Abstract TCP Server – part 3

Mission

To add configuration to the Abstract Server using xml-files.

Background

Previous exercise Abstract TCP Server – part 1 and part 2
Slides: ServerFramework1.pdf, ServerFramework2.pdf and ServerFramework3.pdf

XML files see

- https://www.w3schools.com/xml/default.asp
- https://support.microsoft.com/da-dk/help/307548/how-to-read-xml-from-a-file-by-using-visual-c

Assignment 1 – Create Configuration file

Make an xml-configuration file, with **one** root e.g. ServerConfig and with values for

- ServerPort
- ShutDownPort
- Possible servername
- Possible debuglevel (inf, warning, error)
- …

Use any text editor.

Assignment 2 – Read Configuration File

In the AbstractTCPServer somewhere in the initialization (e.g. in the Main-method) read the config-file and use the values for setting up the server.

To open config-file use:

```
XmlDocument configDoc = new XmlDocument();
configDoc.Load( " << configFileName >> ");
```

To read a port number:

```
XmlNode xxNode = configDoc.DocumentElement.SelectSingleNode("NameOfTag");
if (xxNode != null)
{
    String xxStr = xxNode.InnerText.Trim();
    Int xx = Convert.ToInt32(xxStr);
}
```

Extra E1 – Improve the Configuration

To be more free where to locate the configuration-file you are to read an environment variable, which value hold the location.

Step 1: create environment variable

Open file exploire, right click at my PC and chose properties, choose Advanced System Settings, and then click environment variable (danish – 'miljøvariable').
Now make a new entry for the system 'AbstractServerConf' with a value some path on your computer e.g. c:\conf\server, where you have placed your config-file.

Step 2: read the environment variable
see: https://learn.microsoft.com/en-us/dotnet/api/system.environment.getenvironmentvariable?view=net-7.0

```
String path = Environment.GetEnvironmentVariable(”AbstractServerConf”)
```

Step 3: use this path for open / load the xml config-file (see assignment 4)