Project Planning

How to get started!

TODAY'S AGENDA

01 ANNOUNCEMENTS

02 DEV STYLES AND PLANNING TOOLS

03 MVP AND SCHEDULE

Including an example

04 TIPS ON TEAMWORK

05 CHOOSING A PROJECT ACTIVITY

- Dev styles
- Project planning tools (issues, kanban board)
- Tips on picking an mvp and schedule
- Leadership? Skills (conflict resolution)
- Example project proposal
- Activity - evaluating plans
    - Assigning difficulty/time of a task? (time is difficult)

ANNOUNCEMENTS!

- Team formation form: Feb 1st
- Project Proposal First Draft - Feb 8th (final draft - Feb 15th)

THE DEVELOPMENT METHODOLOGIES

- A variety of strategies of software development (how to split up work among team, how to split up project into tasks, how to split up time for each task/what to work on each week, etc.)
- Each strategy has pros and cons, can incorporate different parts that fit your team's dynamics and goals
- Adjust your strategy as you go along
- We'll cover two of the most popular methodologies, read more about them here;
    - *https://www.uptech.team/blog/software-development-methodologies*

THE DEVELOPMENT METHODOLOGIES - Agile Development

- Assign tasks to “sprints”, or constant stretches of time (~1-3 weeks). Team will meet at least once every sprint, constant communication
- Constantly test and ask for user feedback, work on project iteratively
- Variations on Agile - Rapid Application Development (constantly re-working a prototype), Scrum (shorter, more efficient springs with assigned scrum master)

Pros:

- Clear and useful team communication
- Iterative development process reduces mistakes

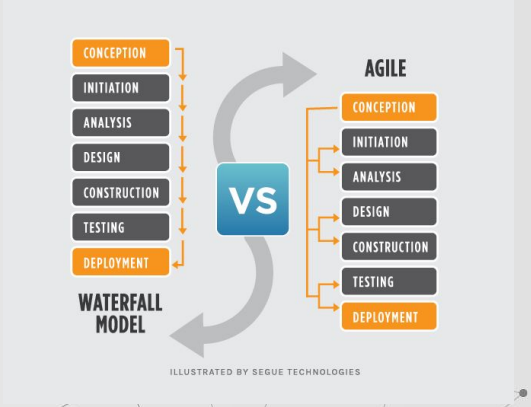
Cons:

- Suited for a large number of small, rapidly changing tasks (doesn’t fit all project requirements)
- Requires developers to work independently for extended stretches

https://www.uptech.team/blog/software-development-methodologies

THE DEVELOPMENT METHODOLOGIES - Waterfall Development

- Tasks are completed in sequential phases (often described in a Gantt chart)
    - Ex: (Brainstorming, Designing, Coding, System Tests, Bug fixing, Deploying)



Pros:

- Simple, easy to implement for beginners
- No room for miscommunication, everyone always on the same page
- Requires full project be scoped out ahead of time

Cons:

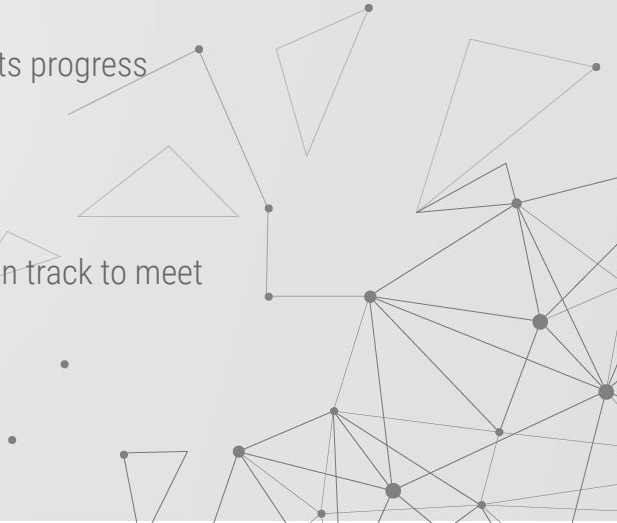
- Inflexible, not suited for complex projects that require re-thinking as you go
- Doesn't incorporate feedback/testing in early stages
- Requires estimating time per task!

https://www.uptech.team/blog/software-development-methodologies

YOUR PROJECT PLANNING TOOLKIT

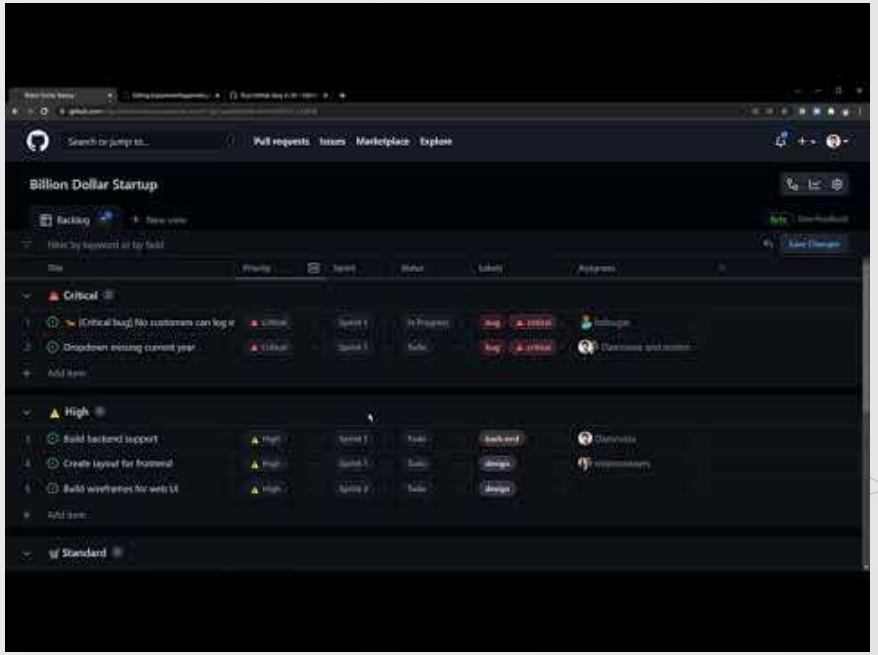
- Several online tools to break down project into
    - tasks (ex. ‘finish frontend homepage’, ‘setup database’)
    - features (ex. ‘add back button to header’, ‘implement form validation’)
    - bugs (ex. ‘fix inconsistent styling’, ‘figure out broken submit button’)
- Collectively called issues
- Once an issue has been created, assign it to a developer and keep track of its progress

- Why?
    - Won’t lose track of any required work
    - Easier to prioritize tasks, plan out what to work on each week, stay on track to meet deadline
    - More rewarding to see tangible progress
    - Industry standard



YOUR PROJECT PLANNING TOOLKIT

- Popular choice - GitHub Projects (stop at kanban board)



https://github.com/features/issues, https://docs.github.com/en/issues/tracking-your-work-with-issues/quickstart

YOUR PROJECT PLANNING TOOLKIT

- Alternatives
  - Trello - very visual tool, create customized Kanban boards
  - Asana - “all-in-one” type tool, integrates well with GitHub, Google Drive, etc.
  - Honestly just a Google Doc/Spreadsheet/Notion page with a list of tasks
- Tip: *don’t* overcomplicate this part! (avoid high-learning-curve tools like Jira - not needed!)

- Tip: treat each week as a sprint, and the weekly check-in as a stand-up meeting. At every weekly check-in,
  - evaluate what tasks have been completed and what is taking longer than expected.
  - Go through any blocks, help each other out
  - Decide what needs to be done next week. Keep a list of ‘weekly tasks’, including who they’re assigned to, very easily accessible

PICKING AN MVP

- REVIEW: what is an MVP?
  - Minimal Viable Project = bare-bones of a project, with only the features needed to satisfy the problem statement.
  - So minimal UI, no bells-and-whistles type features, less edge-case handling
- Why?
  - Picking an MVP helps with timeline (more in a bit)
  - Prioritization of tasks - keeping the end goal in mind when making early decisions
- Examples
  - A suitcase - a box that opens and shuts with a clasp, with wheels
  - VS Code - a desktop application that opens code files in an editing environment, with a terminal on the bottom and a file explorer on the side
  - Google - a web app with a search bar that takes text and searches through a database of all website titles

https://www.learningguild.com/articles/2308/mvp-is-the-key-to-agile-project-management/

PICKING A PROJECT TIMELINE

- Once you've split project into tasks, categorize them into
  - Setup
  - MVP
  - Bells-and-whistles
  - Reach for the moon
- Try finishing the setup as early as you can - everyone should start on the same page, "dev env issues" should be resolved ASAP
- Aim to complete MVP ~60-75% into the timeline
- Allocate time for testing and resolving bugs
- Reserve buffer time near the end! Especially important to allow for flexibility
  - if you're learning a new technology, allow for flexibility
  - if you want to incorporate user feedback into project
  - if you're new to estimating time for tasks - this is almost always an underestimate

https://www.atlassian.com/work-management/project-management/project-planning/timeline

TEAMWORK SKILLS

- **COMMUNICATION COMMUNICATION COMMUNICATION**
    - Don’t silo yourself (it sucks)
- Use GitHub correctly!
- (Giving and Receiving) Feedback is important
- **Conflict Resolution:** Think as the user, not as a programmer
- It’s okay to not know something
- Did I say communication?

AN EXAMPLE PROJECT PROPOSAL

- Just a guideline (as usual)

PROJECT PLAN EVALUATION - TEAM ACTIVITY

THANKS!

Any questions?

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