basic client and server program using tcp (client sending string and server receiving data from client then server converting data to opposite case after that send back to client continously)

header.h

#include<stdio.h>

#include<string.h>

#include<stdlib.h>

#include<sys/types.h>

#include<sys/socket.h>

#include<unistd.h>

#include<netinet/in.h>

#include<netinet/ip.h>

#include<arpa/inet.h>

// server.c

#include"header.h"

void client\_info(struct sockaddr\_in client\_info)

{

printf("client port address: %d\n",client\_info.sin\_port);

printf("client ip address: %s\n",inet\_ntoa(client\_info.sin\_addr));

}

int main(int argc,char \*\*argv)

{

if(argc!=3)

{

printf("usage: ./server server\_port server\_ip\_address\n");

return 0;

}

int sfd,len,nsfd,i;

struct sockaddr\_in server\_id,client\_id;

/\*\*\*\*\*\*\*\*\*\* socket () \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

sfd=socket(AF\_INET,SOCK\_STREAM,0);

if(sfd<0)

{

perror("Socket");

return 0;

}

perror("Socket");

/\*\*\*\*\*\*\*\*\*\*\* bind() \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

server\_id.sin\_family=AF\_INET;

server\_id.sin\_port=htons(atoi(argv[1]));

server\_id.sin\_addr.s\_addr=inet\_addr(argv[2]);

len=sizeof(server\_id);

if(bind(sfd,(struct sockaddr\*) &server\_id,len)<0)

{

perror("Bind");

return 0;

}

perror("Bind");

/\*\*\*\*\*\*\*\*\*\*\*\*\* listen \*\*\*\*\*\*\*\*\*\*\*\*\*\*/

if(listen(sfd,5)<0)

{

perror("Listen");

return 0;

}

perror("Listen");

/\*\*\*\*\*\*\*\*\*\*\*\* accept \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

printf("before accept client request...(waiting for client)\n");

nsfd=accept(sfd,(struct sockaddr\*)&client\_id,&len);

if(nsfd<0)

{

perror("Accept");

return 0;

}

printf("client request Accepted...\n");

client\_info(client\_id);

char s[20];

while(1)

{

read(nsfd,s,sizeof(s)); // reading data from client

printf("client data: %s\n",s);

for(i=0;s[i];i++)

{

if(s[i]>='a' &&s[i]<='z')

s[i]=s[i]-32;

else if(s[i]>='A' && s[i]<='Z')

s[i]=s[i]+32;

}

write(nsfd,s,strlen(s)+1);

}

close(sfd);

close(nsfd);

}

//client.c

#include"header.h"

int main(int argc,char \*\*argv)

{

if(argc!=3)

{

printf("usage: ./client server\_port server\_ip\_address\n");

return 0;

}

int sfd,len;

struct sockaddr\_in server\_id;

sfd=socket(AF\_INET,SOCK\_STREAM,0);

if(sfd<0)

{

perror("Socket");

return 0;

}

perror("Socket");

server\_id.sin\_family=AF\_INET;

server\_id.sin\_port=htons(atoi(argv[1]));

server\_id.sin\_addr.s\_addr=inet\_addr(argv[2]);

len=sizeof(server\_id);

if(connect(sfd,(struct sockaddr\*)&server\_id,len)<0)

{

perror("connect");

return 0;

}

perror("connect");

char s[20];

while(1)

{

printf("enter string from user\n");

scanf("%s",s);

write(sfd,s,strlen(s)+1); //writing data to server

read(sfd,s,sizeof(s)); //reading data from server

printf("Updated data: %s\n",s);

}

close(sfd);

}