ASSIGNMENT-1

PROBLEM STATEMENT : To develop any distributed application through implementing client-server communication programs based on Java sockets

SOFTWARE / HARDWARE REQUIREMENTS :
Java Programming Environment, rmiregistry, jdk 1.7, Eclipse IDE

THEORY :

- SOCKET :
In distributed computing, socket is defined as terminal of communication link through which two processes / programs running on the H/w can communicate with each other. The TCP layer can easily identify the application location & access information through the port number assigned to the respective sockets.

- SOCKET PROGRAMMING FOR TCP :
The following steps occur when establishing a TCP connection.

i. Server instantiates a server socket object, denoting which port number communication is to occur on.

ii. Server invokes the accept() method of server socket class. This method waits until a client connects to the server on the given port.

iii. After the server is waiting, a client instantiates a socket object, specifying the server

name & port no.

iv. On the server side, the accept() method returns a reference to new socket on the server that is connected to the client's socket

v. After the connection is established, a communication can occur using I/O stream. Each socket has both input stream & output stream. The client's o/p stream is connected to server's i/p stream & vice versa.

vi. TCP is a two-way communication protocol hence data can be sent on both sides.

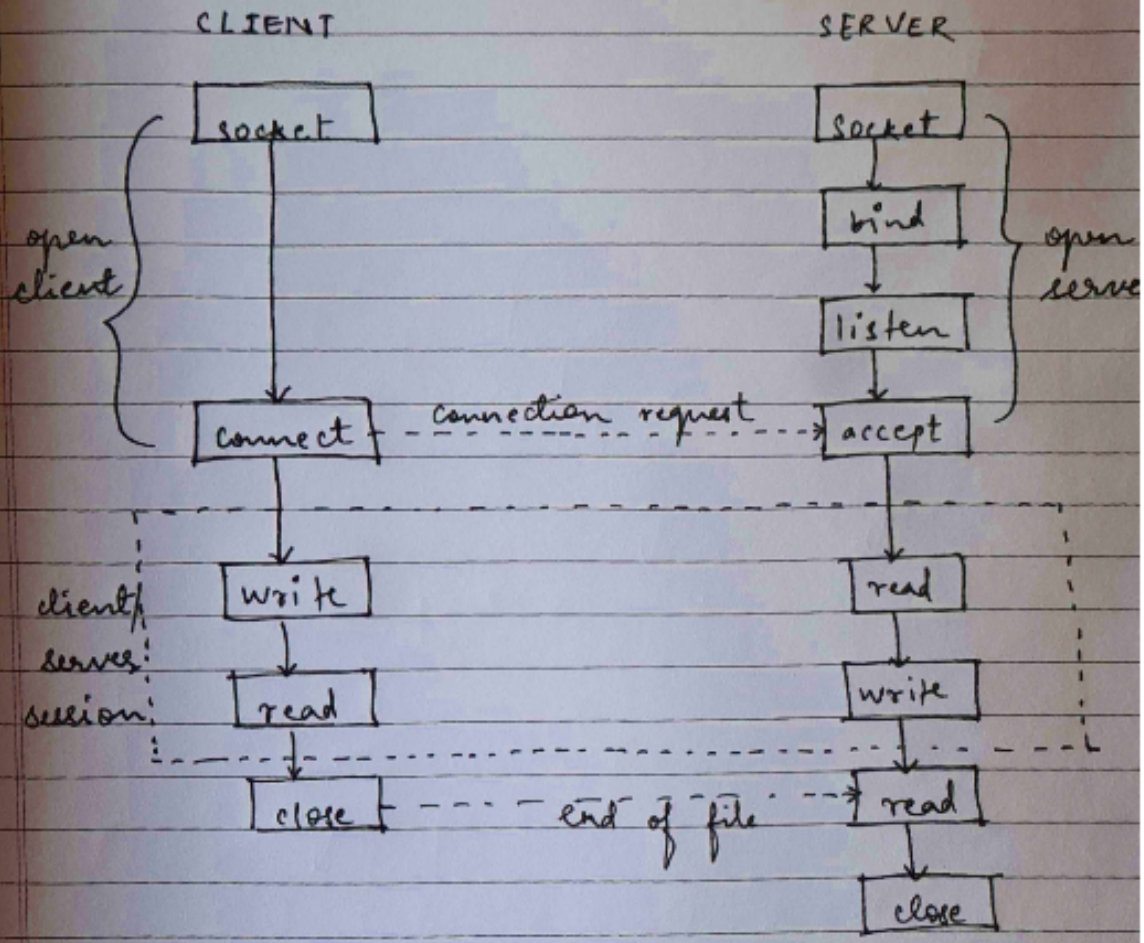
- RMI:
RMI provides communication b/w JAVA applications that are deployed on different servers & connected remotely using objects. called stub & skeleton. The communication architecture makes a distributed application seems like a group of objects communicating across a remote communication.

STUB:
This is a java object that acts as an entry point for the client object to route any outgoing requests.

SKELETON:
This object behaves like a gateway on the server side. It acts as a remote object with

which client objects interact through stub.

SOCKET API :



CONCLUSION :

In this assignment, we learnt about client server communication through different processes & sockets.