NAME: SHASHWAT SHAH
SAP ID: 60004220126
DIV/BATCH: C22

DISTRIBUTED COMPUTING (DC)
EXPERIMENT 03

AIM: To implement Inter-process communication using TCP based in Socket Programming.

CODE:
TCPServer.Java

```java
import java.util.*;
import java.io.*;
import java.net.*;

public class TCPServer {
    public static void main(String[] args) throws Exception {
        // Creating ServerSocket at port 25
        ServerSocket server = new ServerSocket(25);
        System.out.println("Connecting...");

        // Accepting client connection
        Socket ss = server.accept();
        System.out.println("Connected");

        // Creating input and output streams
        DataInputStream din = new DataInputStream(ss.getInputStream());
        DataOutputStream dout = new DataOutputStream(ss.getOutputStream());

        String str = "";
        int sum = 0;
        System.out.println("Receiving integers from client...");

        // Receiving integers from client and calculating sum
        while (true) {
            str = din.readUTF();
            if (str.equals("stop")) {
                System.out.println("Sum of integers received from client: " + sum);
                dout.writeUTF("" + sum);
                dout.flush();
                break;
            }
            sum += Integer.parseInt(str);
        }

        // Closing resources
        din.close();
        dout.close();
        ss.close();
        server.close();
    }
}
```

TCPClient.Java

```java
import java.io.*;
import java.net.*;
import java.util.*;

public class TCPClient {
    public static void main(String[] args) throws Exception {
        System.out.println("Connecting...");

        // Connecting to the server at localhost on port 25
        Socket s = new Socket("localhost", 25);
        System.out.println("Connected");

        // Creating input and output streams
        DataInputStream din = new DataInputStream(s.getInputStream());
        DataOutputStream dout = new DataOutputStream(s.getOutputStream());
        Scanner sc = new Scanner(System.in);
        String str = "";
        // Sending integers to server until "stop" is entered
        while (true) {
            str = sc.nextLine();
            dout.writeUTF(str);
            dout.flush();

            if (str.equals("stop")) {
                System.out.println("Sum of integers received from server: " + din.readUTF());
                break;
            }
        }
        // Closing resources
        din.close();
        dout.close();
        s.close();
        sc.close();
    }
}
```
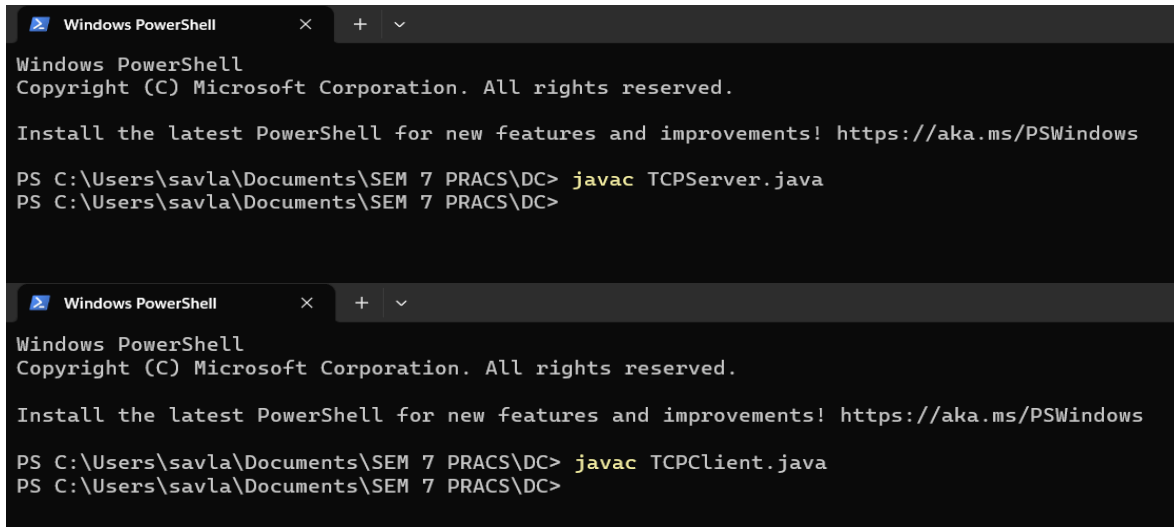
OUTPUT:

- **Compile TCPServer.java & TCPClient.java**

- **Execute TCPServer**


```
Connecting...
Connected
Receiving integers from client...
Sum of integers received from client: 15
```

- **Execute TCPClient**


```
Connecting...
Connected
1
2
3
4
5
stop
Sum of integers received from server: 15
```