TODAY'S AGENDA

01
INTRODUCTIONS
Who are we?

02
ABOUT THIS CLASS
What we’ll cover in future lectures!

03
ADMINISTRIVIA
The good ol’ syllabus!

04
CHOOSING A PROJECT
Things to keep in mind
WHY CS 222?

To build a project, while learning about industry standards.

To understand how an industry-level system is designed, implemented, and tested.
INITIAL LECTURES

**GIT INTERNALS**
What’s Git, and how does it really work?

**IDEATION**
How can we come up with a good idea for a project, and draft it up?

**ARCHITECTURE**
What softwares already exist to make our project a lot easier?
### Design
- What should we consider when we need to make a user-facing application?

### Databases
- When should I use which database? How do I get set up?

### Debugging
- How do we debug and test software? What if our users find bugs we don’t?

### System Design
- How do we put all these pieces together to make a concrete app that scales with a lot of users?

### Robustness
- What problems can we run into when we make this app? How do we fix them?

### Presentation
- How do we effectively pitch an idea and showcase the usefulness of a technical project?
GRADING

60 Weekly Mentor Check-Ins

15 Final Presentation

10 Project Proposals

10 Checkpoint Quizzes

5 Group Assignments
CHECKPOINT QUizzes

Students are REQUIRED to complete at least 10 of the following (1% each, caps at 10%):

ATTEND LECTURE
Submit a (short) Canvas assignment that opens for a brief window during lecture.

SHOW KNOWLEDGE
Complete a post-lecture assignment that requires lectures (or equivalent knowledge).
CLASS PROJECT

- **Initial Project Proposal:** A basic problem statement, detailing the problem you’ll be solving.

- **Revised Project Proposal:** An updated problem statement, incorporating feedback from your mentor.

- **Weekly Check-Ins:** Meetings with mentor to ensure that your project is flowing smoothly.

- **Final Report:** Description of what your

- **Final Presentation:**
Project teams are released! (Stay on the lookout for sign-ups)

Project Proposal First Draft!

Final draft of project proposal due!

Project report and final video due! (~Late April)

Project presentations, and in-person fair! (~Finals)

Please note that these dates ARE subject to change, as we see fit.
HOW **NOT** TO CHOOSE A PROJECT

- “This hasn’t **ever** been done before and nobody has tried to do it, let’s do it!”
- “Let’s make a game!”
- “Let’s fix this real-world problem!”
- “We made this in [insert CS class] - let’s “make” it again!”
- “Let’s make a combination of Facebook and Google and Netflix and Spotify and Apple!”
- “Let’s make an app that students and teachers and engineers and doctors can use!”
- “We all know C++, so let’s look for projects we can make in C++!”

Note: These are just guidelines. Exceptions exist (talk to your mentor or one of us if you have questions).
HOW TO CHOOSE A PROJECT

- “This looks like a cool technology, let’s make something that uses it!”
- “I want to learn [insert language], so we can make something along those lines!”
- “Let’s make an app that [insert audience] can use to do [insert purpose]”
- “I’m interested in [insert field], so I’m going to make a project that’ll help me learn more about it!”
EXAMPLE PROJECTS

- An app that allows U of I students to manage their schedules better by putting all their assignments in one place
- A programming language for enhanced computation, and build a website that enables users to run it locally
- A Spotify tool that allows users to generate emotion analyses and find friends/new music!
- A Discord bot that allows users to communicate across servers, while maintaining anonymity!

Note that all of these have a niche purpose and a very specific problem they try to solve!
HOW TO BUILD A PROJECT

- Proof of Concept
- Prototype
- Minimum Viable Product (MVP)
- Iterative Development

(We’ll come back to this cartoon in later lectures, don’t forget it!)
THANKS!

Any questions?

Feel free to hang around after class or email us at cs222sp2023leads-group@office365.illinois.edu!