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VishwakarmaInstituteofTechnology, Pune-37
(AnautonomousInstituteofSavitribaiPhulePuneUniversity)



ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

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Lab Assignment: 9

Problem Statement : Write a program using TCP socket for wired network for following:

1. Say Hello to Each other
2. File transfer

CODE:

Server.java

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

public class Server2 {
    public static void main(String[] args) {
        try {
            ServerSocket serverSocket = new ServerSocket(12345);
            System.out.println("Server listening on port 12345");

            Socket clientSocket = serverSocket.accept();
            System.out.println("Connection established with " +
clientSocket.getInetAddress());

            // Say Hello
            sayHello(clientSocket);

            // File transfer
            fileTransfer(clientSocket);

            clientSocket.close();
            serverSocket.close();
        } catch (IOException e) {
            e.printStackTrace();
        }
    }

    private static void sayHello(Socket socket) throws IOException {
        PrintWriter out = new PrintWriter(socket.getOutputStream(), true);
        BufferedReader in = new BufferedReader(new
InputStreamReader(socket.getInputStream()));

        out.println("Hello, I'm the server!");
        System.out.println("Client: " + in.readLine());
    }
}
```

```

        private static void fileTransfer(Socket socket) throws IOException {
            BufferedReader userInput = new BufferedReader(new
InputStreamReader(System.in));
            OutputStream outputStream = socket.getOutputStream();

            System.out.print("Enter file name to send: ");
            String filename = userInput.readLine();

            try (FileInputStream fileInputStream = new FileInputStream(filename)) {
                byte[] buffer = new byte[1024];
                int bytesRead;

                while ((bytesRead = fileInputStream.read(buffer)) != -1) {
                    outputStream.write(buffer, 0, bytesRead);
                }

                System.out.println("File sent successfully.");
            } catch (FileNotFoundException e) {
                System.out.println("File not found.");
            }
        }
    }
}

```

Client.java

```

import java.io.*;
import java.net.*;

public class Client2 {
    public static void main(String[] args) {
        try {
            Socket socket = new Socket("localhost", 12345); // Connect to the
server

            System.out.println("Connected to server");

            // Say Hello
            sayHello(socket);

            // File transfer
            receiveFile(socket);

            socket.close();
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}

```

```

    }

    private static void sayHello(Socket socket) throws IOException {
        PrintWriter out = new PrintWriter(socket.getOutputStream(), true);
        BufferedReader in = new BufferedReader(new
InputStreamReader(socket.getInputStream()));

        System.out.println("Server: " + in.readLine());
        out.println("Hello, I'm the client!");
    }

    private static void receiveFile(Socket socket) throws IOException {
        InputStream inputStream = socket.getInputStream();
        BufferedReader userInput = new BufferedReader(new
InputStreamReader(System.in));

        System.out.print("Enter the name for the received file: ");
        String filename = userInput.readLine();

        try (FileOutputStream fileOutputStream = new FileOutputStream(filename)) {
            byte[] buffer = new byte[1024];
            int bytesRead;

            while ((bytesRead = inputStream.read(buffer)) != -1) {
                fileOutputStream.write(buffer, 0, bytesRead);
            }

            System.out.println("File received successfully.");
        } catch (FileNotFoundException e) {
            System.out.println("Error receiving file: " + e.getMessage());
        }
    }
}

```

OutPut:

```
PS C:\Users\rames\Documents\CN\practical> java Server2
Server listening on port 12345
Connection established with /127.0.0.1
Client: Hello, I'm the client!
Enter file name to send: t.txt
File sent successfully.
```

```
C:\Users\rames\Documents\CN\practical> java Client2
Connected to server
Server: Hello, I'm the server!
Enter the name for the received file: r.txt
File received successfully.
```

