CENG 3131: Lab for Telecom & networks – Lab 9  
Socket programming

Goals: Introduce the students for the basic communication of socket programming using Java.

# Introduction

Here we are implementing the client server TCP communication using socket protocol method and establish the connection between client and server.

# TASK 1: Connection for client and server connection established

If you don’t have java and javac, please download the [Eclipse Neon](https://www.bing.com/search?q=eclipse+java+neon&form=EDGEAR&qs=AS&cvid=8e660502b90049ceae77fd310a8cd3b4&pq=eclipse+java+neon&cc=US&setlang=en-US&PC=LSJS).

1. *File -> new -> Java Project*, give a name as *TestLab1*, then next and finish.
2. In the Package Explorer, select *src -> new -> class*, give a name *DateServer* and finish
3. Copy and paste (notice that the public class and file name should be the same) the *DateServer.java* code.
4. In the Package Explorer, select *src -> new -> class*, give a name *DateClinet* and finish
5. Copy and paste the *DateClient.java* code.
6. Compile the *DateServer.java*.
7. Run the *DateClient.java*. In the Enter IP Address window, enter the IPv4 Address. (you can find the IP address with opening *cmd* window and typing ipconfig command)

Report:

1. Show what you have observed and take screen shot of all the necessary windows.

# TASK 2. Transfer a file from client to server location

1. *File -> new -> Java Project*, give a name as *TestLab2*, then next and finish.
2. In the Package Explorer, select *src -> new -> class*, give a name *CapitalizeServer* and finish
3. Copy and paste the *CapitalizeServer.java* code.
4. In the Package Explorer, select *src -> new -> class*, give a name *CapitalizeClient* and finish
5. Copy and paste the *CapitalizeClient.java* code.
6. Compile the *CapitalizeServer.java*.
7. Run the *CapitalizeClient.java*. In the Enter IP Address window, enter the IPv4 Address.

Report:

1. Show what you have observed and take screen shot of all the necessary windows.

# TASK 3: Establish a chat window for multiple client connection keeping server program running.

1. *File -> new -> Java Project*, give a name as TestLab3, then next and finish.
2. In the Package Explorer, select *src -> new -> class*, give a name *ChatServer* and finish
3. Copy and paste the *ChatServer.java* code.
4. In the Package Explorer, select *src -> new -> class*, give a name *ChatClient* and finish
5. Copy and paste the *ChatClient.java* code.
6. Compile the *ChatServer.java*.
7. Run the *ChatClient.java*. In the Enter IP Address window, enter the IPv4 Address.
8. In the choose a screen name window, enter a name as ClientA, then run it.
9. Run again, in the choose a screen name window, enter a name as ClientB, then run it.
10. Type *I Like Telecom!* in the ClientA, see what is shown in the Clint B window.
11. Run again, in the choose a screen name window, enter a name as ClientC, then run it.
12. Now we build a connection among ClientA, ClientB, and ClientC.

Report:

1. Show what you have observed and start your own chat.
2. Take screen shot of all the necessary windows.
3. Now, please explain how the socket programming works.

# Laboratory Report

Provide the TA a hard copy of the lab7, lab8 report following the CENG 3311 Lab report Template given on the Black Board. You can write it down to the lab book or include your report in lab book. Each student will submit one lab report to the TA. Your report should have the reporting requirements needed for all tasks. **The TA will take off a significant number of points if your does not follow the lab template.**

# GRADING POLICY

1. Completion of Task 1 with results included in lab report (30%)
2. Completion of Task 2 with results included in lab report (30%)
3. Completion of Task 3 with results included in lab report (30%)
4. Completeness, quality, and correctness of the lab report (10%)