

Threads and Nachos

CS 162 Discussion Section

Feb 03, 2010

Plan for Today

- Questions and concerns
- Project requirements
 - Design doc examples
- Threads and join demo (?)
- Nachos walk-through (?)

Class Projects

- 4 projects total
- 1st project focuses on threads and synchronization
- Group work is expected

Project 1 Timeline

- **Initial design doc:** due Thursday Feb 11th
- **Design review** with me: schedule for Friday Feb 12th or Monday Feb 15th (20-25 minutes)
 - See website for sign up form (Available slots will be updated soon)
- **Code:** due Monday Feb 22nd
- **Final design doc:** due Tuesday Feb 23rd
- **Peer evaluations:** also Tuesday Feb 23rd

Project 1 Contents

- Thread join
- Condition variables
- Thread sleep
- Message passing using condition variables
- Priority scheduling and priority donation
- Boat problem using threads

Design Doc Expectations

- 2000-4000 words long
- Contents:
 - Overview of solution (2-4 lines)
 - Correctness constraints
 - Data structures
 - Design decisions
 - Descriptions of Java classes and methods
 - Pseudocode for key algorithms
 - **Test plan and test cases!**

Project Tips

- Start early
 - Read the assignment
 - Learn the tools: Nachos, Java, **SVN**
- Test heavily
 - This code can be tricky
 - Design test cases before solution
 - Be devious
- Build a group dynamic that works
 - Make sure everyone understands what's going on
 - Make sure everyone has something to do
 - Figure out what can be parallelized and what can't
 - Check in periodically

Thread Demo

Nachos Demo

More Nachos Tips

- `gmake doc` in root directory for JavaDoc
- Use Eclipse to browse around (see site)
- Run `nachos -d t` to turn on thread debugging (other options possible too, see `nachos -h`)
- `Println` is your friend