

COMP 7005

Assignment 1

User Guide

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Purpose

- A simple program to demonstrate how client-server applications work over UNIX domain sockets.

Installing

Obtaining

```
git clone  
https://github.com/GursidhSandhu/Comp-7005-Assign-1.git
```

Building

```
cd source/src/  
g++ server.cpp -o server  
g++ client.cpp -o client
```

Running

1st run server and choose any appropriate socket path

```
./server /tmp/dns
```

Then in another terminal run client with the same socket path and choose 1/3 available text files (from the source/include directory).

```
./client /tmp/dns messi.txt
```

Environment Variables

The following environment variables alter the behaviour of main:

Variable	Purpose
exit_flag	To end the program once user clicks CTRL-C

Configuration

The following configuration values can be set in server.cpp and client.cpp:

Variable	Purpose
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BUFFERS IZE	For storing incoming data, can be adjusted if greater files want to be used.
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Command Line Arguments

The following configuration values can be set in the command line:

Variable	Purpose
socketPath	The location on which the socket will bind and communication will take place
fileName	The fileName the server is to find contents of

Examples

```

gursidhsandhu@Gursidhs-MacBook-Pro Desktop % git clone https://github.com/Gursidhsandhu/Comp-7005-Assign-1.git
Cloning into 'Comp-7005-Assign-1'...
remote: Enumerating objects: 29, done.
remote: Counting objects: 100% (29/29), done.
remote: Compressing objects: 100% (27/27), done.
remote: Total 29 (delta 4), reused 20 (delta 1), pack-reused 0 (from 0)
Receiving objects: 100% (29/29), 4.69 MiB | 5.81 MiB/s, done.
Resolving deltas: 100% (4/4), done.
gursidhsandhu@Gursidhs-MacBook-Pro Desktop % cd Comp-7005-Assign-1
gursidhsandhu@Gursidhs-MacBook-Pro Comp-7005-Assign-1 % ls
report  source
gursidhsandhu@Gursidhs-MacBook-Pro Comp-7005-Assign-1 % cd source
gursidhsandhu@Gursidhs-MacBook-Pro source % cd src
gursidhsandhu@Gursidhs-MacBook-Pro src % ls
client.cpp  server.cpp
gursidhsandhu@Gursidhs-MacBook-Pro src % g++ server.cpp -o server
server.cpp:146:67: warning: sizeof on pointer operation will return size of 'char *' instead of 'char[104]' [-Wsizeof-array-decay]
    strncpy(addr.sun_path,socketPath.c_str(),sizeof(addr.sun_path -1));
                                                    ^
server.cpp:228:27: warning: range-based for loop is a C++11 extension [-Wc++11-extensions]
    for(const string& line:fileContents){
                          ^
2 warnings generated.
gursidhsandhu@Gursidhs-MacBook-Pro src % g++ client.cpp -o client
client.cpp:85:67: warning: sizeof on pointer operation will return size of 'char *' instead of 'char[104]' [-Wsizeof-array-decay]
    strncpy(addr.sun_path,socketPath.c_str(),sizeof(addr.sun_path -1));
                                                    ^
client.cpp:149:27: warning: range-based for loop is a C++11 extension [-Wc++11-extensions]
    for(const string& line:fileContents){
                          ^
2 warnings generated.
gursidhsandhu@Gursidhs-MacBook-Pro src % ls
client  client.cpp  server
gursidhsandhu@Gursidhs-MacBook-Pro src %

```

4 files at the end

```

gursidhsandhu@Gursidhs-MacBook-Pro src % ls
client  client.cpp  server  server.cpp
gursidhsandhu@Gursidhs-MacBook-Pro src % ./server /tmp/dns
Server has started
Socket created successfully
Socket successfully binded at /tmp/dns
Listening on socket for connections
New client connected successfully
Requested filename from client is: messi.txt
File contents obtained successfully
File contents sent back successfully to client

```

```

gursidhsandhu@Gursidhs-MacBook-Pro src % ls
client  client.cpp  server  server.cpp
gursidhsandhu@Gursidhs-MacBook-Pro src % ./client /tmp/dns messi.txt
Client has started
Socket created successfully
Successfully connected at /tmp/dns
Successfully sent request containing: messi.txt to the server
File contents obtained successfully
The contents of messi.txt obtained from the server are:

This is a
Test
Document
To see if my program works
!!!

Socket closed successfully
gursidhsandhu@Gursidhs-MacBook-Pro src %

```