6.175 Final Project Presentation

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Our progress

- We finished! Yay. We got the store queue working in the multiprocessor model with load hits under store misses.
- No bonuses/extensions (we finished last night)

The Process

- During our TA meeting, we asked for debugging advice and received this:
  - “Don’t write bugs.”
- At the beginning, this was very difficult, and we had lots of bugs. Over time, though, we got better at following the advice.

Issues we encountered

- Over the course of the project, when changing the underlying logic we sometimes missed a few parts of the code that should have been effected.
  - Example: Making sure the update the MSI state in every single possible location.
- The scheduler.
  - It gave us enough difficulty that we started using compiler directives to set the schedule.
- Build time and benchmark running time.

Issues pt 2

- We spent several hours debugging a cache error where we used the wrong tag in a downgrade response. We evenutally fixed it by manually tracking the state of the entire cache system over many requests
- When we first implemented LHUSM, we accidentally allowed load hit under load miss. That was a pain to debug too.

Solutions

- A lot of our teamwork was in debugging. We were rarely both coding at the same time.
- Instead, whenever we encountered an issue, we would both brainstorm what could be wrong in our code.

Course Feedback

- Lab Infrastructure
  - Inability for multiple people to run tests on the same computer due to port collision
  - Very long compile times (perhaps we can compile against a dummy simulation environment with the same methods and scheduling properties but less complexity?)
  - Better debugging infrastructure

Course Feedback

- Lectures and Content
  - A lot of lectures were spent going over code that appeared on the slides.
    - Useful at the beginning of the semester when we haven't seen BSV before
    - Not particularly useful later in the semester