The server must be initialized first, as the client will exit without anything to connect to. The server enters a simple loop waiting for a connection from a client. The client creates a socket and attempts to connect to the server. The server will loop doing simple IO, it will echo the data in the buffer provided from the client socket, unless it contains the exit command.

```
erik@erik-desktop:~/Programming/CS370/Labs/Socket Programming$ gcc -o server tcpServer.c
erik@erik-desktop:~/Programming/CS370/Labs/Socket Programming$ gcc -o client tcpClient.c
erik@erik-desktop:~/Programming/CS370/Labs/Socket Programming$ ./client
[+]Client Socket is created.
[+]Type ':exit' to terminate client.
[-]Error in connection (2).
erik@erik-desktop:~/Programming/CS370/Labs/Socket Programming$ ./client
[+]Client Socket is created.
[+]Type ':exit' to terminate client.
[+]Connected to Server.

------------------------------------------------------------
Client Message (':exit' to terminate):  hello world

From Server:    033[1;32m
Cow says
<hello world>
        \   ^__^
         \  (oo)\_______
            (__)\       )\/\
                ||----w |
                ||     ||

------------------------------------------------------------
Client Message (':exit' to terminate):  erik ramsey

From Server:    033[1;32m
Cow says
<erik ramsey>
        \   ^__^
         \  (oo)\_______
            (__)\       )\/\
                ||----w |
                ||     ||

------------------------------------------------------------
Client Message (':exit' to terminate):  exit

From Server:    033[1;32m
Cow says
<exit>
        \   ^__^
         \  (oo)\_______
            (__)\       )\/\
                ||----w |
                ||     ||

------------------------------------------------------------
Client Message (':exit' to terminate):  :exit
[-]Disconnected from server.
erik@erik-desktop:~/Programming/CS370/Labs/Socket Programming$
```

The client connects from: 127.0.0.1:51386 which would make sense as it is hosted locally, and that's the localhost ip. The port used is 51386, which with a quick google search is "typically used as a dynamic/private port,"

An advantage of socket programming is that it is supremely flexible, and can be used for most communications between programs. A disadvantage is that the data sent is raw and non context sensitive. The programs sending and receiving will need mechanisms to interpret the data.