

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
        endif
      endwhile
    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
	SET time = current system time()
	SEND time TO TimeClient
IF message = "What time is it?" THEN	
RECEIVE time FROM TimeServer	
PRINT time	
ELSE	ELSE
RECEIVE "I only understand "What time is it?"" FROM TimeServer	SEND "I only understand "What time is it?"" TO TimeClient
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.