

# Forest Fire Forecasting Task

## Task approach:

- Creating a TCP Server and client.
- Send data from server to client every second.
- Receive the values from the server as the client and print calculations every 5 seconds.

## Libraries used:

- **String** → Manipulate data by converting the float values sent by server to client to string so it could be transferred through send() function. Also recasting the value as float once again when it gets received by the client.
- **time.h** → to print time stamp next to each output by client or server to demonstrate visually the time difference between each command.
- **WS2tcpip.h** → The main library to create a TCP socket connection between a server and a client

## Results:

The left side represents the Server side, where the server prints the value of the temperature to the client and the time it was send at. The right side is the Client, where it only prints the final calculations of average over time and accumulation over time every 5 seconds as the time stamp shows.

```
C:\Users\user\source\repos\Server\64\Debug\Server.exe
Ragaa connected on port 52678
tempvalue each sec: 20.012516 Time: 17:59:30
tempvalue each sec: 21.933455 Time: 17:59:31
tempvalue each sec: 25.851343 Time: 17:59:32
tempvalue each sec: 23.583662 Time: 17:59:33
tempvalue each sec: 28.238160 Time: 17:59:34
tempvalue each sec: 21.741453 Time: 17:59:35
tempvalue each sec: 27.186313 Time: 17:59:36
tempvalue each sec: 23.040598 Time: 17:59:37
tempvalue each sec: 20.914225 Time: 17:59:38
tempvalue each sec: 21.473444 Time: 17:59:39
tempvalue each sec: 29.887363 Time: 17:59:40
tempvalue each sec: 21.151086 Time: 17:59:41
tempvalue each sec: 20.089132 Time: 17:59:42
tempvalue each sec: 25.317766 Time: 17:59:43
tempvalue each sec: 26.018925 Time: 17:59:44
tempvalue each sec: 21.662699 Time: 17:59:45
tempvalue each sec: 24.508852 Time: 17:59:46
tempvalue each sec: 20.570513 Time: 17:59:47
tempvalue each sec: 27.834860 Time: 17:59:48
tempvalue each sec: 25.159940 Time: 17:59:49
tempvalue each sec: 28.761600 Time: 17:59:50
tempvalue each sec: 29.561050 Time: 17:59:51
tempvalue each sec: 25.394688 Time: 17:59:52
tempvalue each sec: 24.621796 Time: 17:59:53
tempvalue each sec: 28.624237 Time: 17:59:54
tempvalue each sec: 27.798229 Time: 17:59:55
tempvalue each sec: 29.970085 Time: 17:59:56
tempvalue each sec: 26.116301 Time: 17:59:57
tempvalue each sec: 22.662699 Time: 17:59:58
tempvalue each sec: 28.483236 Time: 17:59:59
tempvalue each sec: 23.750462 Time: 17:60:01
tempvalue each sec: 26.773504 Time: 17:60:02
tempvalue each sec: 20.087912 Time: 17:60:03
tempvalue each sec: 22.759462 Time: 17:60:04
tempvalue each sec: 25.889342 Time: 17:60:05
tempvalue each sec: 28.377899 Time: 17:60:06
tempvalue each sec: 24.850428 Time: 17:60:07
tempvalue each sec: 27.438950 Time: 17:60:08

C:\Users\user\source\repos\Client\Debug\Client.exe
avg : 23.9062
Accumulation: 119.531
Time: 17:59:35
-----
avg : 23.3807
Accumulation: 233.807
Time: 17:59:40
-----
avg : 23.7541
Accumulation: 356.312
Time: 17:59:45
-----
avg : 23.8044
Accumulation: 476.089
Time: 17:59:50
-----
avg : 24.5221
Accumulation: 613.052
Time: 17:59:55
-----
avg : 24.9334
Accumulation: 748.003
Time: 17:60:01
-----
avg : 24.7789
Accumulation: 867.263
Time: 17:60:06
-----
avg : 24.9989
Accumulation: 999.957
Time: 17:60:11
-----
avg : 24.9954
Accumulation: 1124.79
Time: 17:60:16
-----
```

## Github Repo:

<https://github.com/RagaaM/-forest-fire-forecasting-c---server-client-TCP-socket-programming>