110 期中考

一 名詞解釋30%

1. scale-up vs. scale-out

2. three-tier architecture & benefits

3. name service vs. directory service

4. safety vs. liveness

5. formal definition of the quorum system (Hint: Coterie)

6. explain 2 phase commit protocol

二 回答問題 70%

1 bakery algorithm 15%

- Does the algorithm depend on any value returned by a read that overlaps a write?

    - does the algorithm depend on the atomic of read/write?

- guarantee safety & liveness?

- explain why?

2. Yo-Yo

- explain and use an example to illustrate the main stages of this algorithm

- what is the time & message complexity

3. CAP

- prove why CAP cannot exist at the same time

- design an algorithm that guarantees consistency and availability when no partition happened

4. GFS vs. Ceph

- list specific usage and advantage of both system

- draw and explain how each architecture benefits the specific usages

- explain how GFS deletes files and the reason for such lazy strategy