Allocating shared memory...
        Attaching to shared memory...
        Attaching to message queue...
        Ready to receive file name...
▮
```

4. in a separate terminal, run sender program to './sender <filename>' command. File to be sent is a command line parameter. Example: ./sender MyFile.txt

```
Terminal - student@tuffix-vm: ~/Desktop/351/group/CPSC351Project        —  +  ✕
File   Edit   View   Terminal   Tabs   Help
student@tuffix-vm:~/Desktop/351/group/CPSC351Project$ ./sender Test.txt
Connecting to shared memory...
        Creating unique key...
        Obtaining id to shared memory...
        Attaching to shared memory...
        Attaching to message queue...
Sending file name: Test.txt
Sending file contents...
The number of bytes sent is 21
Cleaning up...
Detaching from shared memory...
student@tuffix-vm:~/Desktop/351/group/CPSC351Project$ █
```

5. Receiver program finished.

```
Terminal - student@tuffix-vm: ~/Desktop/351/group/CPSC351Project        —  +  ✕
File   Edit   View   Terminal   Tabs   Help
student@tuffix-vm:~/Desktop/351/group/CPSC351Project$ make
g++ -c sender.cpp
g++ -c common.cpp
g++ sender.o common.o -o sender
g++ -c recv.cpp
g++ recv.o common.o -o recv
student@tuffix-vm:~/Desktop/351/group/CPSC351Project$ ./recv
Initializing shared resources...
        Creating unique key...
        Allocating shared memory...
        Attaching to shared memory...
        Attaching to message queue...
        Ready to receive file name...
        Recieved file name: Test.txt
        Receiving file from sender...
        Test.txt__recv saved successfully!
The number of bytes received is: 21
        Cleaning up...
        Detaching from shared memory...
        Deallocating shared memory segment...
        Deallocating message queue...
student@tuffix-vm:~/Desktop/351/group/CPSC351Project$ █
```

6. Sender Finished.

```
Terminal - student@tuffix-vm: ~/Desktop/351/group/CPSC351Project     — + ×

File   Edit   View   Terminal   Tabs   Help

student@tuffix-vm:~/Desktop/351/group/CPSC351Project$ ./sender Test.txt
Connecting to shared memory...
        Creating unique key...
        Obtaining id to shared memory...
        Attaching to shared memory...
        Attaching to message queue...
Sending file name: Test.txt
Sending file contents...
The number of bytes sent is 21
Cleaning up...
Detaching from shared memory...
student@tuffix-vm:~/Desktop/351/group/CPSC351Project$ ./sender Test.txt
Connecting to shared memory...
        Creating unique key...
        Obtaining id to shared memory...
        Attaching to shared memory...
        Attaching to message queue...
Sending file name: Test.txt
Sending file contents...
The number of bytes sent is 21
Cleaning up...
Detaching from shared memory...
student@tuffix-vm:~/Desktop/351/group/CPSC351Project$ █
```

7. Ctrl+C will exit receiver program

```
Terminal - student@tuffix-vm: ~/Desktop/351/group/CPSC351Project     — + ×

File   Edit   View   Terminal   Tabs   Help

student@tuffix-vm:~/Desktop/351/group/CPSC351Project$ make
g++ -c sender.cpp
g++ -c common.cpp
g++ sender.o common.o -o sender
g++ -c recv.cpp
g++ recv.o common.o -o recv
student@tuffix-vm:~/Desktop/351/group/CPSC351Project$ ./recv
Initializing shared resources...
        Creating unique key...
        Allocating shared memory...
        Attaching to shared memory...
        Attaching to message queue...
        Ready to receive file name...
^C
Ctrl + C entered: cleaning memory...
        Detaching from shared memory...
        Deallocating shared memory segment...
        Deallocating message queue...
Receive filename failed: Interrupted system call
student@tuffix-vm:~/Desktop/351/group/CPSC351Project$ █
```