

COMP 7005

Assignment 1

Testing

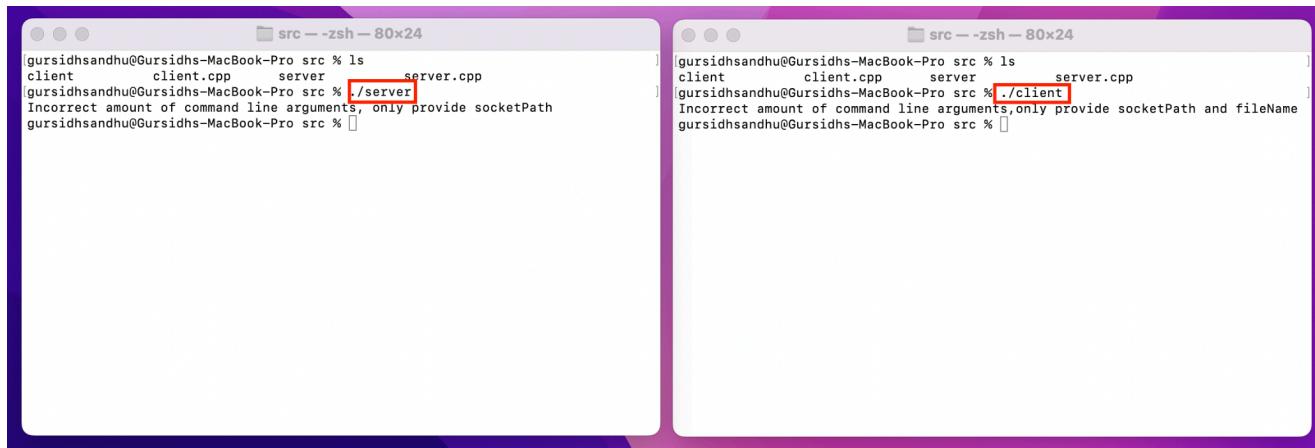
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Test	Expected	Actual	Screenshot
No arguments for server and client	fail	fail	Test 1
Only one argument for client	fail	fail	Test 2
More than one argument for server	fail	fail	Test 3
Invalid socket path for client, different than where server binded	fail	fail	Test 4
Valid socket path, but invalid file for client	fail	fail	Test 5
Server attempting to bind to the same socket path back to back	pass	pass	Test 6
Valid socket path for server, but already being used by machine processes	fail	fail	Test 7
Multiple clients connect to same server with same command line arguments	pass	pass	Test 8
Server terminates after client connection	pass	pass	Test 9
Server terminates before client connection	fail	fail	Test 10
Client sends filename that contains invalid characters	fail	fail	Test 11
Client can print out spaces in file content given back	pass	pass	Test 12
Client can disconnect from server, then reconnect right away	pass	pass	Test 13
Server can disconnect from the socket, then rebind to the same path	pass	pass	Test 14

Tests

Test 1



The image shows two side-by-side terminal windows on a Mac OS X desktop. Both windows have a title bar 'src — zsh — 80x24' and a status bar at the bottom.

Terminal Window 1 (Left):

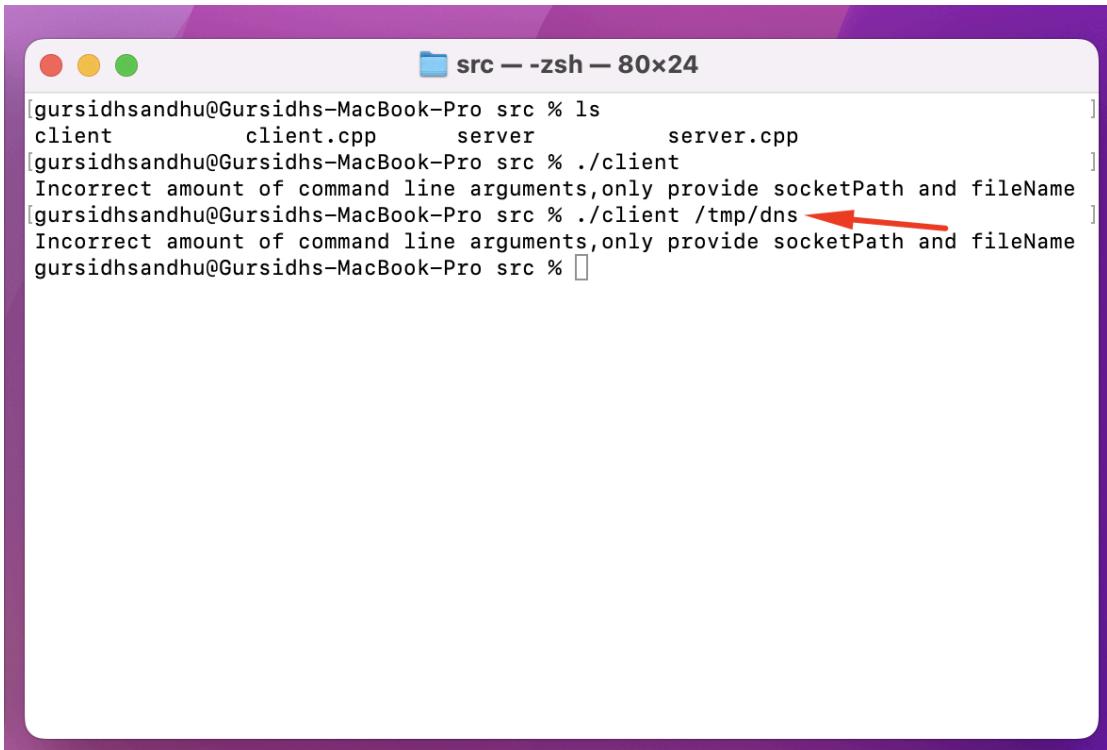
```
gursidhsandhu@Gursidhs-MacBook-Pro src % ls
client    client.cpp    server    server.cpp
gursidhsandhu@Gursidhs-MacBook-Pro src % ./server
Incorrect amount of command line arguments, only provide socketPath
gursidhsandhu@Gursidhs-MacBook-Pro src %
```

Terminal Window 2 (Right):

```
gursidhsandhu@Gursidhs-MacBook-Pro src % ls
client    client.cpp    server    server.cpp
gursidhsandhu@Gursidhs-MacBook-Pro src % ./client
Incorrect amount of command line arguments,only provide socketPath and fileName
gursidhsandhu@Gursidhs-MacBook-Pro src %
```

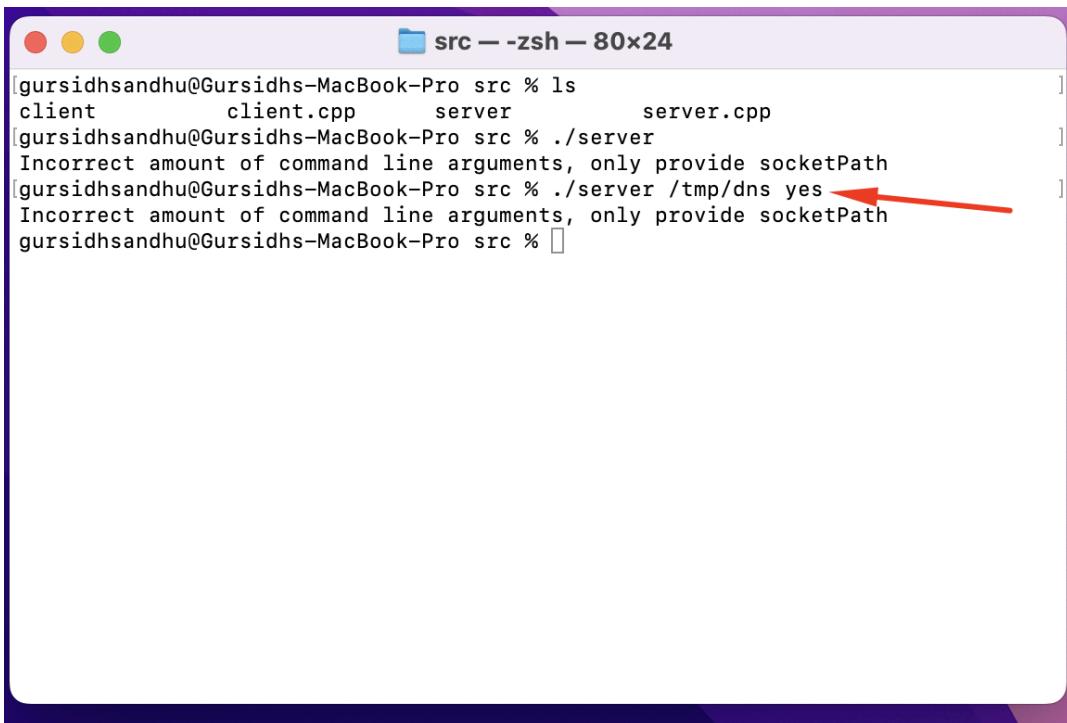
In both terminal windows, the command-line arguments are highlighted with a red box. In the left window, the argument is '.server'. In the right window, the argument is '.client'. The error message 'Incorrect amount of command line arguments, only provide socketPath' or 'Incorrect amount of command line arguments,only provide socketPath and fileName' is displayed below the command line.

Test 2



```
[gursidhsandhu@Gursidhs-MacBook-Pro src % ls
client      client.cpp    server      server.cpp
[gursidhsandhu@Gursidhs-MacBook-Pro src % ./client
Incorrect amount of command line arguments,only provide socketPath and fileName
[gursidhsandhu@Gursidhs-MacBook-Pro src % ./client /tmp/dns ↗
Incorrect amount of command line arguments,only provide socketPath and fileName
gursidhsandhu@Gursidhs-MacBook-Pro src % ]
```

Test 3



```
[gursidhsandhu@Gursidhs-MacBook-Pro src % ls
client      client.cpp    server      server.cpp
[gursidhsandhu@Gursidhs-MacBook-Pro src % ./server
Incorrect amount of command line arguments, only provide socketPath
[gursidhsandhu@Gursidhs-MacBook-Pro src % ./server /tmp/dns yes ↗
Incorrect amount of command line arguments, only provide socketPath
gursidhsandhu@Gursidhs-MacBook-Pro src % ]
```

Test 4

The screenshot shows two terminal windows side-by-side. The left window is titled "src — server /tmp/dns — 80x24" and contains the following text:

```
[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
```

The right window is titled "src — -zsh — 80x24" and contains the following text:

```
[gursidhsandhu@Gursidhs-MacBook-Pro src % ./client /tmp/fake_messi.txt ←
Client has started
Socket created successfully
Error in connecting to server socket: No such file or directory
gursidhsandhu@Gursidhs-MacBook-Pro src %
```

Red arrows point to the error messages in both windows: "Socket successfully binded at /tmp/dns" in the server log and "No such file or directory" in the client log.

Test 5

The screenshot shows two terminal windows side-by-side. The left window is titled "src — server /tmp/dns — 80x24" and contains the following text:

```
[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: fake.tx ←
Error finding or opening fake.txNo such file or directory
Error obtaining file contents: No such file or directory
File contents sent back successfully to client
```

The right window is titled "src — -zsh — 80x24" and contains the following text:

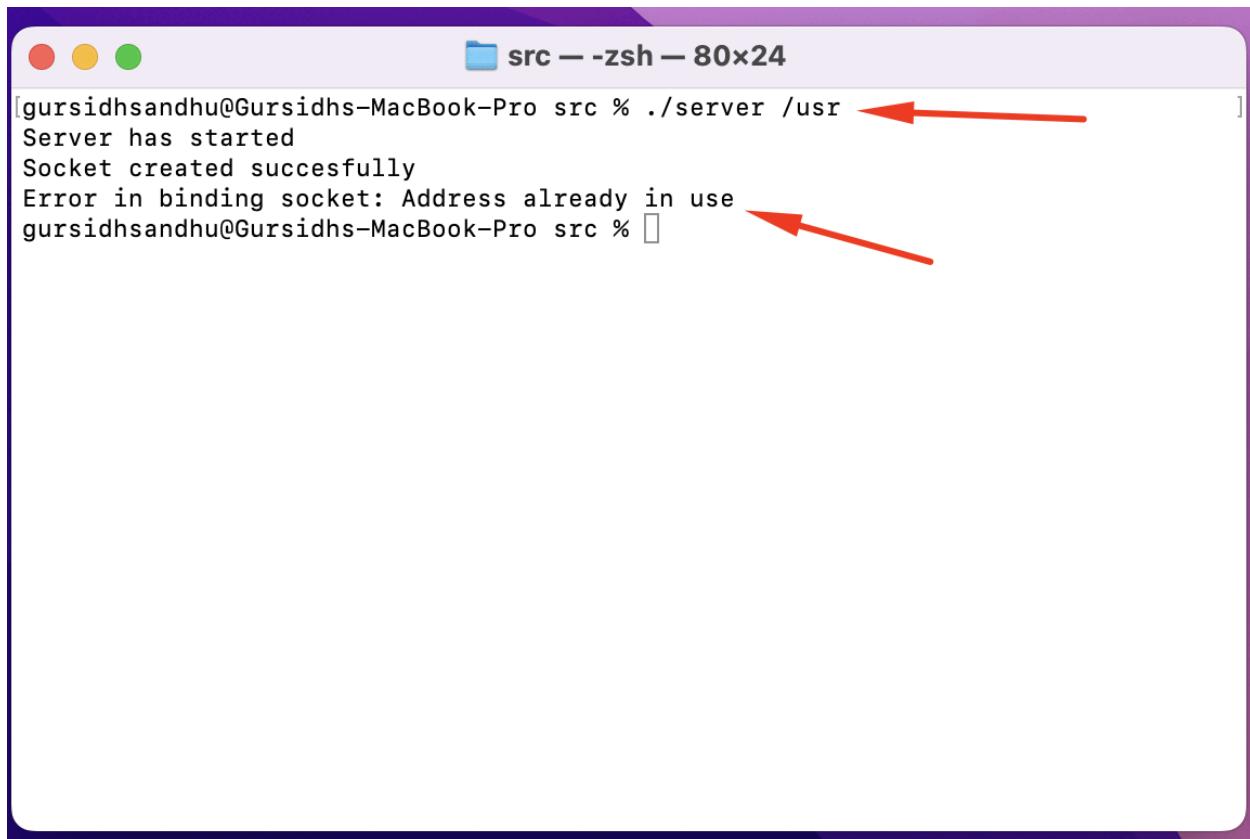
```
[gursidhsandhu@Gursidhs-MacBook-Pro src % ./client /tmp/dns fake.tx ←
Client has started
Socket created successfully
Successfully connected at /tmp/dns
Successfully sent request containing: fake.tx to the server
Error obtaining file contents from response. Ensure correct file name and extension
gursidhsandhu@Gursidhs-MacBook-Pro src %
```

Red arrows point to the error messages in both windows: "Error finding or opening fake.txNo such file or directory" in the server log and "Error obtaining file contents from response. Ensure correct file name and extension" in the client log.

Test 6

```
[gursidhsandhu@Gursidhs-MacBook-Pro src % ./server /tmp/dns
Server has started
Socket created succesfully
Socket succesfully binded at /tmp/dns ←
Listening on socket for connections
^CError connecting to a new client: Interrupted system call
Socket closed succesfully ←
[gursidhsandhu@Gursidhs-MacBook-Pro src % ./server /tmp/dns
Server has started
Socket created succesfully
Socket succesfully binded at /tmp/dns ←
Listening on socket for connections
]
```

Test 7



The screenshot shows a terminal window titled "src -- zsh -- 80x24". The window contains the following text:

```
[gursidhsandhu@Gursidhs-MacBook-Pro src % ./server /usr
Server has started
Socket created successfully
Error in binding socket: Address already in use
gursidhsandhu@Gursidhs-MacBook-Pro src % ]
```

Two red arrows point to the error message "Error in binding socket: Address already in use".

Test 8

The screenshot shows two terminal windows on a Mac OS X desktop. The left window is titled 'src — server /tmp/dns — 80x24' and contains the following text:

```
gursidhsandhu@Gursidhs-MacBook-Pro src % ./server /tmp/dns
Server has started
Socket created successfully
Socket sucessfully 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
New client connected successfully!
Requested filename from client is: ronaldo.txt
File contents obtained successfully
File contents sent back successfully to client
```

Red arrows point to the lines 'New client connected successfully!' and 'Requested filename from client is: ronaldo.txt' with the labels '1st' and '2nd' respectively.

The right window is titled 'src — zsh — 80x24' and contains the following text:

```
gursidhsandhu@Gursidhs-MacBook-Pro src % ./client /tmp/dns messi.txt
Client has started
Socket created succesfully
Sucsesfully connected at /tmp/dns
Sucsesfully sent request containing: messi.txt to the server
File contents obtained succesfully
The contents of messi.txt obtained from the server are:
This is a
Test
Document
To see if my program works
!!!
Socket closed succesfully
gursidhsandhu@Gursidhs-MacBook-Pro src %
```

A red arrow points to the line 'The contents of messi.txt obtained from the server are:' with the label '1st client'.

The bottom window is titled 'src — zsh — 80x24' and contains the following text:

```
gursidhsandhu@Gursidhs-MacBook-Pro src % ./client /tmp/dns ronaldo.txt
Client has started
Socket created successfully
Successfully connected at /tmp/dns
Successfully sent request containing: ronaldo.txt to the server
File contents obtained successfully
The contents of ronaldo.txt obtained from the server are:
Ronaldo is not the goat no one is better than Messi
Socket closed succesfully
gursidhsandhu@Gursidhs-MacBook-Pro src %
```

A red arrow points to the line 'The contents of ronaldo.txt obtained from the server are:' with the label '2nd client'.

Test 9

The screenshot shows two terminal windows on a Mac OS X desktop. The left window is titled 'src — server /tmp/dns — 80x24' and contains the following text:

```
gursidhsandhu@Gursidhs-MacBook-Pro src % ./server /tmp/dns
Server has started
Socket created successfully
Socket sucessfully 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
```

A red arrow points to the line 'Server has started'.

The right window is titled 'src — zsh — 80x24' and contains the following text:

```
gursidhsandhu@Gursidhs-MacBook-Pro src % ./client /tmp/dns messi.txt
Client has started
Socket created successfully
Succesfully connected at /tmp/dns
Succesfully sent request containing: messi.txt to the server
File contents obtained succesfully
The contents of messi.txt obtained from the server are:
This is a
Test
Document
To see if my program works
!!!
Socket closed succesfully
gursidhsandhu@Gursidhs-MacBook-Pro src %
```

A red arrow points to the line 'Socket closed succesfully'.

Test 10

The screenshot shows two terminal windows. The left window (server) outputs:

```
[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
^CError connecting to a new client: Interrupted system call
Socket closed successfully
gursidhsandhu@Gursidhs-MacBook-Pro src % ]
```

The right window (client) outputs:

```
[gursidhsandhu@Gursidhs-MacBook-Pro src % ./client /tmp/dns messi.txt
Client has started
Socket created successfully
Error in connecting to server socket: No such file or directory
gursidhsandhu@Gursidhs-MacBook-Pro src % ]
```

A red arrow points from the error message in the client window to the text "doesn't exist anymore" in red at the bottom right.

Test 11

The screenshot shows two terminal windows. The left window (server) outputs:

```
[gursidhsandhu@Gursidhs-MacBook-Pro src % ./server /tmp/gursidh
Server has started
Socket created successfully
Socket successfully binded at /tmp/gursidh
Listening on socket for connections
New client connected successfully!
Requested filename from client is: mes/si.txt
Error finding or opening mes/si.txtNo such file or directory
Error obtaining file contents: No such file or directory
File contents sent back successfully to client
]
```

The right window (client) outputs:

```
[gursidhsandhu@Gursidhs-MacBook-Pro src % ./client /tmp/gursidh mes/si.txt
Client has started
Socket created successfully
Successfully connected at /tmp/gursidh
Successfully sent request containing: mes/si.txt to the server
Error obtaining file contents from response. Ensure correct file name and extension
gursidhsandhu@Gursidhs-MacBook-Pro src % ]
```

A red arrow points from the error message in the client window to the text "Ensure correct file name and extension" in red at the bottom right.

Test 12

The screenshot shows two terminal windows. The left window (server) outputs:

```
[gursidhsandhu@Gursidhs-MacBook-Pro src % ls
client      client.cpp    server      server.cpp
gursidhsandhu@Gursidhs-MacBook-Pro src % ./server /tmp/gursidh
Server has started
Socket created successfully
Socket successfully binded at /tmp/gursidh
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
]
```

The right window (client) outputs:

```
[gursidhsandhu@Gursidhs-MacBook-Pro src % ls
client      client.cpp    server      server.cpp
gursidhsandhu@Gursidhs-MacBook-Pro src % ./client /tmp/gursidh messi.txt
Client has started
Socket created successfully
Successfully connected at /tmp/gursidh
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 % ]
```

A red arrow points from the text "spaces in between lines" in red at the bottom right to the multi-line output of the server's file contents.

Test 13

The screenshot shows two terminal windows. The left window is titled 'src — server /tmp/testing — 101x26' and the right window is titled 'src — zsh — 100x26'. Both windows show the output of a socket-based communication between a server and a client.

Server Side (Left Window):

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

Client Side (Right Window):

```
gursidhsandhu@Gursidhs-MacBook-Pro src % ./client /tmp/testing ronaldo.txt
Client has started
Socket created successfully
Successfully connected at /tmp/testing →
Successfully sent request containing: ronaldo.txt to the server
File contents obtained successfully
The contents of ronaldo.txt obtained from the server are:
Ronaldo is not the goat no one is better than Messi

Socket closed successfully ←
gursidhsandhu@Gursidhs-MacBook-Pro src % ./client /tmp/testing ronaldo.txt
Client has started
Socket created successfully
Successfully connected at /tmp/testing →
Successfully sent request containing: ronaldo.txt to the server
File contents obtained successfully
The contents of ronaldo.txt obtained from the server are:
Ronaldo is not the goat no one is better than Messi

Socket closed successfully ←
gursidhsandhu@Gursidhs-MacBook-Pro src % []
```

Red arrows point to specific lines of text in both windows, highlighting the connection establishment, file transfer, and closure process.

Test 14

The screenshot shows a single terminal window titled 'src — server /tmp/mac — 90x24'. It displays the server's log as it handles two client connections.

Server Log:

```
[gursidhsandhu@Gursidhs-MacBook-Pro src % ./server /tmp/mac
Server has started
Socket created successfully
Socket successfully binded at /tmp/mac → 1st
Listening on socket for connections
^CError connecting to a new client: Interrupted system call
Socket closed successfully ← 1st
[gursidhsandhu@Gursidhs-MacBook-Pro src % ./server /tmp/mac
Server has started
Socket created successfully
Socket successfully binded at /tmp/mac → 2nd
Listening on socket for connections
[]
```

Red arrows point to the lines where the server binds to the socket and closes the connection after the first client disconnects. The number '1st' is placed next to the first binding arrow, and '2nd' is placed next to the second binding arrow, indicating the sequence of client connections.