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CSE IT K1 Section

Full Duplex Chat using TCP

Server Code:

```
#include<sys/types.h>
#include<sys/socket.h>
#include<stdio.h>
#include<unistd.h>
#include<netdb.h>
#include<arpa/inet.h>
#include<netinet/in.h>
#include<string.h>

int main(int argc,char *argv[])
{
    int clientSocketDescriptor,socketDescriptor;

    struct sockaddr_in serverAddress,clientAddress;
    socklen_t clientLength;

    char recvBuffer[1000],sendBuffer[1000];
    pid_t cpid;
    bzero(&serverAddress,sizeof(serverAddress));
    serverAddress.sin_family=AF_INET;
    serverAddress.sin_addr.s_addr=htonl(INADDR_ANY);
    serverAddress.sin_port=htons(5500);
    socketDescriptor=socket(AF_INET,SOCK_STREAM,0);
    bind(socketDescriptor,(struct sockaddr*)&serverAddress,sizeof(serverAddress));
    listen(socketDescriptor,5);
    printf("%s\n","Server is running ...");
    clientSocketDescriptor=accept(socketDescriptor,(struct
    sockaddr*)&clientAddress,&clientLength);
    /*Fork system call is used to create a new process*/
    cpid=fork();

    if(cpid==0)
    {
        while(1)
        {
            bzero(&recvBuffer,sizeof(recvBuffer));
            /*Receiving the request from client*/
            recv(clientSocketDescriptor,recvBuffer,sizeof(recvBuffer),0);
            printf("\nCLIENT : %s\n",recvBuffer);
        }
    }
    else
    {
        while(1)
        {
```

```

bzero(&sendBuffer,sizeof(sendBuffer));
printf("\nType a message here ... ");
fgets(sendBuffer,10000,stdin);
send(clientSocketDescriptor,sendBuffer,strlen(sendBuffer)+1,0);
printf("\nMessage sent !\n");
}
}
return 0;
}

```

Client Code:

```

#include<stdio.h>
#include<stdlib.h>
#include<string.h>
#include<sys/types.h>
#include<sys/socket.h>
#include<netinet/in.h>
#include<unistd.h>
#include<netdb.h>
#include<arpa/inet.h>

int main() {
int socketDescriptor;

struct sockaddr_in serverAddress;
char sendBuffer[1000],recvBuffer[1000];

pid_t cpid;

bzero(&serverAddress,sizeof(serverAddress));

serverAddress.sin_family=AF_INET;
serverAddress.sin_addr.s_addr=inet_addr("127.0.0.1");
serverAddress.sin_port=htons(5500);

socketDescriptor=socket(AF_INET,SOCK_STREAM,0);

connect(socketDescriptor,(struct sockaddr*)&serverAddress,sizeof(serverAddress));

cpid=fork();
if(cpid==0) {
    while(1) {
        bzero(&sendBuffer,sizeof(sendBuffer));
        printf("\nType a message here ... ");
        fgets(sendBuffer,10000,stdin);
        send(socketDescriptor,sendBuffer,strlen(sendBuffer)+1,0);
        printf("\nMessage sent !\n");
    }
}
else {
    while(1) {
        bzero(&recvBuffer,sizeof(recvBuffer));

```

```

        recv(socketDescriptor,recvBuffer,sizeof(recvBuffer),0);
        printf("\nSERVER : %s\n",recvBuffer);
    }
}
return 0;
}

```

Screenshots:

