CSE 306 Software Quality in Practice

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What are topics you'd like us to discuss on Wednesday?
(sample of responses)

Review / Reviews for LPR / How to prepare for LPR / The order of using tools. (about half)

What output/evidence is expected? (several)

Maybe seeing criterion being used in other languages / Tools in other languages (two)

Are there testing programs that mimic human interaction on a website?

How to test AI?

How to get a job.
Reflect a bit on LEX23, addressing these questions:

1. Were the preparations you made for LEX23 appropriate, or would you do something different before part 1 of the LPR?
2. Are you happy with the amount of work you were able to complete during LEX23?
3. Do you have a plan for how to use your remaining time during LEX24?
1. Were the preparations you made for LEX23 appropriate, or would you do something different before part 1 of the LPR?

   Yes, the process is very similar to the labs we have been doing throughout the whole semester. I will need to do more preparation by organizing my available resources. I should have brought some notes with me to help with the process and how to invoke some commands. I would create a schedule with time expected to spend on each component of the lex, as I am not happy with the progress made on lex 23. I think I was well prepared. I created a sheet with some commands I though were useful, like how to run gdb on Criterion tests, and gprof. I feel like it was lacking in any other information, and I would like to add more to it, specifically when it comes to C syntax.

   I don’t think I expected the LEX to be like how it was. Having my hand held through most of the LEXs in this course didn't prepare me too much. I think more preparation in terms of remembering C syntax (since we can’t google syntax) would help.

   I need to prepare more before LPR part 1. I copied down the most important parts of the slides from April 17th, and that was helpful to me, but I need to create a cheat sheet for how to use the different tools. I spent too much time looking through the LEXs during LEX 23.

   No, I wasn’t used to using the lab computers and I didn’t have most of the commands to use the tools memorized.

   I went into LEX23 with no preparations and I think that was the part that costed me. I don’t think I will make the same mistake in the LPR now that I’ve learned my lesson.
2. Are you happy with the amount of work you were able to complete during LEX23?

No - 36/68 (53%)

Yes - 20/68 (29%)

Didn’t address - 12/68 (18%)
3. Do you have a plan for how to use your remaining time during LEX24?

Yes - 57/68 (84%)

No / Not yet / didn’t address - 11/68 (16%)
TO PLAN

START

set up Trello pipelines

write/revise Trello cards

put cards in backlog

review cards for scope

FINISH

Repeat until all features are covered by at least one card

Link to GitHub repo.
Make sure it is accessible to course staff.

BASIC TOOLS: Trello
ADDITIONAL TOOLS: git
**To build a new feature**

1. **START**
   - Claim Trello card and move to In Progress. Issues can be used to identify subtasks.
   - At START create a new branch. Each time you visit a box add/commit/push evidence of what you did. Also use a meaningful commit comment. At FINISH merge branch.
   - Move Trello card to Done.

2. **write opaque tests**
   - stub out code
   - run tests
   - implement
   - run tests
   - check coverage
   - Write transparent tests

3. **FINISH**
   - Repeat until all requirements for feature are covered
   - Repeat until all the tests pass
   - Repeat coverage goes to 100%, with all tests passing

**Basic tools:** compiler, editor, make, criterion, git, gcov, Trello

**Additional tools:** gprof, callgrind, memcheck
To address a bug:

1. **START**
   - Claim Trello card and move to In Progress. Issues can be used to identify subtasks.
   - At START create a new branch. Each time you visit a box add/commit/push evidence of what you did. Also use a meaningful commit comment. At FINISH merge branch.
   - Move Trello card to Done.

2. **check specifications**
3. **write/simplify tests**
4. **run tests**
5. **develop suspects**
6. **investigate suspect**
7. **implicated - attempt fix**
8. **run tests**

**Repeat until tests contain nothing extraneous**

If suspect cleared move on to next suspect.

If not all test pass, repeat as needed.

BASIC TOOLS: compiler, editor, make, criterion, git, gdb, Trello

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How to get a job.
Are there testing programs that mimic human interaction on a website / GUI?

- [https://developer.android.com/training/testing/instrumented-tests/ui-tests](https://developer.android.com/training/testing/instrumented-tests/ui-tests)
- [https://www.selenium.dev/](https://www.selenium.dev/)
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How to get a job.
How to test AI?

- https://deepchecks.com/how-to-test-llm-applications-before-releasing-to-production/
- https://towardsdatascience.com/testing-large-language-models-like-we-test-software-92745d28a359
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How to get a job

Do your homework!

🙂
How to get a job

Do your homework:

Determine expertise needed for different jobs
Update your resume: highlight your expertise: don't omit or embellish
Find out where/how/when to apply
Network - might get your resume looked at
Leverage internships, research experiences, etc.
Be flexible re: location, industry
Talk to student clubs (e.g. resume reviews)
Talk to career services
Side projects
Extracurriculars
Be professional
Have a plan B (and C, ... )