CS3004
Network Computing

TimeServer

The following is a simple client-server application that allows client to get the current time from a server:

TIMECLIENT

```
Begin
  connect to TimeServer
  while not terminated do
      send "What time is it?" to timeserver
      receive message from timeserver
      print message
  endwhile
End
```


TIMESERVER

```
Begin
    setup timeserver on port X
    while not terminated do
        wait for client connect
        when client connects start new thread
            while not terminated do
                receive message from timeclient
                if message = "What time is it?" then
                    Time = current system time()
                    send Time to timeclient
                else
                    send "I only understand "What time is it?"" to timeclient
            endwhile
    endwhile
End
```

a) Specify the protocol for the client and server (e.g. using a table):

	TimeClient	TimeServer
		[run TimeServer]
		[listen on port x]
		WHILE NOT TERMINATED
		[wait for client connection]
	[connect to TimeServer]	
		[accept connection from TimeClient]
		[create new thread]
	WHILE NOT TERMINATED	
	SEND message TO TimeServer	
		RECEIVE message FROM TimeClient
	IF message = "What time is it?" THEN	IF message = "What time is it?" THEN
		SET time = current system time()
		SEND time TO TimeClient
	RECEIVE time FROM TimeServer	
	PRINT time	
	ELSE	ELSE
		SEND "I only understand "What time is it?"" TO TimeClient
	RECEIVE "I only understand "What time is it?"" FROM TimeServer	
	END IF	END IF
	END WHILE	END WHILE

b) Implement a client-server application that can deal with multiple clients.
c) Implement a client that can access two timeservers (one after the other). Run these in a loop. What do you observe about the time of the two computers?

See Java code.