COMPUTING SUBJECT:	**Socket programming**
TYPE:	Assignment
IDENTIFICATION:	SocketEcho
COPYRIGHT:	*Michael Claudius*
LEVEL:	Easy
TIME CONSUMPTION:	30 minutes
EXTENT:	50 lines
OBJECTIVE:	**TCP-sockets**
PRECONDITIONS:	Computer Networks Ch. 2.7
COMMANDS:	

IDENTIFICATION: SocketEcho

The Mission
We are going to explore the TCP socket programming by setting up an EchoServer which returns the client-sentence capitalized.

Precondition
You have done the tutorial SocketChat in the class room.

Assignment 1 Same computer
You are to create two new projects TCPEchoServer and TCPEchoClient.
From your teacher's home page you can download the TCPServerClient .zip-file with the two projects and the classes: TCPEchoServer and TCPEchoClient. Copy the projects or copy the classes into your respective projects.
Alternatively maybe your teacher asks you to type them yourself.

Compile.
Run the client and then run the server on the same computer.
What happened and why.

Run the client again.
What happened and why.

In teams discuss the code so you are sure you comprehend the program-sentences.

Assignment 2 Two different computers
Let one computer run the server and the other one run the client.
Now the client project class must to use the correct IP-address of the computer running the server project.

Tip: Remember you can find the IP-address of your computer by the command IPCONFIG in a command prompt.
Click Start -> Programs -> Accessories -> Command prompt
Or just choose: Search -> cmd

Compile and run the programs on two different computers.
What happened and why.

IF you are on a wireless laptop on EASJ-net there might be problem with this assignment
In this case

Use the local LAN on Elisagårdsvej, if there are problems try to:
Open port 6789 to accept inbound and outbound TCP-requests.
Choose ControlPanel -> System Security -> Windows Firewall -> Advanced setteing
Then select -> Inbound rules -> Create New Rule
And configure TCP to allow to use port 6789.
Finally do the same for Outbound rules.

IF this does not work then turn off your Windows firewall.
Furthermore you might also have to turn off your ant-virus program, e.g. McAffe overrules and
controls the firewall.

OR

Use the PC on the fast network.

OR

Set up your own local network using a hotspot on your smartphone.

OR

ON EASJ-net, depricated
Open port 6789 to accept inbound and outbound TCP-requests.
Finally do the same for Outbound rules. Maybe it will work……or not…

<u>*Assignment 3: Several clients*</u>
Create a new TCPClient1 class where *main* is extended with a for-loop so one client can send 5
sentences from the user-console to the server.
Then start the server program on one host/computer.
Now try to run 3 or more clients using the same server at the same time.
What happened and why.

Critical remarks

*The present server program is unfavourable as it only handles one client-request one time and
then it stops.*
<u>*Therefore go to the next assignment SocketIterative*</u>