Distributed Systems

Assignment 2

Changes

Filename readme.txt

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**1 Previous Thoughts and Feedback of Draft**

- For Assignment 2 Draft I only implemented a simple server and client model, and made the following plan:

\* Briefing

I plan to apply a producer-consumer pattern on this project:

The producer takes requests from the ATOM server, push the server sockets to the Priority Blocking Queue (which is a buffered area in this pattern).

Each server socket stores the data from GETClient or the Content Server

The consumer takes the sockets from the queue

At this stage, I have only implemented the aggregation server initiation.

In the aggregation server, the lamport clock will be initialized at 0 and it ticks every time when the producer (consumer) receives a request

There would also be a XML parser to translate the message between the ATOM server and the content server which will be implemented later

- Draft Feedback

Text

Description automatically generated with medium confidence

**2 Changes Compared to Draft**

According the above plan and feedback, I have made the following changes:

1. Instead of having a separate class of Lamport Clock, I integrated the clock in the Aggregation Server, so that I can easily access and increment the clock.

2. For a clearer logic, I moved the class Consumer and Producer into the Aggregation Server class. This helped me to have a clearer logic when implementing. Meanwhile, this also renders less java files in a folder, making the folder cleaner.

3. I replaced the Priority Blocking Queue with Blocking Queue, it can suit better in the producer-consumer model in java.

4. For testing part, in the draft, I could only start and shut down server. However, in my final version, I have developed four methods to test my program:

[1] single client and server -> connection of single client and server

[2] single client timeout -> which will delete content after 12s not responding

[3] multiple client and server -> connection of multiple client and server

[4] multiple clients and server timeout -> which will delete content after 12s not responding (multiple clients and servers version)