416 TAs survey

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- CPSC 416, Term 2, Section # 201
416 Course survey

- Course survey:
  - https://eval.ctlt.ubc.ca/science
Study on Student Led Software Groups

To understand and improve how we teach software development, we are conducting a study on group communication in student software development teams.

Data Collection:
• existing course data (e.g. course grades, submissions, demographic information)

What you need to do:
• There is no extra work involved for you

Data Analysis:
• When: After final grades are submitted
• How: All data will be anonymized before it is analysed

Risk:
• Your participation in the study will not affect your course experience or course grade in any way.

Can I opt out?
• Yes, you may choose to have your data removed from the study by accessing the opt out link here: opt-out form or follow the opt-out link in this document: consent form
P2 end-game
[reports, demos, marking]
Distributed system design, 100K ft level

April 6, 2018
Distributed system design

• What do you need to think about when designing a distributed system?
Distributed system design

• What do you need to think about when designing a distributed system?

  • System API
  • Node roles
  • Network
  • System state
  • Failures
System API

- Who are the clients of the system?
- What do they assume about the system?
- How do they contact the system?
- Concurrent clients?
- Do clients know about one another?
- How can clients interfere with one another?
- Do we trust the clients? How much and with what?
System API

A2

- Who are the clients of the system?
- What do they assume about the system?
- How do they contact the system?
- Concurrent clients?
- Do clients know about one another?
- How can clients interfere with one another?
- Do we trust the clients? How much and with what?
Node roles

- What are the different roles that nodes play in the system?
- What makes each role distinct and necessary?
- Which roles need to interact?
- What do different node roles assume about one another?
  - What is the API between node roles? (cross-cutting)
  - All API questions apply: e.g., what is the trust between roles?
Node roles

A5

- What are the different roles that nodes play in the system?
- What makes each role distinct and necessary?
- Which roles need to interact?
- What do different node roles assume about one another?
  - What is the API between node roles? (cross-cutting)
  - All API questions apply: e.g., what is the trust between roles?
Network

- What is the network model; what does the network provide?
- What is the network API? And, what are its semantics?
- How do we name entities in the network and how do we find/look them up?
- What is the network topology?
- Do we trust the network? With what?
Network: A1, P1

• What is the network model; what does the network provide?

• What is the network API? And, what are its semantics?

• How do we name entities in the network and how do we find/look them up?

• What is the network topology?

• Do we trust the network? With what?
System state

• What is the distributed system state?

• What is not distributed system state?

• What nodes have what state in the system?

• What distributed state can clients observe?

• What are the semantics of distributed state? Is this a function of node type, location, or other features of the system?
System state: **BT**

- What is the distributed system state?
- What is **not** distributed system state?
- What nodes have what state in the system?
- What distributed state can clients observe?
- What are the semantics of distributed state? Is this a function of node type, location, or other features of the system?
Failure (cross-cutting)

- What failures are outside the scope of what the system can deal with?
- Can the network fail, how? How does the system respond?
- Can nodes in the system fail, how? How does the system respond?
- Can clients fail? How does that impact the system?
- Can the system provide graceful degradation?
- Is there fate sharing in the system? Between what roles?
A2

- What failures are outside the scope of what the system can deal with?
- Can the network fail, how? How does the system respond?
- Can nodes in the system fail, how? How does the system respond?
- Can clients fail? How does that impact the system?
- Can the system provide graceful degradation?
- Is there fate sharing in the system? Between what roles?
Recap

• What do you need to think about when designing a distributed system?
  • System API
  • Node roles
  • Network
  • System state
  • Failures

Thank you for participating in 416 this term!