

CPSC 416 Distributed Systems

Winter 2023 Term 1 (November 30, 2023)

Tony Mason (fsgeek@cs.ubc.ca), Lecturer



Logistics



Teaching Assistants

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Cathy Yang (kaiqiany@student.ubc.ca)



Office Hours

Remember: Use Piazza for **all** official course-related communications

- Not on Piazza? Not official.
- Canvas “comments/messages” **are not monitored**



Office Hours:

Who	When	Where
Tony	Monday 14:00-15:00 Wednesday 16:00-17:00	Discord
Andy	Thursday 19:00-20:30	Discord
Hamid	Friday 16:30-18:00	Kaiser 4075
Jonas	Thursday 13:00-14:00	Online (see Piazza)
Cathy	Friday 09:00-10:30	X237

Assessment

This week

- Self-Assessment (Thu @ 17:00)

Next week

- Tuesday - **No class**
- Capstone Project code due (Wed @ 23:59) – link to repo, or archive, submit on Canvas
- Thursday – **Optional in-class final**
- Capstone Reports + Presentation due (Thu @ 23:59) – accepted (without penalty) until 2023/12/22.

Final exam: **December 22, 2023 @ 19:00.**

Note:

- You are strongly encouraged to collaborate with others on this
- You should use tools at your disposal to answer these questions
- **Do not forget to submit it.**



Today's Failure




While cheap, storage space is not infinite



Rackspace runs short of Cloud Files storage in LON region

Rackspace? More like Lackspace as customers face upload and delete problems

 [Richard Speed](#)

Thu 30 Nov 2023 // 12:30 UTC

Rackspace is running out of, er, space. At least as far as a portion of its Cloud Files customers served by the LON (London) region are concerned.

According to the company, problems began on November 17 at 1545 UTC, as some customers experienced 503 errors when attempting to access their files.

On November 24 – yes, a week later – the company said its engineers increased storage capacity in the region. However, problems have continued this week. A *Register* reader, working for a SaaS biz that uses Rackspace's Cloud Files product, told us: "Since Monday we've been seeing a big jump in errors as they tried to upload files, and have had to delay a release because we can't publish assets to their CDN.

"To be clear, some operations succeed, but we're seeing between 1 and 6 percent fail in any given hour, and it's not getting any better."

Optional In-Class Final



In-Class Final Exam (December 7 @ 17:00)

Final Exam (In Class - Optional)

This will be a written, in-class final examination. The format will be:

- 20 True/False Questions based upon the course materials
- 20 Multiple Choice Questions based upon the course materials

Note: these questions are intended to evaluate your understanding and thus may include *scenarios* that we have not specifically discussed but can be answered using the principles of what we discussed previously.

You may bring one sheet of standard size (A - 8.5"x11") paper on which you can have notes (hand written or printed.) You may not use any enlargement devices (e.g., please do not bring your scanning electron microscope that you need to read the molecularly etched copy of the books, class recordings, slides, etc.) No powered devices may be used during the final examination.

This is an optional examination, you are not required to take it. If you do take it, your final exam grade will be the maximum of the grade on this optional exam and the regularly scheduled final exam on December 22, 2023.

Note: you do not need to get any minimum mark on the final examination in order to pass this course.

In-Class

Optional

40 Questions

Goal: draw from self-
assessment questions
(with some modifications.)



Key Concepts

Consistency: Strict,

Consensus: Paxos, Quorum, Read/Write

Replication

Sharding

CAP

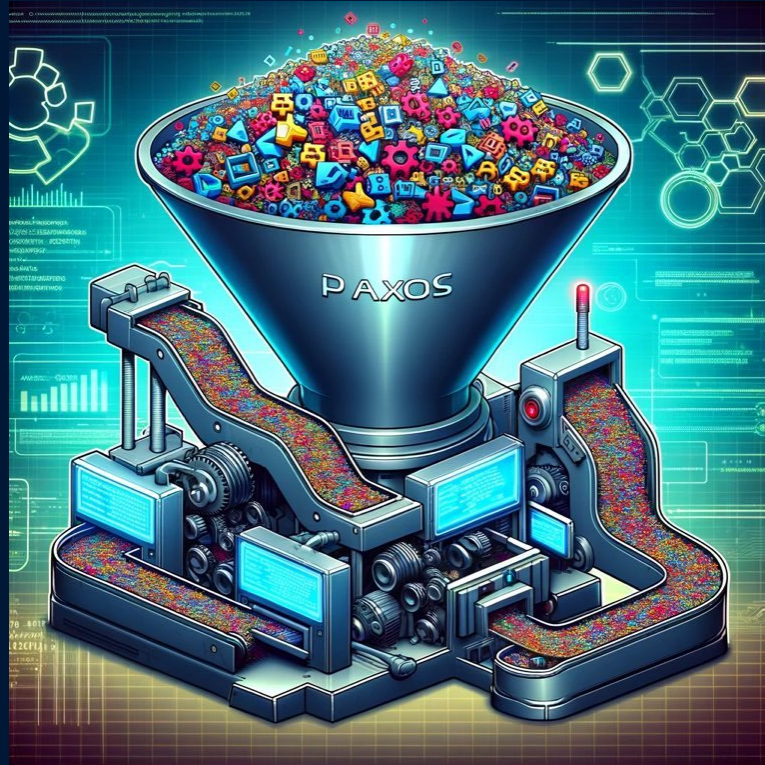
Recovery

Failure

Networks: Latency, Bandwidth, Reliability



Paxos Visualized



Sample Optional In-Class Final Exam

Posted On Piazza

Answers to Follow

THE UNIVERSITY OF BRITISH COLUMBIA
CPSC 416: Optional In-Class Final Examination
November 30, 2023



Your Name:

Your Student ID:

Your Signature:

Examination Number: 656e8309

Questions?





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