Assignment - 06

AIM: Write a program in TCP socket for wired netw
for following.

a) Say Hello to each other
b) File Transfer
c) Calculator (Arithmetic)
d) Calculator (Trigonometry)

Requirements : Fedora OS, GCC Compiler
Wireshark Packet Analyser Tool

Theory :

TCP Socket Programming for wired network :-
The two key classes from the java.net package used in creation of server & client package are Server Socket.

A server program creates a specific type of socket that is used to listen for client requests.

A simple server program in Java :-
Open the server socket.
Wait for the client request.
Create I/O streams for communicating to the client.

A simple client program in Java
1. Create a socket project
2. Create I/O streams for communicating with the server
3. Perform I/O or communication with the server.
4. Close the socket when done.

Running Socket Program.

Compile both server & client programs and then deploy server program code on a machine which is going to act as a server and client program, which is going to act as a client. If required, both client & server programs can run on the same machine.

The client program can run on any computer in the network (LAN, WAN, MAN) as long as there is no firewall between them that blocks communication.

File Transfer :-

A TCP client initiates the communication with a server which is waiting for the connection. TCP is connection oriented and UDP sockets is that there is no guarantee that message sent via a UDP socket will arrive at its destination, and messages can be delivered in a different order than they were sent.

A TCP listener is created and starts listening to the specified port. Again the buffer size set to 1024 bytes. A TCP listener can pre check to see if there are any connections pending before calling the Accept Tcp client method. It returns true if there are any pending connections.

CONCLUSION :-

Messaging, file transfer and calculator was successfully implemented & tested using TCP sockets.