


Assignment (Backend / Full stack)

OnlineLogsReader

Feature Requirement - Build an online logs reader that is capable of the following things -

- It should read text from a file from a file which is present on the server and show it on the client side.
- The text file should be on the server side.
- Additions to the file will always be in append mode , viz. only new lines will added, no previously written element will change
- Any addition on the file should be replicated on the client side
- The process of showing up any new change in the file to the server should be as realtime as possible

Definition of server -

- A remote computer  which contains a file where logs are getting written to.
- For development and for this assignment you can assume server to be a process running on the local system and has access to a file where logs (text) is getting written

Definition of client -

- One or more computers/systems which can establish connection to the server.
- having a visual interface (website / printing on the terminal) to stream the logs that it is getting from the server

Assumptions -

- Only text will be added to the file and nothing is likely to be removed
- The size of the file will be growing and eventually will be very big
- Loading the entire file to memory at any point will cause memory to be filled up. **Hint: consider reading in chunks**

Major Technical issues to solve -

- How to establish a connection between client and server ?
 - There are multiple correct ways of doing this. As per the requirements the **data transfer should be as real time as possible**. Also polling is a bad idea.
- How to know that something is added to the file ?
- How to make sure that only the newly added text is sent to the client ?
 - Since the file is too big you can't read the whole file everytime

Additional / Bonus challenge    -

- The feature should support multiple clients at the same time.
- Evaluate possible solutions and document pros and cons of each

Language / Database -

- You can use any language of your choice
- Most of the solutions will not require a DB. However if your solution needs it, you can use any DB of your choice. You will be asked to justify the selection as a followup.

Submission -

Your submission should have the following -

- Architecture Diagram / Solution write up -
 - A basic flow diagram stating the architecture of the system.
 - A write up of how you have solved the 3 major technical issues
- Setup steps / script -
 - The feature will be run on computers that would not have the dependencies (libraries, languages, frameworks) setup like your local computer.
 - Assuming that all the solutions will be run on a linux/mac environment create a script that installs all the dependencies, creates a text file and run code 👍
 - Otherwise you should at least write the steps to setup our environment to run your code 😊
 - If the whole thing is dockerized then you are awesome.
- Code -
 - The project directory should be uploaded to google drive and a download link should be sent.

Assessment Criteria -

You will be assessed by the following criteria and in the exact order:

- **The code needs to work** - All the feature requirements should be met. i.e **when there is an entry on the file present in the server, it should be shown in a client interface in real time** ★★ ★
- **How you solved major technical issues** - There are many different ways of solving the question. Some of them are more optimal than other.
- **Coding Standards / Best Practices** -
 - The code should follow of the modern design patterns.
 - IT should be readable, scalable and error free
- **Documentation** - This includes setup steps, architecture Diagrams write-ups etc etc.
- **Additional / Bonus challenge** - This is a huge plus.
- **Unit Test** - Its always a bliss to have well tested code

Time Line -

- You can take up to 2 days time to submit the assignment.
- You can take up to 3 day if you do the bonus challenge. **Pro Tip : Do the bonus challenge and support multiple clients**

Contact info -

- If you are stuck at any point of solving the assignment eg. with understanding the requirements or anything else feel free to reach out at **subham@inito.com**

PS -

- Here is some Lofi music to keep you up with your coding - [🎵 lofi hip hop radio - beats to relax/study to](#)
- Cats to look at when bored - https://instagram.com/cats_of_instagram?igshid=YmMyMTA2M2Y=

Good Luck 👍 !!