**Write a program using TCP socket for wired network for following**

**a. Say Hello to Each other**

**b. File transfer**

**c. Calculator**

**CLIENT:**

#include<iostream>

#include<unistd.h>

#include<netinet/in.h>

#include<string.h>

#include<string>

#include<fstream>

#include <arpa/inet.h>

#include<sys/socket.h>

#define PORT 6511

#define MAXLINES 1024

using namespace std;

int main()

{

int sockfd;

sockaddr\_in server;

char buffer[MAXLINES];

string fileName;

if( (sockfd = socket(AF\_INET,SOCK\_STREAM,0) ) < 0 )

{

cout << "err";

}

server.sin\_family = AF\_INET;

server.sin\_port = htons(PORT);

server.sin\_addr.s\_addr = inet\_addr("127.0.0.1");

if(connect(sockfd,(const sockaddr \*) &server,sizeof(server)) < 0 )

cout << "error";

cout << "Enter fileName" << endl;

cin >> fileName;

send(sockfd,fileName.c\_str(),fileName.length(),0);

int n = read(sockfd,buffer,MAXLINES);

ofstream ofs(fileName,ios::out);

ofs.write(buffer,n);

ofs.close();

return 0;

}

**SERVER:**

#include<iostream>

#include<unistd.h>

#include<netinet/in.h>

#include<string.h>

#include<string>

#include<fstream>

#include <arpa/inet.h>

#include<sys/socket.h>

#define PORT 6511

#define MAXLINES 1024

using namespace std;

int main()

{

int sockfd,connfd;

sockaddr\_in server,client;

char buffer[MAXLINES];

char fileBuffer[MAXLINES];

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

server.sin\_family = AF\_INET;

server.sin\_port = htons(PORT);

server.sin\_addr.s\_addr = INADDR\_ANY;

bind(sockfd,(const sockaddr\*) &server,sizeof(server));

listen(sockfd,5);

socklen\_t len;

connfd = accept(sockfd, (sockaddr \*)&client, &len);

if (connfd < 0)

{

cout << "failse";

}

else

{

cout << "success";

}

int n = read(connfd,buffer,sizeof(buffer));

buffer[n] = '\0';

cout << "Client said: " << buffer << endl;

ifstream ifs(buffer,ios::in|ios::ate);

int size = ifs.tellg();

ifs.seekg(ios::beg);

ifs.read(fileBuffer,size);

send(connfd,fileBuffer,size,0);

return 0;

}