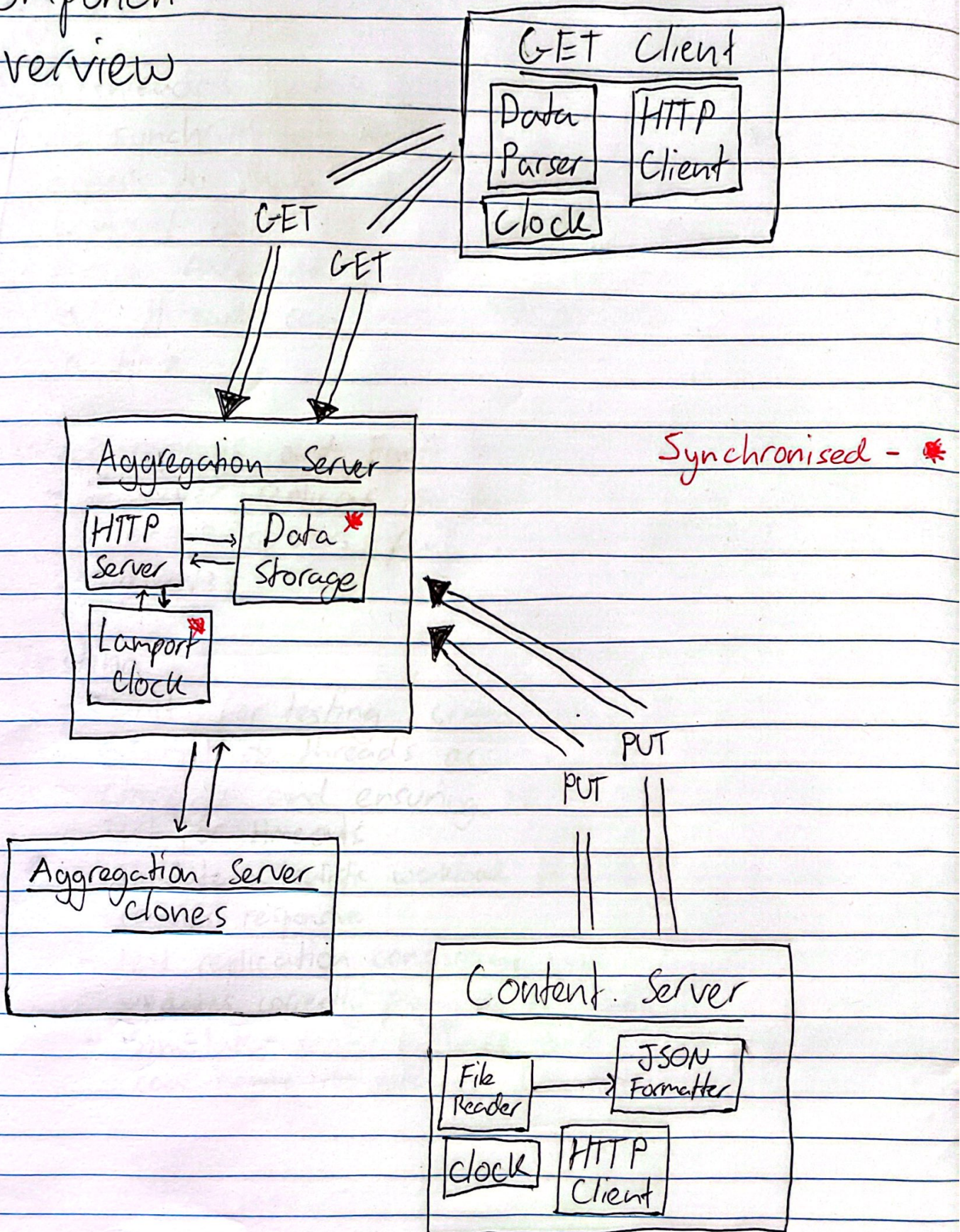


Component Overview



Key Points

- Multi-threaded safety

- use synchronized methods to protect ~~shared~~ access to shared resources such as the Lamport clock and weather data storage
- Avoid race conditions by ensuring that only one thread can modify critical sections at a time.

- Server replicas and Fault tolerance

- 3 server replicas so that in the case where 1 or 2 servers fail, we can still serve requests.

- Testing

- JUnit for testing critical sections such as multiple threads accessing the data storage and ensuring no race conditions.
- Test for timeouts
- Simulate a realistic workload to ensure the system remains responsive
- test replication consistency and make sure data updates correctly propagate to all replicas
- Simulate server failures and ensure replicas can handle requests and data isn't lost