

Client Server Application

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An exercise in TCP communications
via Unix programming

Justification

- To develop an in-depth understanding of the TCP/IP stack
- Relevant to Site Reliability/DevOps Engineering

Server

- Establishes ownership over an available port on some UNIX based machine
- Listens for an incoming TCP request to make a 3 way handshake
- Decodes incoming files and stores them at a given existing directory

Client

- Attempts to make a simulated TCP connection with a server
- Utilizes a TCPHeader struct
- Sends encoded files from the client side to the server side
- Returns whether or not the file was sent over successfully

Technologies

- Golang is a powerful systems programming language gaining popularity in modern tech stacks
- Unix programming libraries are utilized for lower level programming



```
Thomas0brien@MacBook-Pro-3:[~/Documents/Stuff/School/SS/Semester_2/CMSI_402/project/client-server-application]: go run unix-client.go hello.txt
Thomas0brien@MacBook-Pro-3:[~/Documents/Stuff/School/SS/Semester_2/CMSI_402/project/client-server-application]: cat testingNewFile.txt
hello world!
I'm just testing this out
to see if I can read a file!
Thomas0brien@MacBook-Pro-3:[~/Documents/Stuff/School/SS/Semester_2/CMSI_402/project/client-server-application]: 
```



```
Thomas0brien@MacBook-Pro-3:[/tmp]:
```



```
| Thomas0brien@MacBook-Pro-3:[~/Documents/Stuff/School/SS/Semester_2/CMSI_402/pro
| ject/client-server-application]: go run unix-server.go
| Let's listen
| Found connection
| 
```



```
[402] 0:bash*
```

"MacBook-Pro-3.local" 14:56 23-Apr-18

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