Lecture 3: September 13

Project Planning: Planning in Practice

Agenda

- Mentor Intros

- Trello & Google Drive Setup

- Lecture: Planning in Practice
  - Defining the product
  - Creating a stack ranked backlog
  - Roadmap and Gantt Charts
  - How to plan for Alpha-Beta-Final demos?
  - Roles: Scrum Owner, Project Manager, Program Manager

Katie Stasaski, GW '16

Katie Stasaski graduated from GW in 2016, where she worked on research at the intersection of NLP and Education with Professor Rahul Simha.

After GW, she completed her Ph.D. at UC Berkeley in 2022, where she researched conversational dialogue systems and educational question generation.

She is currently an Applied Scientist at Salesforce AI Research, where she works on automatic code generation.

Brannon McGraw, GW '15

Hello! My name is Brannon, I was in the class of 2015 and since graduating I have spent my career in the information security operational space.

My direct experience is in threat hunting, security operations, incident management, and red and purple teaming.

That being said, I am familiar with all of the roles and responsibilities that exist within a mature InfoSec department.

Jennifer Wright, GW '20

Hello, I'm Jen, a proud member of the class of 2020. Over the past three years, I've embarked on an exciting journey as a client engineer at Apple.

My role has exposed me to all the exciting platforms—iOS, watchOS, tvOS, and macOS. During this time, I've honed my skills in crafting intuitive user interfaces and collaborating cross-functionally. I'm currently based in the vibrant San Francisco!

Outside of work, I also treasure adventures beyond the screen. You'll frequently find me exploring national parks, indulging my love for hiking, climbing, and trail running. Yosemite is my favorite so far!

Aaron Coplan, GW'19

I graduated from GW in 2019 with a bachelors in CS. Since then I've been working as a Software Engineer at Facebook/Meta for the past 4 years.

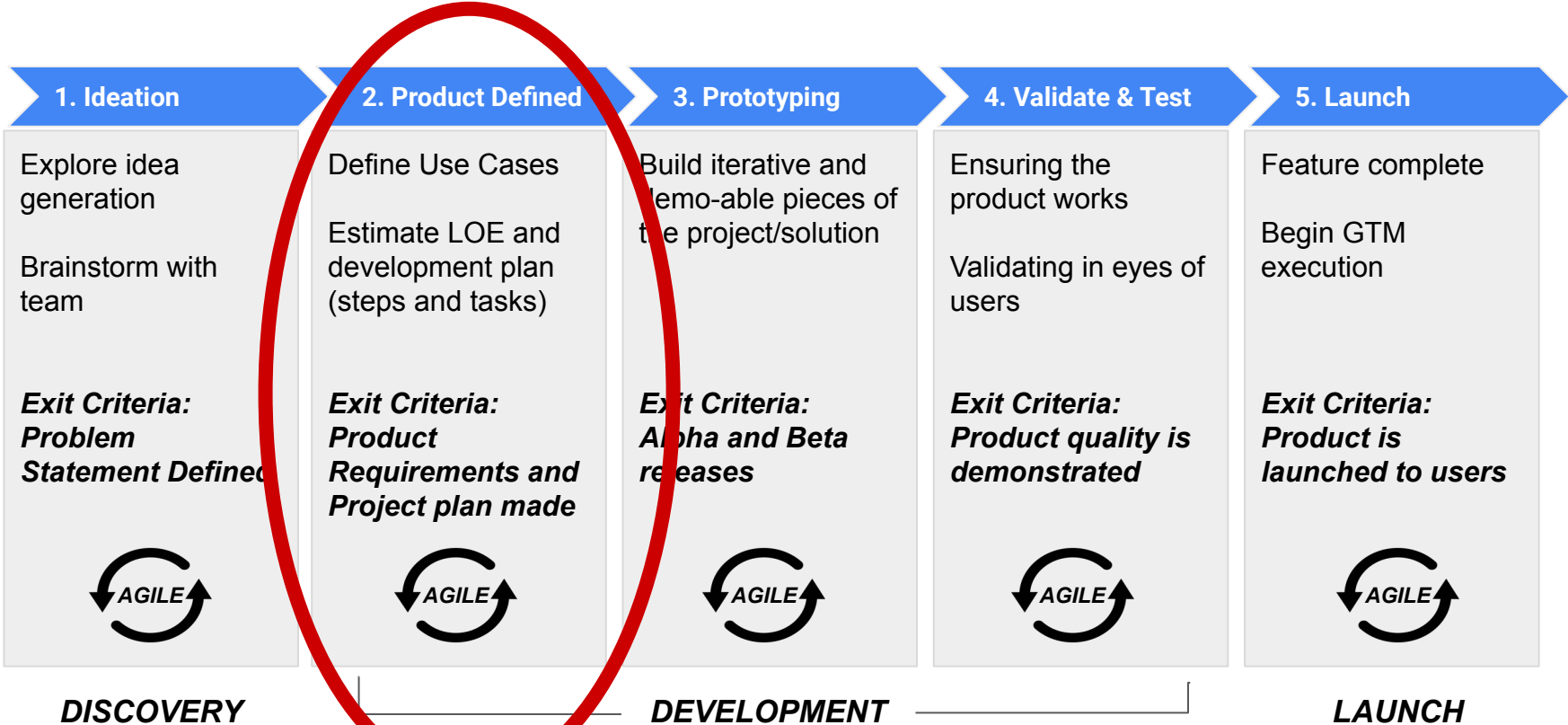In my free time I enjoy playing and watching tennis!

Trello Setup

1. Make a workspace for your team! Name it your team name.
2. Generate invite link and paste it in your team slack channels
   a. Team members, mentors, and instructors will use this link to join your workspace
3. Make a copy of the September board **per person**
   a. **https://bit.ly/sd-2324-trello-sept**
4. Create a backlog board

Google Drive Setup

1. Create a folder for your team – please name it your team name
2. Share the folder with:
   a. Team members
   b. Mentors
   c. Instructors
3. Use this for design docs, presentations, collaboration with mentors, etc

Product Definition Phase

1. Ideation	2. Product Defined	3. Prototyping	4. Validate & Test	5. Launch
Explore idea generation	Define Use Cases	Build iterative and demo-able pieces of the project/solution	Ensuring the product works	Feature complete
Brainstorm with team	Estimate LOE and development plan (steps and tasks)		Validating in eyes of users	Begin GTM execution
Exit Criteria: Problem Statement Defined	*Exit Criteria: Product Requirements and Project plan made*	*Exit Criteria: Alpha and Beta releases*	*Exit Criteria: Product quality is demonstrated*	*Exit Criteria: Product is launched to users*
AGILE	AGILE	AGILE	AGILE	AGILE

DISCOVERY　　　　　　　　　　*DEVELOPMENT*　　　　　*LAUNCH*

Exit Criteria: PRD and Gantt Chart

Product Requirements Document

Section 1: Proposal

Section 2: Specs

Section 3: Considerations, Constraints, Dependencies

Section 4: Open Questions

Section 1: Proposal

Your elevator pitch to your team, stakeholders, investors, etc.

- **Goals**

  What are you hoping to accomplish? What does Success look like?

- **Users**

  Who are you building for?

- **Use Cases**

  What will the user be able to do once you reach Success?

- **Background & Strategic Fit**

  What context is needed to understand your idea? How is your product different?

Section 2: Specs

The meaty "what" section to describe the work to be done.

- User Stories & Requirements
    - Features and functions from a user's perspective

- UX Flow and Designs
    - Mockups
    - Flow Diagrams

- System and Environment Requirements
    - Web or Mobile?
    - OS needed?
    - Libraries or other tooling needed?

Section 3: Considerations, Constraints, Dependencies

Giving awareness into all aspects of the project.

- Define your "non-goals"
- Limitations to be aware of
- Outside factors that would affect the project outcome
- Other team's or individual's work that must be complete beforehand
- Risks

Section 4: Open Questions

Central location for all team members and stakeholders to unblock each other and move the project forward. Helps with transparency into blockers/risks.

- What else do you need to know? Known unknowns & unknowns unknowns?

- Do you need help or answers from other teams or stakeholders?

Project Plan: Gantt Chart

Task Name	Q1 2019			Q2 2019		Q3 2019
	Jan 19	Feb 19	Mar 19	Apr 19	Jun 19	Jul 19
Planning	▓▓▓▓▓▓▓▓					
Research		▓▓▓▓▓▓				
Design			▓▓▓▓▓▓			
Implementation				▓▓▓▓▓▓▓▓▓		
Follow up					▓▓▓▓	

GIST Framework

GIST: Goals, Ideas, Steps, Tasks

Goals: What are your goals?

Ideas: What are your ideas to achieve your goal?

Steps: What are the *steps* to complete your idea?

Tasks: What are the *tasks* to completing that step?

Project Planning using GIST

What are your *goals*?

- Provide users with walking directions that factors in environmental safety

What are your *ideas* to achieve those goals?

- Front end app
- Routing algorithm + safety score

GIST: Steps and Tasks

What are the *steps* to complete your idea?

- Set up Android app

- Implement Google Maps API

- Build safe routing algorithm

- Connect app to server/DB

What are the *tasks* to completing that step?

- Android App:
  - Build profile/login/logout capabilities for mobile user
  - Build activity for Social page
- Google Maps API:
  - Get Google Maps API keys and integrate
  - Test Google Maps API
- Routing algorithm
  - Research safety scoring
  - Research routing algorithms & apis
  - Integrate safety scores into routing function
  - Build and test
- Server/DB
  - Set up server
  - Connect and test with routing algorithm and Android app

Task

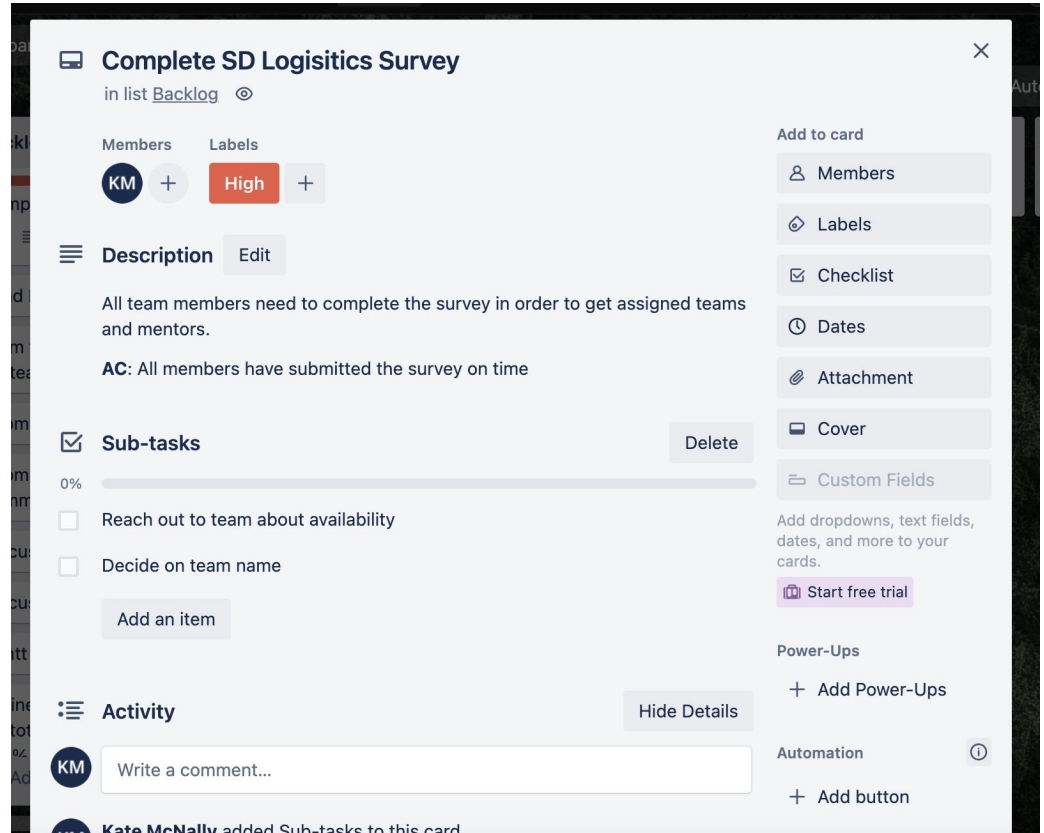*Lowest level of work to be done towards completion of the project*

Description/Background

Assignment

Sizing*

Acceptance Criteria

Code Review**

Building the stack-ranked backlog

GOAL	IDEA	STEP	TASK
Optimize Walking Directions	Android App	Setup App	Build Home
Optimize Walking Directions	Android App	Setup App	Build Profiles
Optimize Walking Directions	Android App	Google Maps	Get API Keys
Optimize Walking Directions	Android App	Google Maps	Show Map on app
Optimize Walking Directions	Android App	Social Feed	Build table for feed
Optimize Walking Directions	Android App	Social Feed	Set table data source to get all user's friends' activity
Optimize Walking Directions	Routing Algorithm	Algorithm	Research safety algo.
Optimize Walking Directions	Routing Algorithm	Algorithm	Research routing algo.
Optimize Walking Directions	Routing Algorithm	Algorithm	Implement routing with safety score
Optimize Walking Directions	Routing Algorithm	Algorithm	Test with dummy data
Optimize Walking Directions	Routing Algorithm	Server/DB	Implement server
Optimize Walking Directions	Routing Algorithm	Server/DB	Connect algorithm to app

Reviewing and Sizing (story points / t shirt sizes)

Gauge relative effort of tasks to facilitate better planning, prioritization & tracking of work

- **Promotes relative sizing:** compare tasks relative to each other instead of by time estimates
- **Reduces pressure for exact time predictions:** time estimates are hard
- **Enhances collaboration**: encourages members to discuss task complexity up front
- **Facilitates iteration planning:** helps teams schedule balanced workloads

Reviewing and Sizing

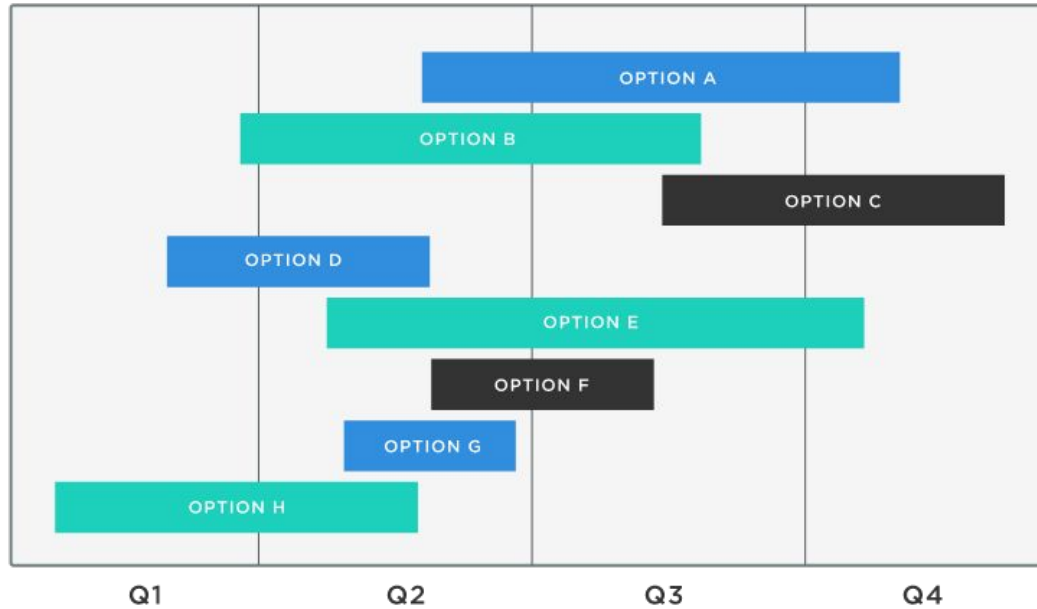T-Shirt Sizing

Fibonacci Pointing System

Size	Pointing Point	Weeks
XS	1	0.25
S	2	0.5
M	5	1
L	8	2
XL	13	3

Put it all together

Goal	Idea	Step	Task	Points	Start Date
Optimize Walking Directions	Android App	Setup App	Build Home	2	October 1
Optimize Walking Directions	Android App	Setup App	Build Profiles	3	October 15

execution						Fall			Spring			
shaping	Epic		Development readiness	# of dev Sprints	% COMPLETE	October	November	December	January	February	March	April
Goal	Idea	Steps	Status	t-shirt								
Waze for Walking	Android App	Build Home	In Progress	1	10%							
Waze for Walking	Android App	Build Profiles	To do	1.5	0%							
Waze for Walking	Android App	Connect Algorithm		0.75	0%							
…	…	…	…	…	…							

Gantt Chart - Negotiating Timelines

Creating a stack-ranked backlog

What is everything that you could possibly do for the project?

What are the dependencies?

    Will you need to use another library?

    Is there an order to which the work has to be done?

What are the priorities?

    Is everything important to build?

    Can you determine which are requirements vs nice-to-have?

[(Review Gantt Template)](#)

Team Workshop

Create a Backlog for your project using the template provided on the site

Team Workshop

Create a Gantt chart for your project using the template provided on the site

User Story

User experience/behavior that you are building

Background

User Story

"As *<user persona>*, I would like to ___ so that I can ___"

Success Criteria

Testing

Documentation/Published Update

User Story Example

User Story

"As an android user, I would like to enter a start & end destination so that I can get walking directions."

Success Criteria

- User is able to enter start & end locations
- Routes are generated based on input location
- Routes are walkable (not too long, not logistically dangerous)

Team Workshop

Your own user story: Break down a user story for your project

Alpha → Beta → Final (GA)

Alpha

"Initial MVP of value"

Beta

"You can take on more customers, but not everyone"

Final (GA)

"Everyone can use it"

When to know if it's ready for Alpha, Beta, or GA; "Drawing the line" on stack rank

Roles: Scrum Owner

Who? Roles and Responsibilities?

- Helps create Gantt chart and guide team in setting project plans

- Updates and Manages roadmap/project planning

Industry?

- Software, technology

Roles: Project Manager

Who? Roles and Responsibilities?

- Helps create Gantt chart and guide team in setting project plans

- Updates and Manages roadmap/project planning

Industry?

- You can find this role at almost any company, no matter the product, project, or team

Roles: Program Manager

Who? Roles and Responsibilities?

- Similar to Project Manager but overseeing larger portfolio of projects

Industry?

- Big organizations have "Programs" to manage products and projects

Reminders

- Meet with your mentors tonight*
    - Discuss project ideas & identify scope
- Next week
    - No lab; we'll schedule mock interviews over the next few weeks
    - Start meeting with mentors regularly
- Deliverables & Due Dates
    - Add mentors + instructors to trello & google drive
    - Copy September trello board into team workspace (one per individual)
    - Draft project proposal due 9/17
    - Start thinking about list of equipment/resources

Draft Project proposal (due 9/17)

- Team submission
- 3 slides
    - Overview of the project
    - Algorithmic challenges
    - Technical challenges/technologies used
- No need for diagrams/images, slides are just a way to structure your thoughts