

DSH

## Description

This program is ment to make a mailbox server f  
or clients to pass messages in.

- THIS WILL ONLY RUN ON LINUX -

## Algorithms and libraries used:

As for Algorithms, nothing significant was used

## List of Libraries:

```
//for c style input and output
#include<stdio.h>
// for c string functions
#include<string.h>
// for stoi
#include<stdlib.h>
// for sockets
#include<sys/socket.h>
// for the inet_addr
#include<arpa/inet.h>
// for the write command
#include<unistd.h>
// for threading
#include<pthread.h>
```

## Functions and Program structure

### dcip

the main function starts up a server and handle  
s main memory

The other functions handle what happens when a  
client connects to a server

### dciprm

very simple client that sends a very specific k  
ill message to server

### client.py

python client given from the project descriptio

n

[https://d21.sdbor.edu/content/enforced/2015FA/777862-CSC\\_456\\_M001\\_2016SP\\_538486/program3.html](https://d21.sdbor.edu/content/enforced/2015FA/777862-CSC_456_M001_2016SP_538486/program3.html)  
handles simple connections to server

List of functions:

```
//global handlers
bool allocateGlobals(char *argv[]);
void deallocateGlobals(char *argv[]);

//checks the argc value
bool checkArgc(int argc);

//handles the arguments passed from the python client
bool checkArguments(char *currentArg, int sock);

//handles specific client commands
void handleRead(int mailBox, int sock);
void handleWrite(int mailBox, int sock);

//the thread function - provided by
http://www.binarytides.com/server-client-example-c-sockets-linux/
void *connection_handler(void *);
```

Compiling the program:

There is a make file provide. Using the make command will compile the program.

Also the command: "g++ -pthread -o dipc DIPC.cpp -std=c++11" will as well for the main program as well as: "g++ -pthread -o dipcrm dipcrm.c" for the removal program and python client.py works for running the client

Testing and Verification:

The code was tested by manually running the program. Using the python client.

Bug - The client works spotty at best

Bug - It was increadibly difficult to test this program

Bug - The client overall, barely works - what it recieves often lags a command behind

Bug - Does not check for deadlocks

Submitted Files:

prog3.pdf, DICP.cpp, Makefile, dipcrm.c, client.py

prog3.pdf = This descriptive document of this project

DICP.cpp = The code for this project

Makefile = compiling tool for code

dipcrm.c = removal client code

client.py = basic python client that can kindof talk to the server

-CLERIFICATION

due to this from the program description:

"First line will have a "r" for read, "w" for write, or "q" for quit and the mailbox number.

A line is text and then newline - correct?"

because of this the program expects an enter after a command such as r 1 or w 4.

-FAILURES-

Does not check for deadlocks - only deadlock being if a writer never finishes writing.

Also does not use Deamon functionality

- side note: I'm not proud of this program... I hated every minute of it.