CS393 / CS682 Lab 0
Linux Socket Programming

Requirements:
- Read about Linux
- Read about Linux socket programming from:

1) Consider the following server code:

```
#include <stdio.h>
#include <string.h>
#include <sys/types.h>
#include <sys/socket.h>
#include <netinet/in.h>

static void die(const char *str) {
   printf("%s \n", str);
   exit(1);
}

int main() {
   int state;
   char *nodeAddr;
   char *nodePort;
   struct sockaddr_in nodeSkt;
   struct sockaddr_in clntSkt;
   int len_inet;
   int skt;
   int Clntsocket;
   int bytes;
   char data_buffer[128];

   nodeAddr = "192.168.1.104";
   nodePort = "80"; //Default port
   skt = socket(PF_INET,SOCK_STREAM,0);
   if ( skt == -1 )
      die("Some thing wrong with Socket()");
   memset(&nodeSkt,0,sizeof nodeSkt);
   nodeSkt.sin_family = AF_INET;
   nodeSkt.sin_port = htons(atoi(nodePort));
   nodeSkt.sin_addr.s_addr = inet_addr(nodeAddr);
   if ( nodeSkt.sin_addr.s_addr == INADDR_NONE )
             die("You typed your node address incorrectly");
   len_inet = sizeof nodeSkt;
   state = bind(skt,(struct sockaddr *)&nodeSkt, len_inet);
   if ( state == -1 )
      die("I could not bind()!");
```

```
        state = listen(skt,10);
    if ( state == -1 )
        die("I'm deaf! :( Look what you did to me");
    for (;;) {
        len_inet = sizeof clntSkt;
        Clntsocket = accept(skt, (struct sockaddr *)&clntSkt, &len_inet);
                printf("Accepted Client\n");
        if ( Clntsocket == -1 )
            die("I'm too picky0");
                    strcpy(data_buffer, "Hi there! you did it");
        bytes = strlen(data_buffer);
        state = write(Clntsocket,data_buffer,bytes);
        if ( state == -1 )
            die("I'm fine, but the other guy/gal messed up. Or may be its me");
        close(Clntsocket);
    }
        return 0; //Will this code ever reach this point?
}
```

You can compile the above code and run it in the node assigned to you as administrator. Form any workstation in the test bed you should be able to telnet to port 80 of your node to see if this code work.

Do the following exercise:

1) Explain the above code step by step.
2) Modify the code to display "Hi <client IP> there. You are client number <i>" when a client telnet to port 80 of your node. <client IP> is the IP address of the client, and <i> is running counter that is incremented each time a new client is accepted.