Each 6.1800 lecture will come with an outline. You can fill this in during lecture, after lecture, or not at all — it's entirely up to you how you use it. The goal of these outlines is to help you understand the main points that you should be taking away from each lecture. In some cases we will also include examples of things you should be able to do after each lecture.

*In the past, these outlines have proved to be an effective tool for studying for the exams. Note that the outlines are **not exhaustive**; there will be topics and nuances in lecture that aren't captured by the outline.*

Lecture 20: Replicated State Machines

- What does it mean for two replicas to be *inconsistent*? How might two replicas become inconsistent?
- Consider a setup with a coordinator, a primary replica, and a back-up replica.
  - What problems does this set up solve? (e.g., are there situations where this system can prevent data from becoming inconsistent?)
  - What problems *doesn't* it solve?
    - What do we mean by a *network partition*?
    - How is a network partition different from network failures we've considered in the past?
- Replicated State Machines
  - What is the role of the view server?
  - How does a replica learn whether it is the primary or backup replica?
  - How does a write work in such a system?
    - What modules of the system communicate, and in what order?
  - What happens if the primary replica fails?
  - What happens if a network partition prevents the primary replica from communicating with the view server?
- What type of consistency does a replicated state machine provide?
  - Do all systems need this type of consistency?

After Recitation 20, you should be able to put the problem that Raft solves in the context of replicated state machines.