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ICS4104 Distributed Systems

Assignment: Inter-process Communication in Distributed Environment

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Assignment #1: ICS4104 - Distributed Systems

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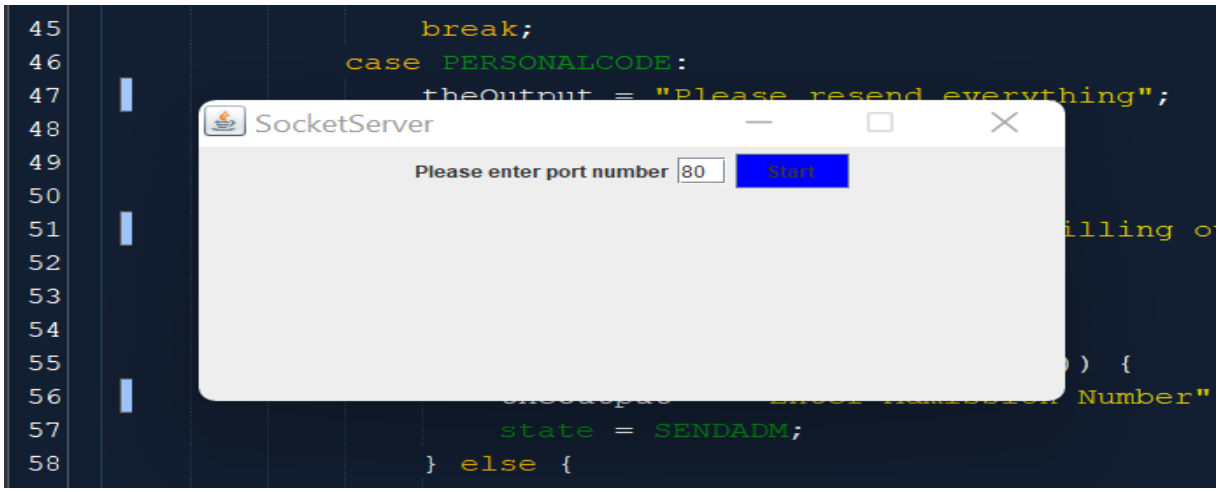
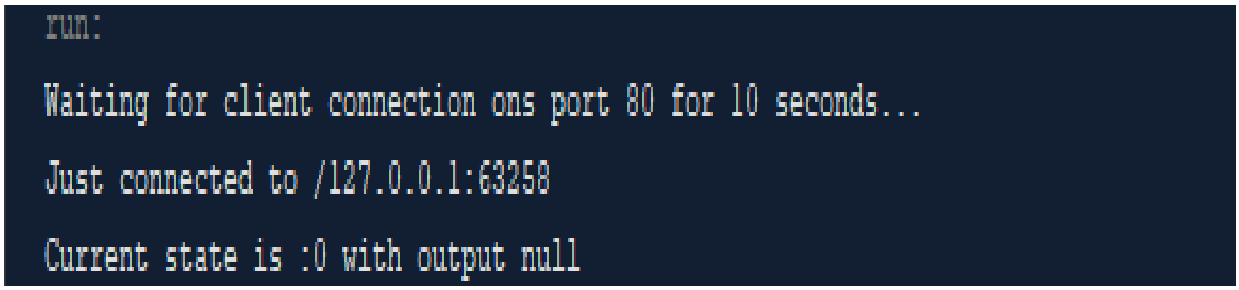
How the Project Works

1. Run the ServerGUI.java class to load the initial server GUI to enter the port number to create a server connection (default port number is 80).

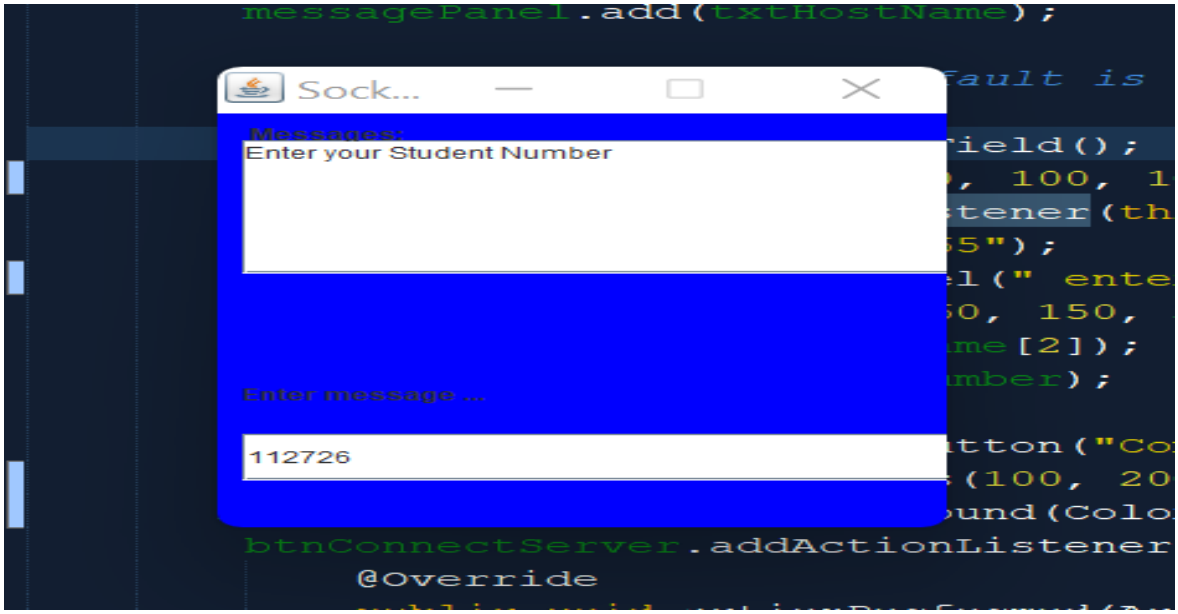


Upon clicking the "Start server" button, the server awaits connection from a client.

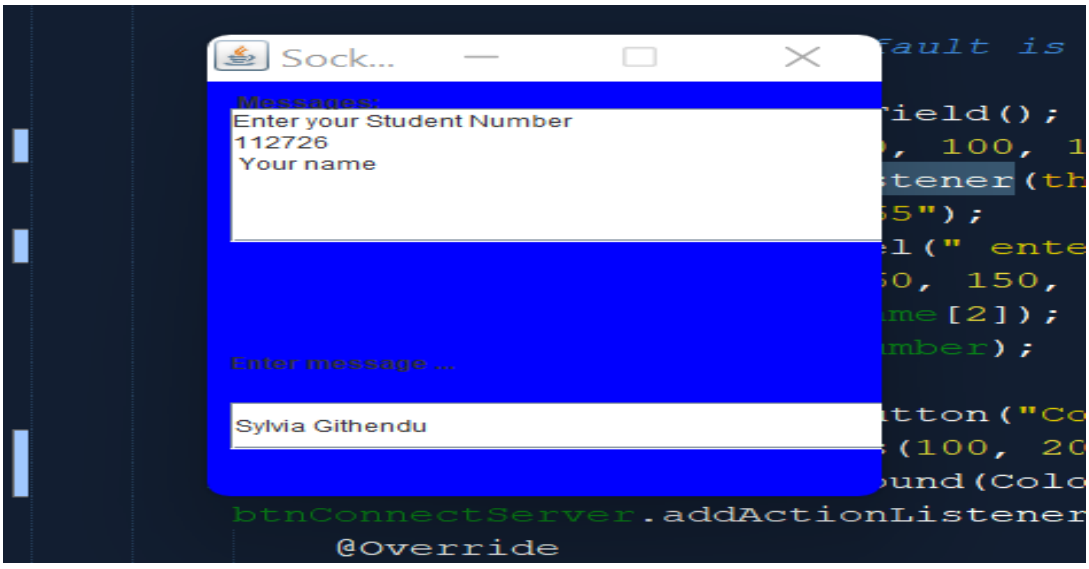


2. Run the ClientGUI.java file and enter the hostname and port number to connect to the established server connection as shown below.

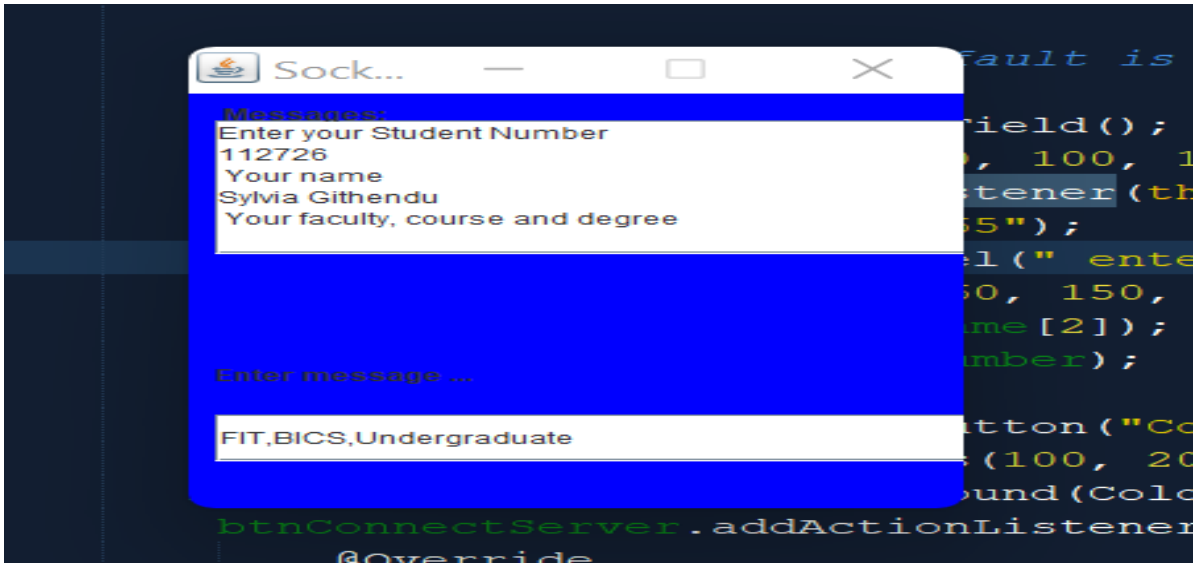
3. After connecting to the server, the server requests the student number from the client. The client receives the message and replies with “112726” as shown below.



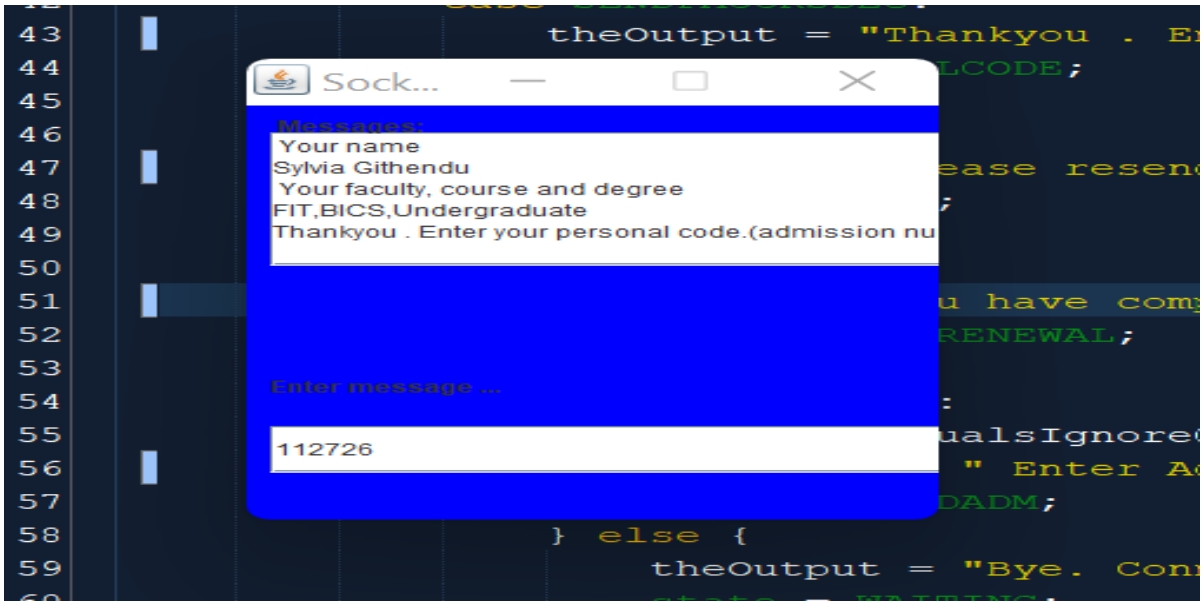
4. The server then asks the client for the name and it replies as “Sylvia Githendu” as shown below.



5. The server then asks for the Faculty, course and degree. The client then replies with " FIT,BICS,Undergraduate" as shown below.

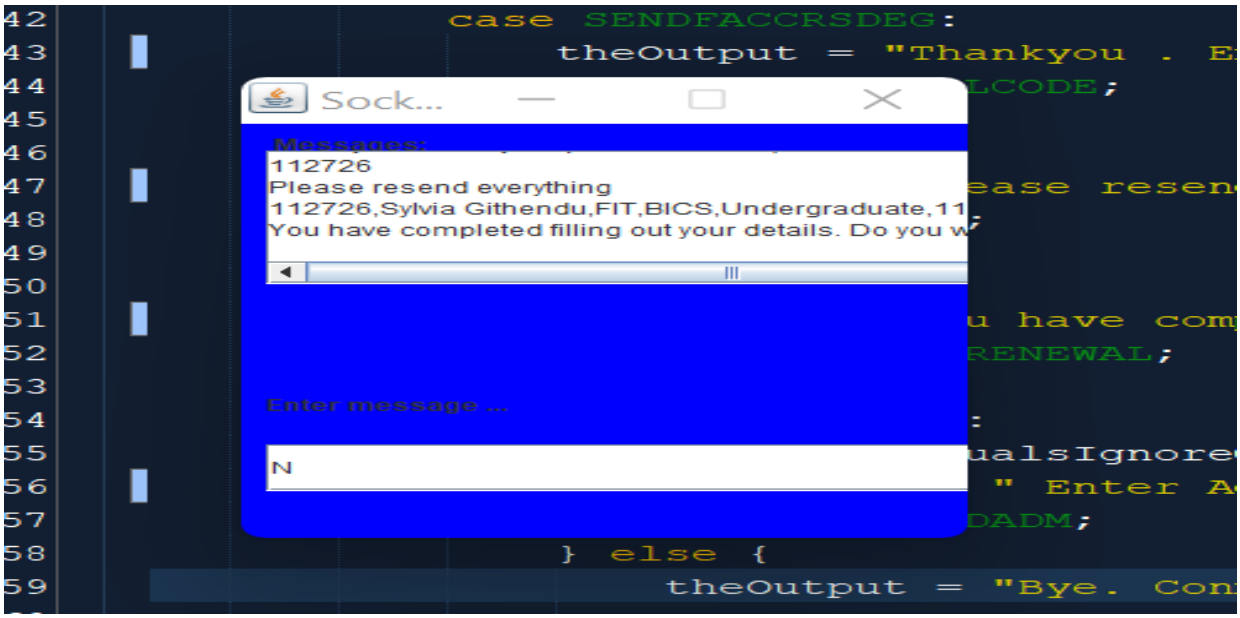


6. The server then replies with "Thank you. Enter your personal code (admission number) which the client replies with "112726" as shown below.

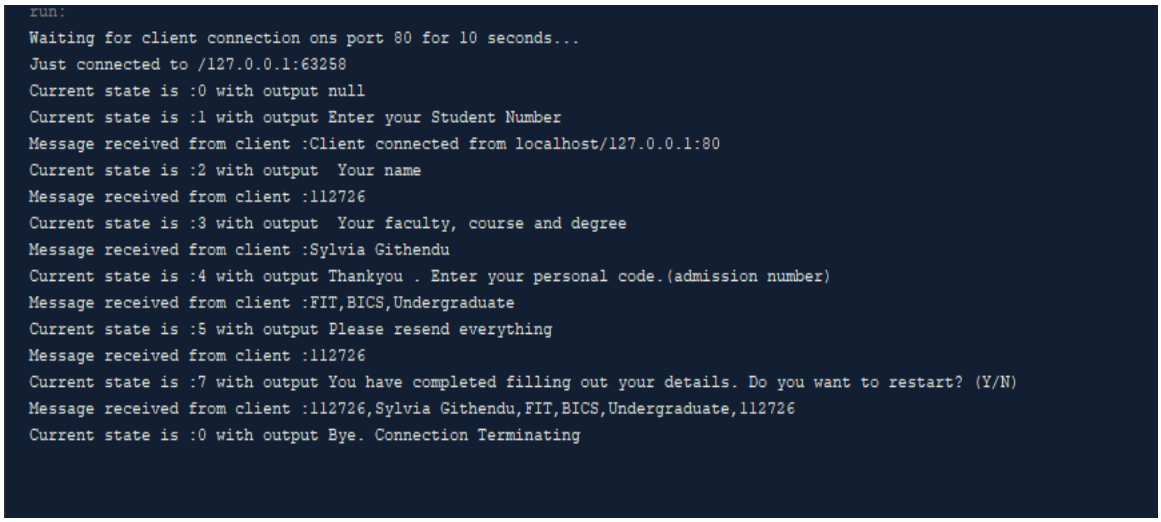


7. The server requests the client to resend everything which the client replies with “112726, Sylvia Githendu, FIT,BICS,Undergraduate,112726” as shown below.

8. The server replies and asks whether the client wants to restart the process which the client replies “N”. The connection is terminated otherwise “Y” the process would restart as shown below.



The figure below illustrates the server-client communication from the terminal.



Classes Used Server:

1. Server class
2. ServerProtocol Class
3. Main Class
4. SocketServer Class
5. ServerGUI class

Client:

1. Main class
2. ClientGUI class
3. SocketClient class
4. SocketConnector Interface

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Project Logs

1. 21/08/2021- Implementation of the knock knock protocol as a base for the project.
2. 22/08/2021 - Implementation of the server and client GUIs to be used for the project.
3. 23/08/2021 - Implementation of the server connection.
4. 24/08/2021 - Connection of the server sockets with the GUI.
5. 25/08/2021 - Connection of the client sockets with the GUI.
6. 26/08/2021 - Implementation of the client communication to the server.
7. 27/08/2021 - Connection of the server protocol with the server.
8. 28/08/2021 - Connection of the server protocol messages with the GUI.
9. 29/08/2021 - Final testing of the project and documentation.