Contextual Inquiry and Task Analysis

Chris Ponce de Leon, Thuy Ny Le, Howon Lee

kindergarten

Providing the basics you need to succeed.

Value Proposition

kindergarten will allow instructors to quickly gather feedback and questions from their students. It will also make office hours more organized and rewarding for both students and instructors.

Team Members

Chris Ponce de Leon
Design - User Testing

Thuy Ny Le
Team Manager - Design

Howon Lee
Development

Problem

Students get confused.

Students go through many hoops to get un-confused.

Instructors waste time answering redundant questions.

Instructors also have no efficient and effective way to get feedback on student understanding.

Solution Overview

- To optimize the process of answering students questions
- Improve communication and feedback between instructors and students

Who are our customers?

Students

Instructors

Students

Background
- Stanford engineering undergraduates
- Live on campus
- First-adaptors and promoters of new technology

Skills
- Technologically savvy
- Above average problem solving skills

Work Habits
- Varies (procrastinates, last minute, immediately done)
- Super active and busy schedule

Instructors

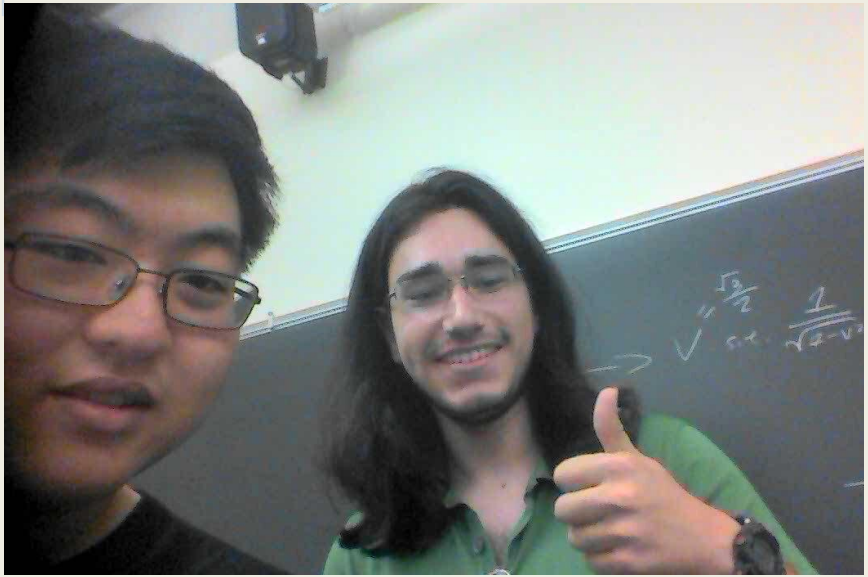
Background:
- Either graduate students or professors at Stanford University
- Might have other side commitments (i.e. research, industry jobs, etc)
- Usually live further away from campus so are not always available

Skills:
- Technologically savvy
- Can explain concepts well (for the most part)

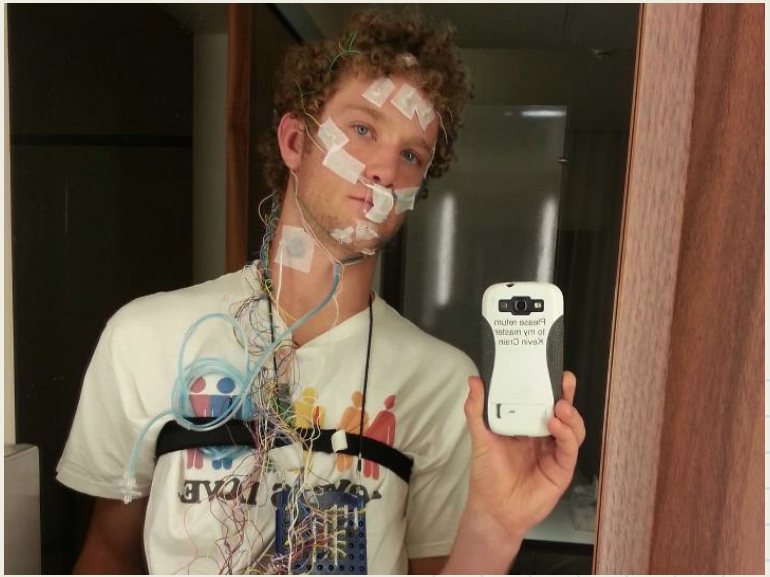
Work Habits:
- Outside of Office Hours, very few spend time answering student questions

Who We Interviewed

Hart Goldman, Physics 70 TA

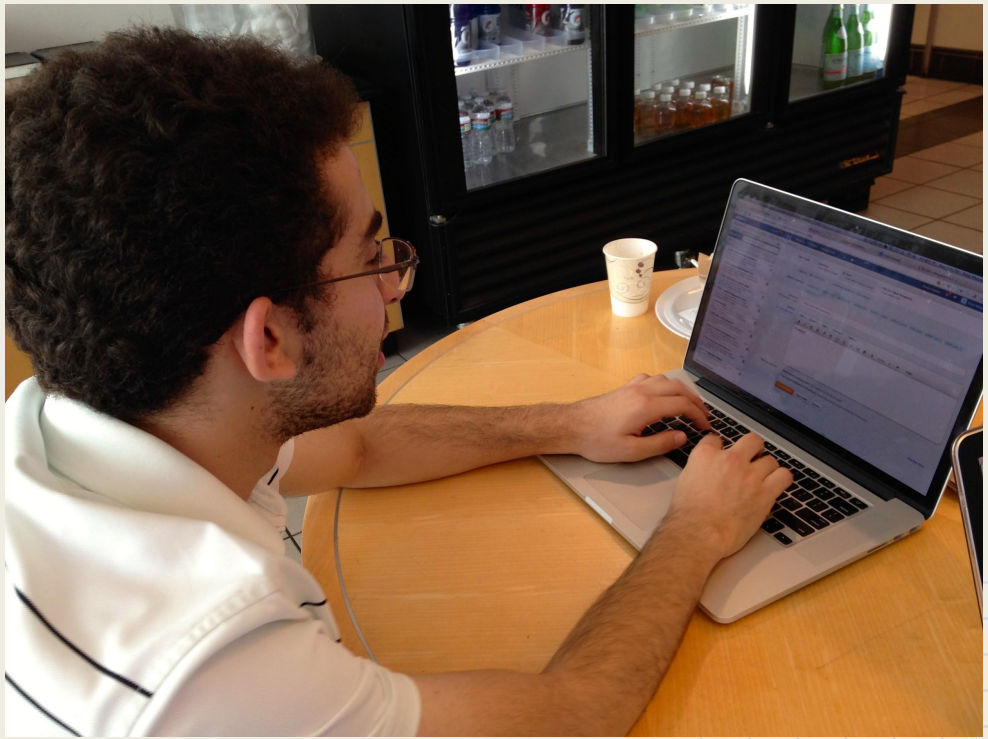


Kevin Crain, CS103 TA



Who We Interviewed

Firas Abuzaid
CS145 Head TA
Applied master-Apprentice inquiry while he answered questions on Piazza.



Percy Liang
CS 221 Professor
Applied Master-Apprentice inquiry while he conduct OH.

Who We Interviewed

Maneesh Apte, Student in CS107 (Not pictured)
Ben Zhou, Student in Physics 70 (Not pictured)

Task Analysis

Students

- Students' priorities are to learn the material and earn a good grade.

- Individual smaller tasks that students perform to reach those goals include:
  - Working on an assignment or problem set.
  - Asking questions if confused either through Office Hours or Piazza
  - Working with peers and instructors to check work

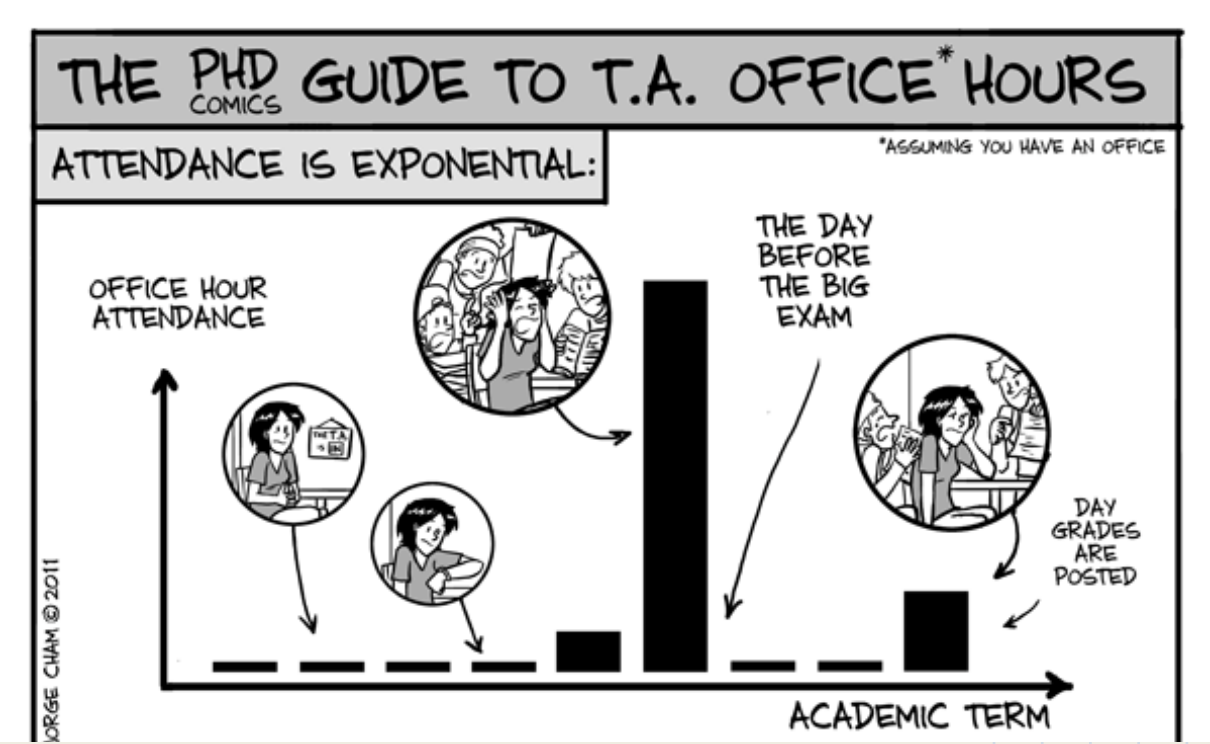
Task Analysis

Instructors

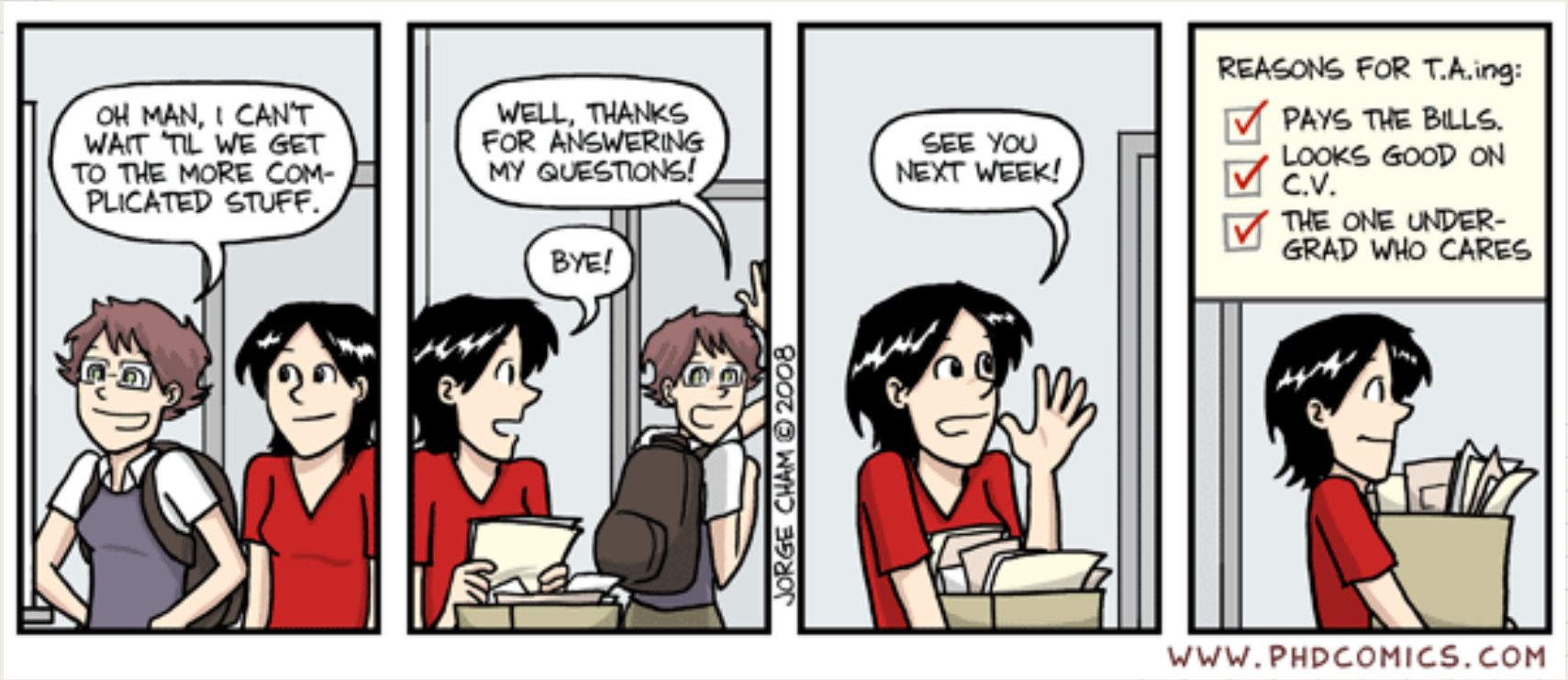
- Most important tasks to instructors:
  - Teaching material in lecture and sections
  - Distributing materials and grades
  - Providing valuable Office Hours
  - Getting good feedback from students

- Less important tasks to instructors:
  - Answering questions via email and Piazza
  - Referring students to extra resources
  - Consolidating similar and redundant questions on Piazza

Task Analysis



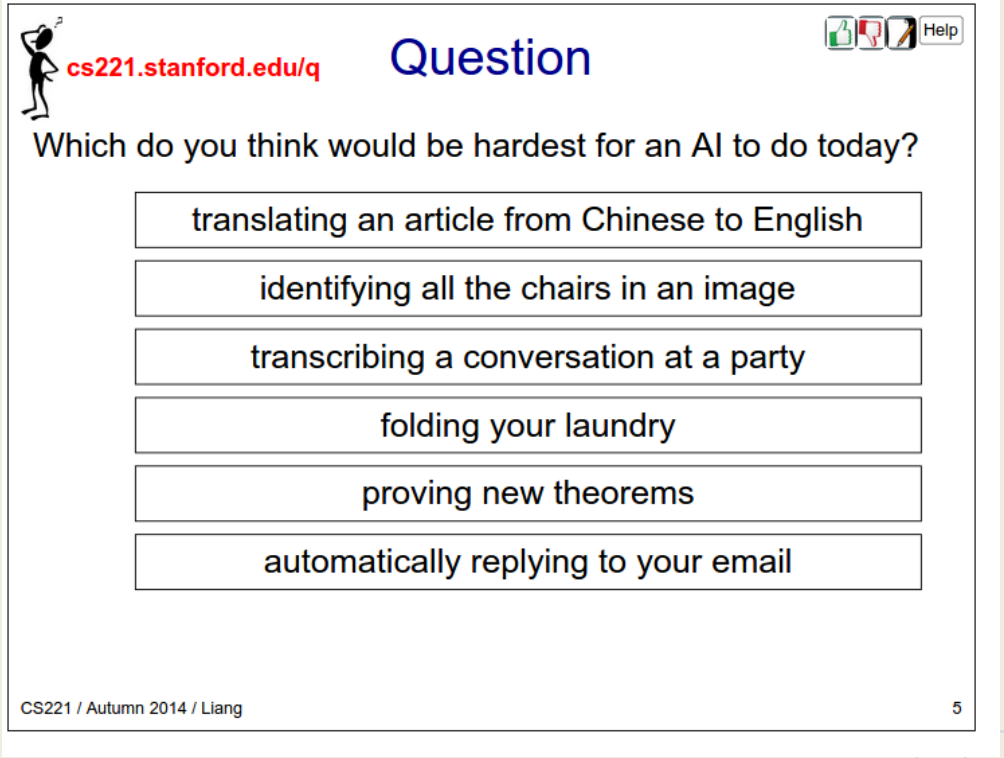
Task Analysis



Desired Tasks

1. Organizing Office Hours
2. Gathering student feedback regarding the class
3. Working together with peers to learn the material and ask questions.

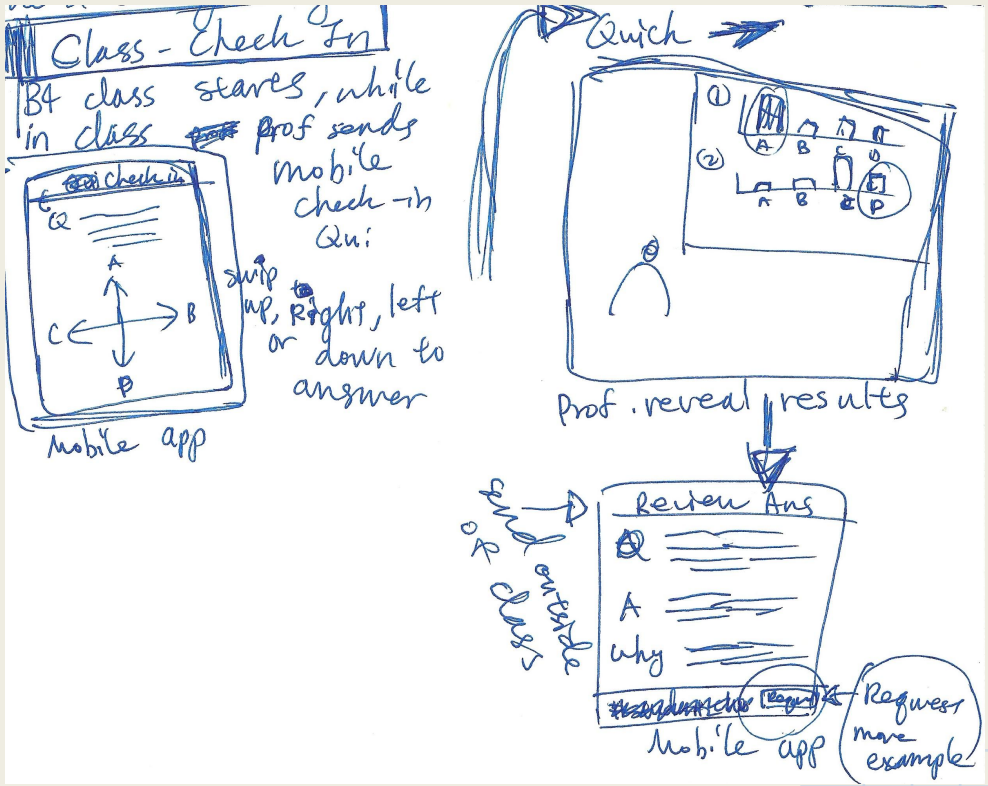
Existing tools



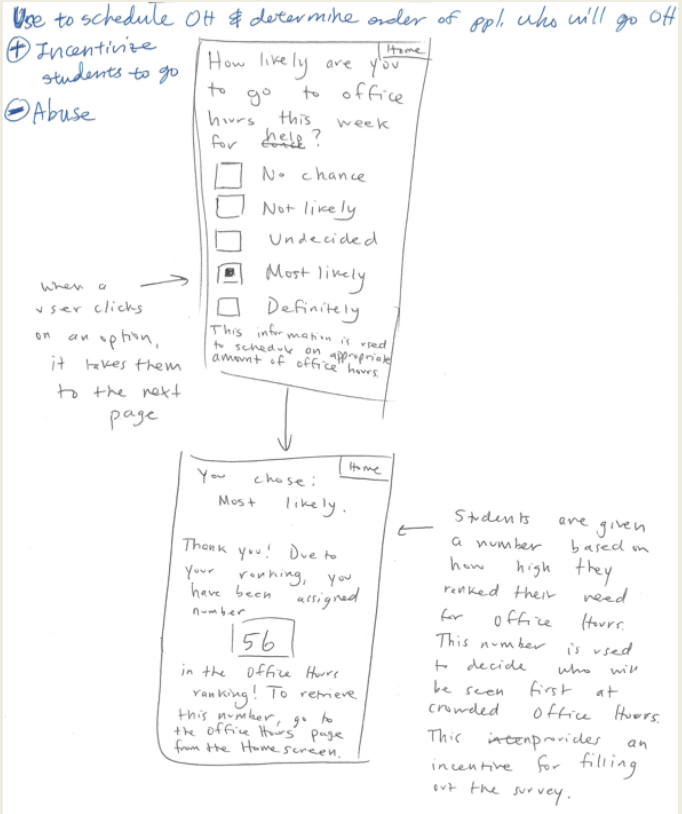
More Task Analysis Questions

- How will users learn new tasks?
- Where are tasks performed?
- How do users communicate with each other?
- With what frequency do users perform the tasks?
- What are the time constraints on the tasks?

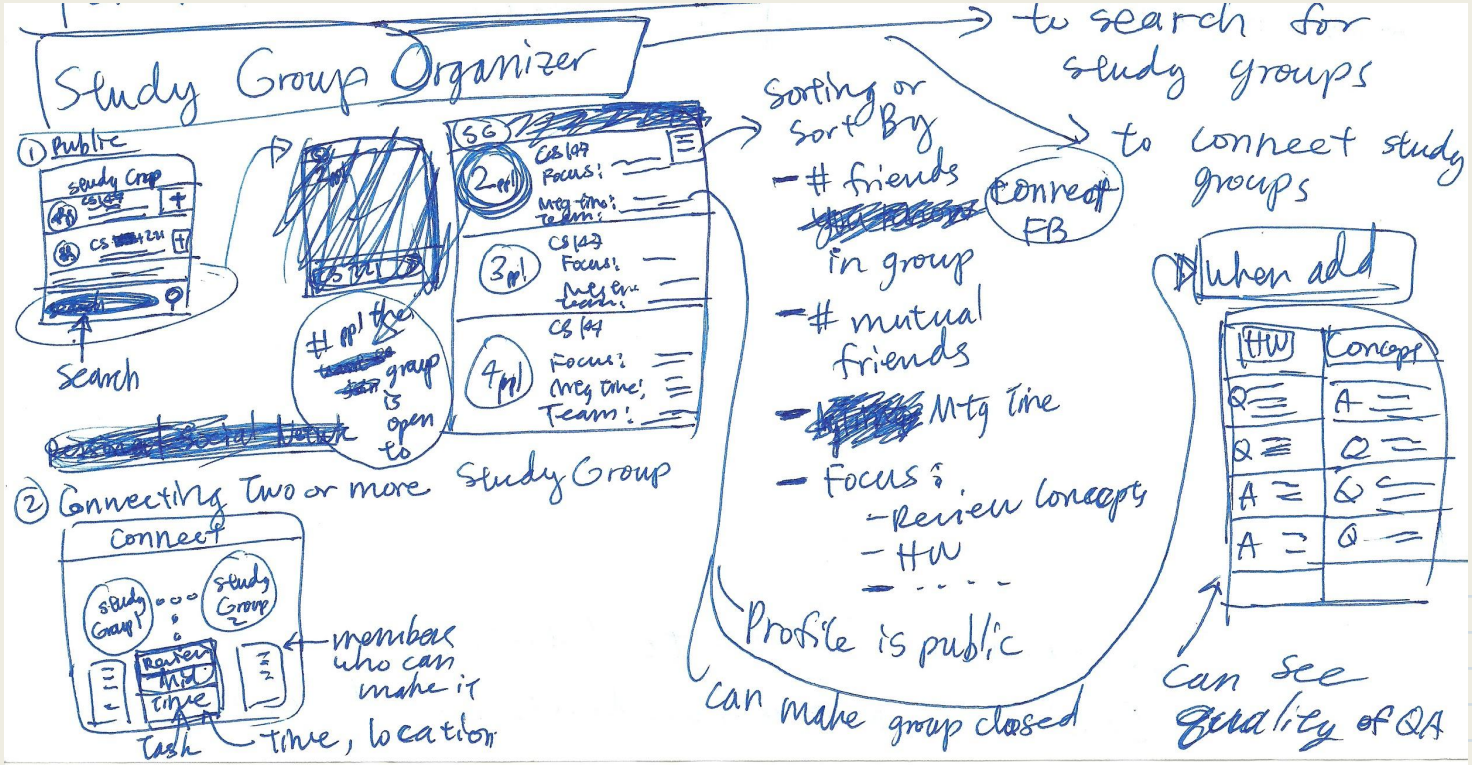
Best Application Ideas



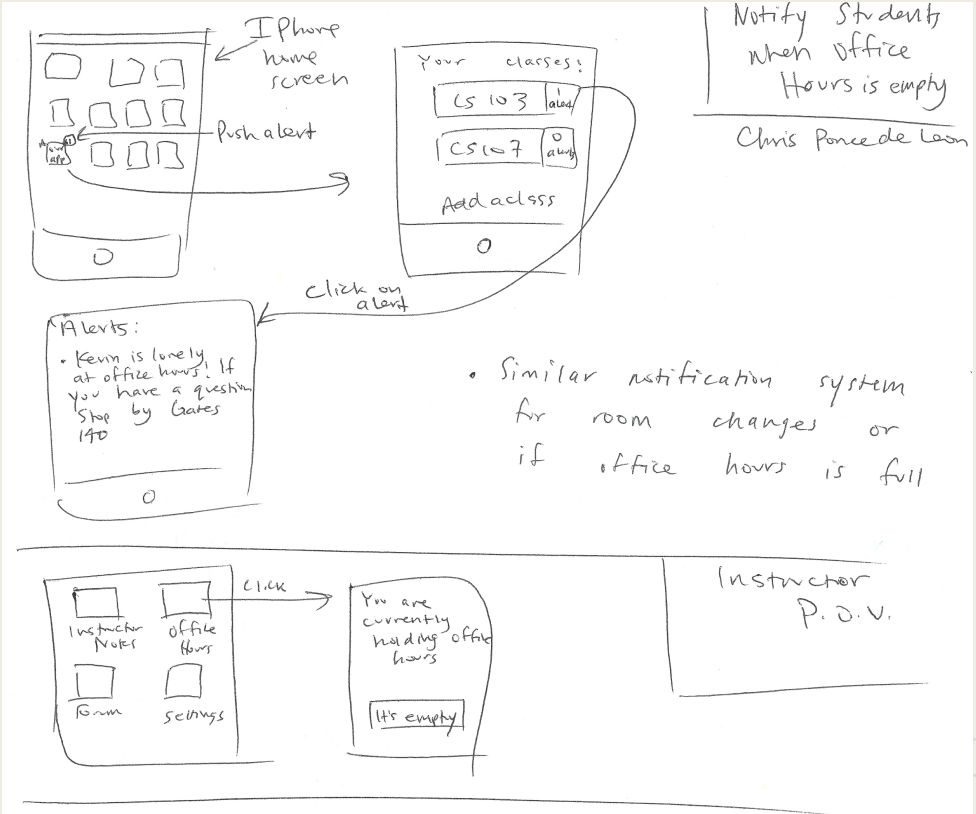
Best Application Ideas



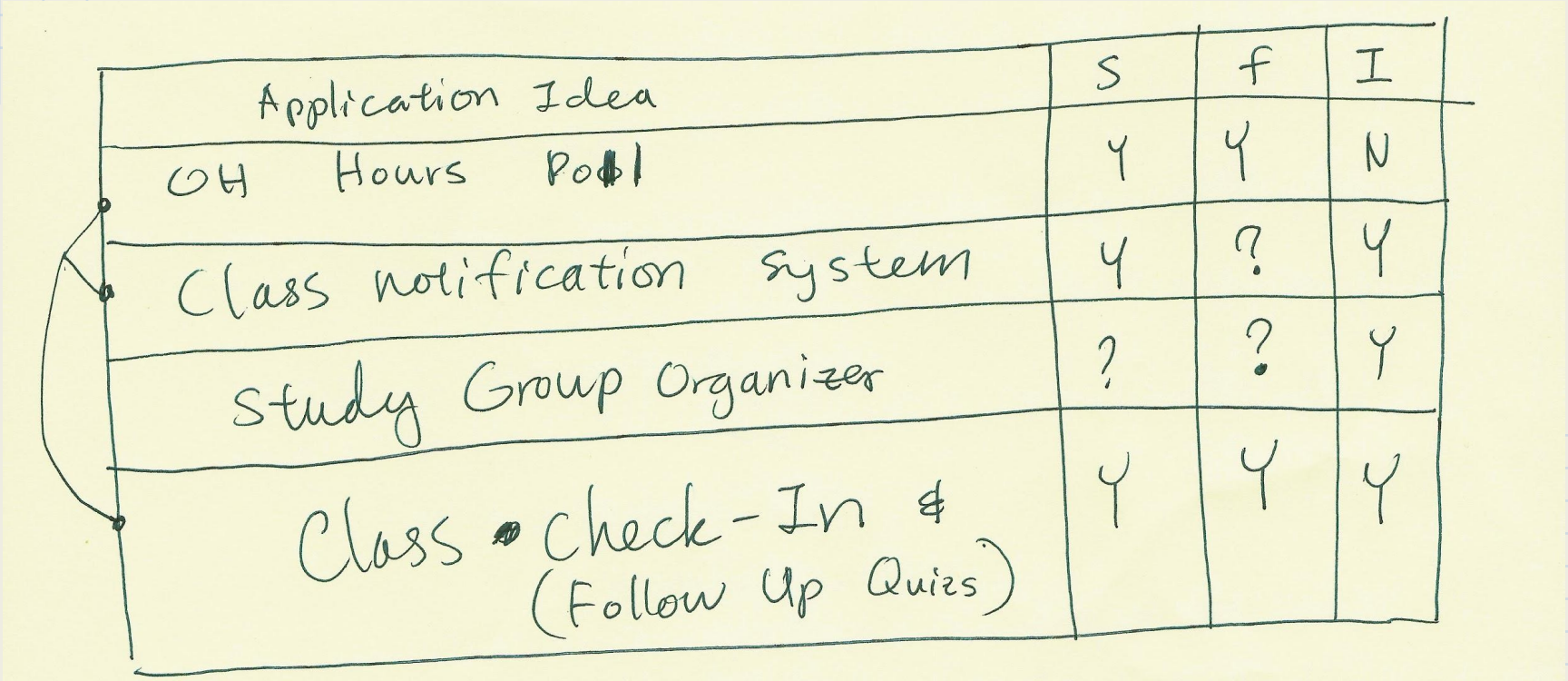
Best Application Ideas



Best Application Ideas

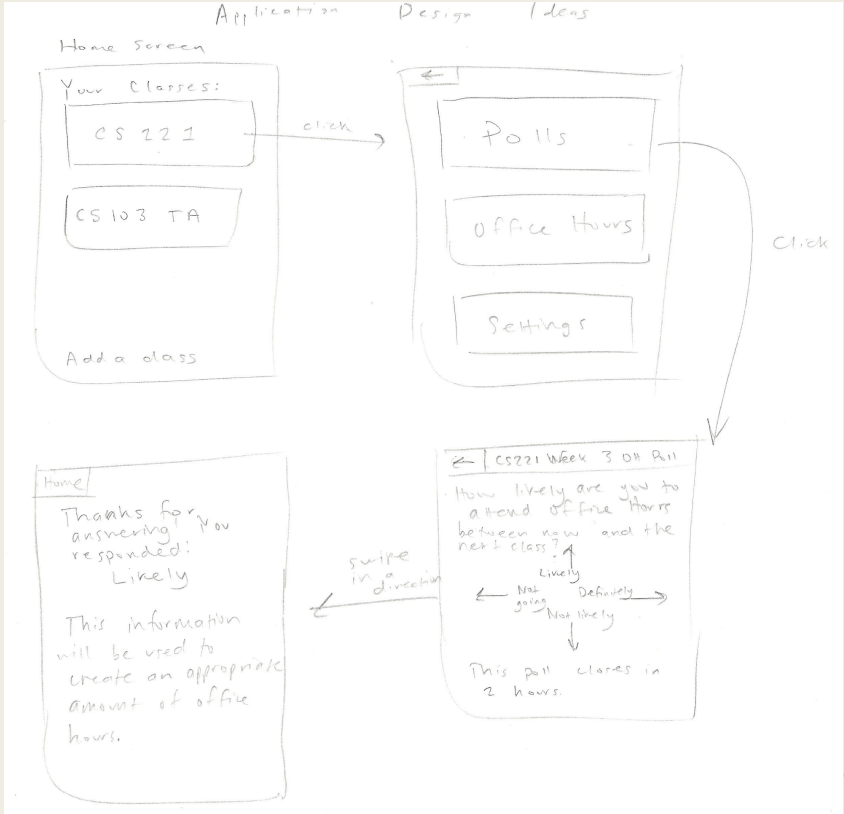


Significance v. Feasibility v. Interest

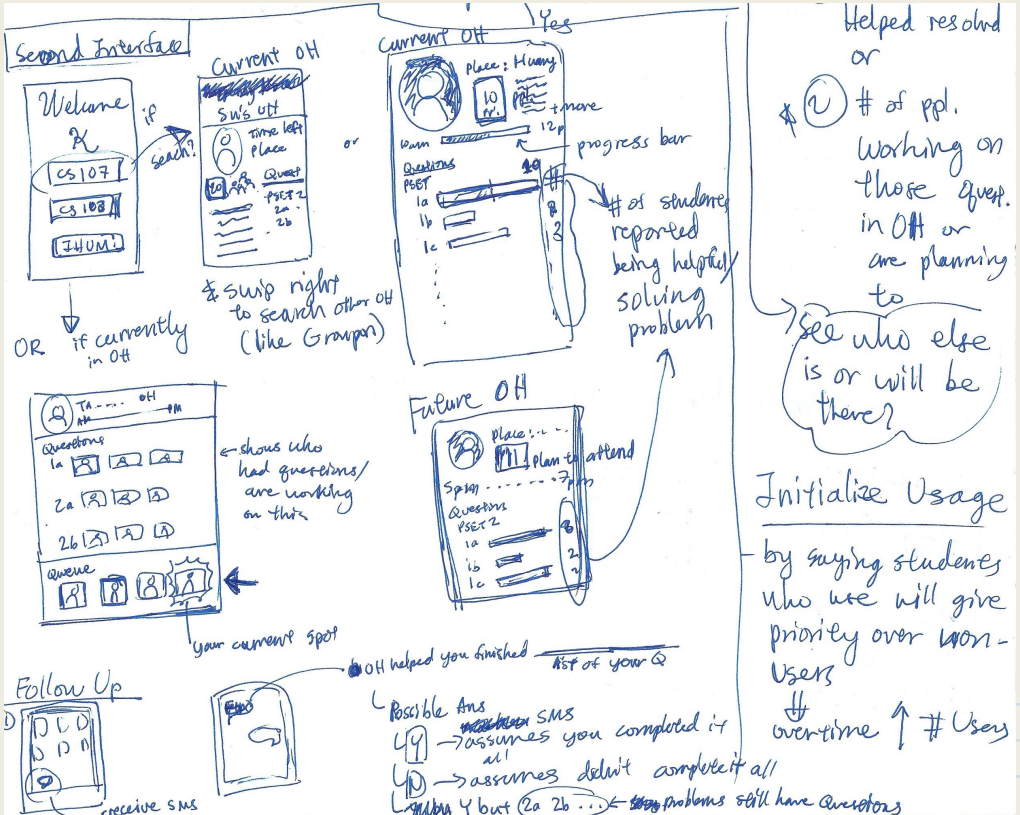


Application Idea	S	f	I
OH Hours Pool	Y	Y	N
Class notification system	Y	?	Y
Study Group Organizer	?	?	Y
Class Check-In & (Follow Up Quizs)	Y	Y	Y

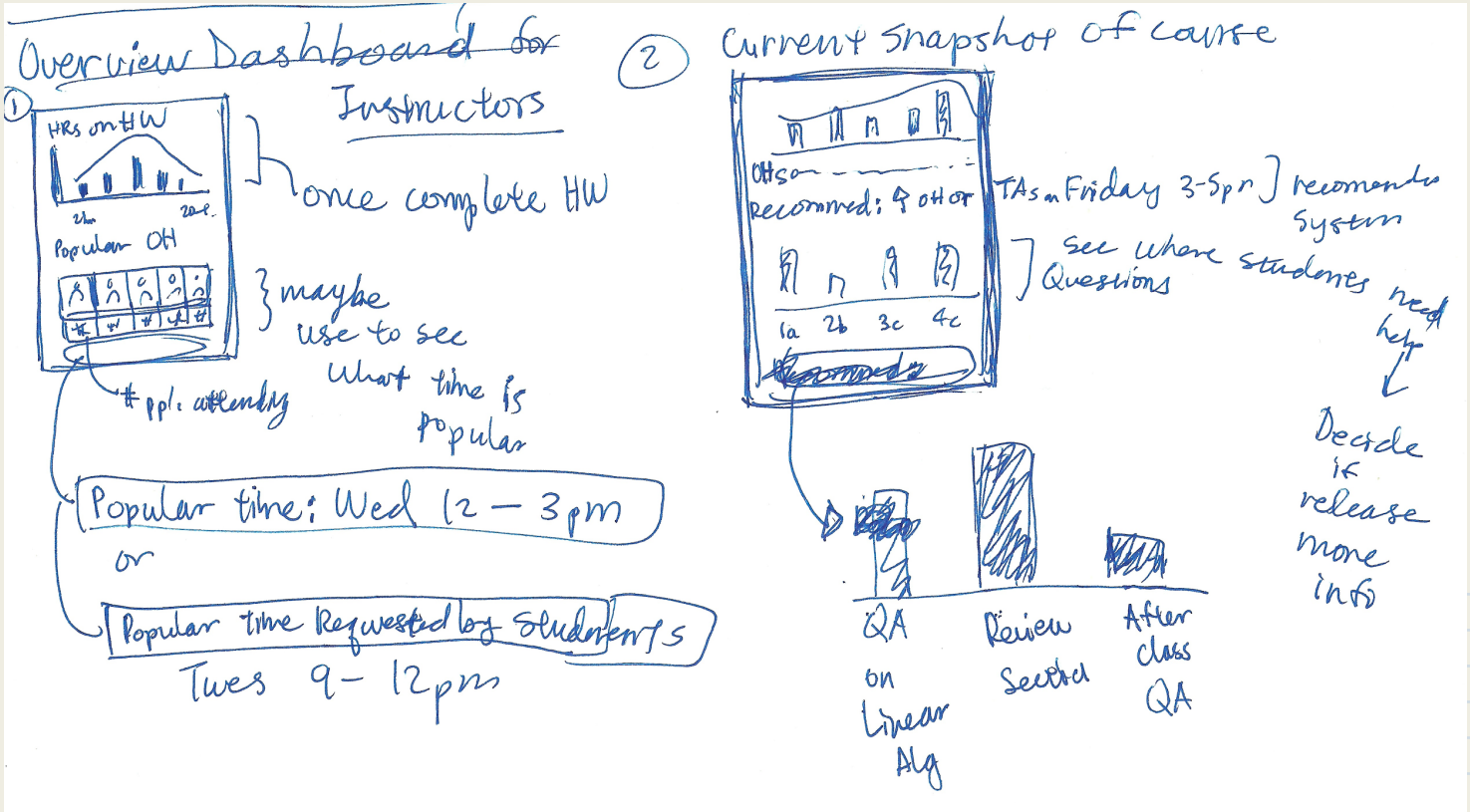
Sketches


Application Design Ideas
Home Screen
Your Classes:
CS 221
CS 103 TA
Add a class
click
Polls
Office Hours
Settings
Click
CS221 Week 3 OH Poll
How likely are you to attend office Hours between now and the next class?
Likely
Not going
Definitely
Not likely
This poll closes in 2 hours.
swipe in a direction
Home
Thanks for answering. You responded:
Likely
This information will be used to create an appropriate amount of office hours.

Sketches


Second Interface
Welcome
CS 107
CS 103
JHUM.
if search?
Current OH
SW's OH
Time left
Place
Quest
PSET 2
2a
2b
or
& swip right to search other OH (like Groupon)
OR if currently in OH
Current OH
Yes
Place: Hunny
10
+more
12p
progress bar
Questions
PSET
1a
1b
1c
# of students reported being helpful/ solving problem
Helped resolved
or
# of ppl. working on those ques. in OH or are planning to
See who else is or will be there?
Initialize Usage
by saying students who use will give priority over non-Users
overtime ↑ # Users
Future OH
Place:
Plan to attend
5pm
7pm
Questions
PSET 2
1a
1b
1c
TA
OH
PM
Questions
1a
2a
2b
Queue
← shows who had questions/ are working on this
your current spot
Follow Up
receive SMS
OH helped you finished
list of your Q
Possible Ans
SMS
→ assumes you completed it all
→ assumes didn't complete it all
& but 2a 2b ... ← problems still have questions

Sketches


Overview Dashboard for Instructors
1
HRs on HW
Popular OH
once complete HW
maybe use to see what time is popular
ppl attending
Popular time: Wed 12 – 3pm
or
Popular time Requested by Students
Tues 9 – 12pm
2
Current Snapshot of course
OHs on
recommend: ↑ OH or
TAs on Friday 3-5pm
recommender system
See where students need help
Questions
1a 2b 3c 4c
Decide if release more info
QA on Linear Alg
Review Section
After class QA