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Distributed File Storage System

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Overview

File Storage Systems are essential in the current world. We need a place to store data, in a reliable and secure way. We also want to make sure the storage system works as expected, meaning it is “always” available, and performs the operations in the order we requested, even if we are in a shared environment.

Specifications

Implement 4 different projects using: SMR, Xu Liskov, EPaxos, and finally, Raft. The idea is to compare the implementation, test each one, and gain some experience with distributed systems, fault tolerance algorithms and protocols.

Milestones

Part 1 - SMR

Finish fully implementing with unit testing, functional testing and L&P testing by: **31.01.2023**

Part 2 - Xu Liskov

Finish fully implementing with unit testing, functional testing and L&P testing by: **31.03.2023**

Part 3 - Raft

Finish fully implementing with unit testing, functional testing and L&P testing by: **31.05.2023**

Part 4 - EPaxos

Finish fully implementing with unit testing, functional testing and L&P testing by: **31.07.2023**

References:

- Xu and Liskov: <http://www.ai.mit.edu/projects/aries/papers/programming/linda.pdf>
- SMR https://en.wikipedia.org/wiki/State_machine_replication
- Raft: <https://raft.github.io/raft.pdf>
- EPaxos: <https://www.usenix.org/system/files/nsdi21-tollman.pdf>