

24/04/2023 - Logger exercise

Logger exercise

This is a take-home exercise. Please deliver this in a github repo or similar. No zip files.

We want to build a small Logger library in the programming language of our choice. This will be a library **used by other development teams** in the company, so we need to build it as such and it needs to be generic and open enough.

- First, we want to implement functionality to log a string to console.
- Then, we want to add support for different log levels: Debug, Info, Warning, Error. While clients of the library can send any of these log levels, we should be able to configure which severity level is accepted at the moment.
 - The log levels order is: Debug, Info, Warning, Error.
 - For example, if we configure that the minimum accepted log level is Warning, we will not handle Debug and Info logs.
 - This is configured in runtime.
- Now, we want to add log targets. How can we change and best model our Logger library so we can send all received logs to different targets. Our first target was console, but now we want e-mail, file system, server APIs, etc. Do not code the actual implementation of these targets (just log something that can be differentiated in console). This is more of a model exercise.
- Finally, how can we configure our minimum log levels per target? For example, errors only going to e-mail but console prints everything, etc. Also needs to be configurable in runtime.

This is a simple exercise. So we want you to **consider** a few things:

- Consider performance. A logger could go through some very heavy usage depending on which team uses it.
- Proper management in a multi threading environment
- Have clean code and structure

We expect you to spend between **30 minutes and 2 hours** in this exercise.

Extra points if you (these you can document in the README if you wish):

- Consider how and where we could make this Logger more open to modification.
- Give us your own ideas on how to improve this.
- Any improvements to the code that could simplify our Big O notation of every method? Any ways to remove loops, if, switches, etc?