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ROLL NO : 127
BATCH : S23

NETWORK LAB ASSG NO. 5

AIM: SOCKET PROGRAMMING USING TCP/IP PROTOCOL

Theory: To connect to another machine we need a socket connection. A socket connection means the two machines have information about each other's network location (IP Address) and TCP port. The java.net.Socket class represents a Socket. environments.

Java Program for Client application

CODE:

```
import java.io.*;
import java.net.*;
public class Client {
 public static void main(String[] args) {
 try {
 Socket socket = new Socket("localhost", 5000);
 System.out.println("Connected to server.");
 BufferedReader reader = new BufferedReader(new
InputStreamReader(socket.getInputStream()));
 PrintWriter writer = new PrintWriter(socket.getOutputStream(), true);
 BufferedReader consoleReader = new BufferedReader(new
InputStreamReader(System.in));
```

```
 String inputLine, outputLine;
 while (true) {
 System.out.print("Client: ");
 outputLine = consoleReader.readLine();
 writer.println(outputLine);
 if (outputLine.equalsIgnoreCase("bye")) break;
 inputLine = reader.readLine();
 System.out.println("Server: " + inputLine);
 if (inputLine.equalsIgnoreCase("bye")) break;
}
 writer.close();
 reader.close();
 socket.close();
 } catch (IOException e) {
 e.printStackTrace();
 }
 }
}
```

Java Program for Server application

CODE:

```
import java.io.*;
import java.net.*;
public class Server {
 public static void main(String[] args) {
 try {
 ServerSocket = new ServerSocket(5000);
```

```
 System.out.println("Server started, waiting for client...");
 Socket clientSocket = serverSocket.accept();
 System.out.println("Client connected: " + clientSocket);
 BufferedReader reader = new BufferedReader(new
InputStreamReader(clientSocket.getInputStream()));
 PrintWriter writer = new PrintWriter(clientSocket.getOutputStream(),
true);
 BufferedReader consoleReader = new BufferedReader(new
InputStreamReader(System.in));
 String inputLine, outputLine;
 while ((inputLine = reader.readLine()) != null) {
 System.out.println("Client: " + inputLine);
 if (inputLine.equalsIgnoreCase("bye")) break;
System.out.print("Server: ");
 outputLine = consoleReader.readLine();
 writer.println(outputLine);
 if (outputLine.equalsIgnoreCase("bye")) break;
 }
 writer.close();
 reader.close();
 clientSocket.close();
 serverSocket.close();
 } catch (IOException e) {
 e.printStackTrace();
 }
 }
}
```

OUTPUT:

Client:

```
lab1003@lab1003-HP-280-G2-MT:~$ cd Desktop
lab1003@lab1003-HP-280-G2-MT:~/Desktop$ cd s23_127
lab1003@lab1003-HP-280-G2-MT:~/Desktop/s23_127$ javac Client.java
lab1003@lab1003-HP-280-G2-MT:~/Desktop/s23_127$ java Client
Connected to server.
Client: hello,s23_127
Server: hello client
Client:
```

Server:

```
lab1003@lab1003-HP-280-G2-MT:~$ cd Desktop
lab1003@lab1003-HP-280-G2-MT:~/Desktop$ cd s23_127
lab1003@lab1003-HP-280-G2-MT:~/Desktop/s23_127$ javac Server.java
lab1003@lab1003-HP-280-G2-MT:~/Desktop/s23_127$ java Server
Server started, waiting for client...
Client connected: Socket[addr=/127.0.0.1,port=37896,localport=5000]
Client: hello,s23_127
Server: hello client
```