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| **Part A**  **Name:-**  **Roll No:-**  **Subject:-** Distributed Computing  **Program: B Tech/MBA Tech CE 3rd Year** |
| **Aim:**  To implement client-server using Socket programming:   1. Initiate the process of server to client connection. 2. Implement client-server application for sending messages (one way) 3. Implement client-server chat application. |
| **Prerequisite:** Operating Systems, Computer Network |
| **Outcome:** To be able to implement client-server model. |
| **Theory:**  Client/server architecture is a computing model in which the server hosts, delivers and manages most of the resources and services to be consumed by the client. This type of architecture has one or more client computers connected to a central server over a network or internet connection.  Most interprocess communication uses the client-server model. These terms refer to the two processes which will be communicating with each other. One of the two processes, the client, connects to the other process, the server, typically to make a request for information. A good analogy is a person who makes a phone call to another person.  Notice that the client needs to know the existence of and the address of the server, but the server does not need to know the address of (or even the existence of) the client prior to the connection being established. Notice also that once a connection is established, both sides can send and receive information.  The system calls for establishing a connection are somewhat different for the client and the server, but both involve the basic construct of a socket. A socket is one end of an interprocess communication channel. The two processes each establish their own socket.  The steps involved in establishing a socket on the client side are as follows:   1. Create a socket with the socket() system call 2. Connect the socket to the address of the server using the connect() system call 3. Send and receive data. There are a number of ways to do this, but the simplest is to use the read() and write() system calls.   The steps involved in establishing a socket on the server side are as follows:   1. Create a socket with the socket() system call 2. Bind the socket to an address using the bind() system call. For a server socket on the Internet, an address consists of a port number on the host machine. 3. Listen for connections with the listen() system call 4. Accept a connection with the accept() system call. This call typically blocks until a client connects with the server. 5. Send and receive data   **Program:**   1. Implement a client server model in which client and server communicate by sending chat messages. 2. Implement a chat-bot in which the server is a chat-bot providing services to clients by answering the questions automatically. The server is programmed to provide answers related to general knowledge. |

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| **Part B** |
| **Code:** |
| **Output:** |
| **Observation & Learning:**  Write your Observations & Learning after performing task |
| **Conclusion:** |