

# FIELD AGENTS

MISSION BRIEFING: AI IN THE WILD

## FINAL PROJECT

7 oct brainstorm • 21 oct idea • 4 nov users • 18 nov code • 8 dec presentation

*The most profound technologies are those that disappear.  
They weave themselves into the fabric of everyday life until  
they are indistinguishable from it.*

— Mark Weiser, "The Computer for the 21st Century," 1991

Your final project might never live on a laptop screen. It could run on a phone propped up at a noisy prep station, on a watch face glanced at between tasks, through an earbud with the screen off, or on a display mounted on a wall where a whole crew can see it. It might read a crumpled letter through a camera or answer a question spoken in the middle of a job. **The form it takes is up to your team and the people you design for.**

**What you'll learn.** This is our cs160 final project brief where everything in the course comes together. You'll find *real* people whose needs most software ignores and learn how they actually get things done. You'll design for the conditions they're really in, and build a web application that uses AI models across several modalities. Because the application sits in the middle of someone's real life, it has to cope with an AI that is slow, costs money, and is sometimes confidently wrong. You are working through these issues now on a small scale in PROG 02. In the final project you'll do it for users you found yourselves, in a setting you had to go see in person.

**The challenge.** Most software is designed for someone who looks a lot like the person who built it: sitting at a desk with free hands and full attention, fluent in the system's language, and with time to figure things out. A great many people are none of those things when they need help most. Your team will pick one of two tracks (or maybe find a blend of both), find a specific group of people in that space, and design for the conditions they're in.

## The Two Tracks

*Both tracks start from the same idea: software built for someone who isn't there. Pick the one where you can find real people to learn from. Every example below is a starting point, not a menu.*

### Track A: Field Intelligence: Off the Desk

This track is about work, paid or volunteer, that happens with hands full and attention split. It happens in kitchens, shops, backstage, on job sites, on trails, and in community gardens, where there's noise, gloves, weather, and time pressure, and other people depend on you. Here are some groups you might design for:

| KIND OF WORK                 | EXAMPLES                                                                                                                                                                                     | WHAT MAKES IT HARD                                                                          |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Paid trades and service work | Line cooks and prep crews, bike mechanics, electricians and apprentices, stagehands and theater crews, lab techs, custodial and facilities staff, museum preparators, farmers-market vendors | Hands are full, wet, or gloved. It's loud. Someone is waiting on you.                       |
| Field and mobile work        | Arborists and landscapers, park and trail crews, field biologists and citizen scientists, home care aides moving between clients, dog walkers, couriers, building or utility inspectors      | Always on the move, outdoors, often alone between stops, with spotty signal and bright sun. |
| Volunteer and community work | Community garden crews, food bank and pantry volunteers, co-op members, youth sports coaches and league organizers, tenant association organizers                                            | Rotating people, no training budget, and knowledge that lives in one person's head.         |

## Track B: Counter Intelligence: The Other Side of the Counter

Every institution has two sides of the counter. On one side are people who know the rules, speak the language, have done this a thousand times, and often have lawyers. On the other side is someone holding a letter they don't fully understand, with a deadline in eleven days, a phone, and twenty minutes on a lunch break. This track is about the person on that second side.

It's the most direct way in this course to change how someone's month goes. A tenant who understands a notice before the deadline passes keeps their home. A family that files the right form gets the aid. A small business owner who knows which permit comes first opens on time. The design problems are hard and surprisingly physical. Letters arrive on paper, so your app might start with the camera. Questions come up at the bus stop, so it might be voice. Many people think best in a language other than the one the form is written in. And the moment of need might be standing at an actual counter, with someone waiting behind you in line.

| AREA               | SITUATIONS YOU MIGHT DESIGN FOR                                                                                                                                                                               |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Housing and legal  | Tenants dealing with notices, repairs, or deposit disputes; small-claims filers                                                                                                                               |
| Money and benefits | People applying for or renewing public benefits such as CalFresh or Medi-Cal; first-generation families working through financial aid; small business owners and street vendors handling permits and licenses |
| Care and family    | People appealing an insurance denial; families managing an aging parent's paperwork                                                                                                                           |

**The accuracy rule.** In Track B, just as in PROG 02, the model is never the source of facts about the rules. Your app explains, organizes, and translates material you provide or material the user brings. Anything it says about a rule, deadline, or requirement must trace back to a source the user can see. Your design must also help the user recognize when they need a human, such as a legal aid clinic, a caseworker, or the agency itself, and never pretend to replace one.

## Where the Tracks Meet

Some of the most interesting projects may sit across both tracks: hands-on work and the systems it answers to. Examples are the cook's temperature log for the health inspector, the contractor's permit and inspection, the food truck's permit renewals, and the league's insurance and background checks. You are allowed to explore this intersection design space.

## Who You Design For

- **Real, reachable people.** Name a specific group in the Bay Area that you can actually get to. Observe or interview at least three of them, and ideally more. Classmates, roommates, and friends don't count as your main users.
- **Go see it.** Whichever track you choose, part of your needs research must be observation where the work or process actually happens: a kitchen, a shop, a trailhead, a clinic waiting room, a tenant meeting, a benefits office line.

## What You'll Build

You'll build a deployed web application in JavaScript/React that thoughtfully and creatively engages and uses AI in its design.

**For most teams, that means an app that runs in a phone's browser.** You deploy it, open the URL on a phone, and it behaves like a mobile app, with camera, microphone, and location included. There's no app store and nothing to install. Design for the device your users would really have in hand, and test it on that device, not only on your laptop.

**Other form factors are welcome, built at real size.** If your research shows your users need something other than a phone, you may simulate it in the browser. Your simulation must be built at its real size and input limits, tested in something close to the real setting, and justified by what you learned from your users. "Watches are cool" isn't a reason.



## OFF-LIMITS TOPICS

Every semester, HCI classes see the same handful of project ideas. They're usually fine ideas, but they've been done hundreds of times, and they rarely lead you anywhere you haven't been before. Apps like these are off-limits:

- **Social life:** meeting friends, dating, finding people to eat, study, or work out with, event and party discovery, club finders.
- **School life:** study planners, to-do lists, AI tutors, flashcards, lecture or reading summarizers, note-taking, course schedulers, finding study spots, textbook exchanges.
- **Campus logistics:** dining, laundry-machine availability, parking, lost and found, roommate chores, bill splitting.
- **Career:** job search, résumé builders, interview prep, networking.
- **Personal wellness:** fitness, weight loss, calorie or water tracking, sleep, meditation, mood journals, habit trackers, screen-time monitors, mental-health chatbots.
- **Food and home:** “what can I cook with what's in my fridge,” meal planning, grocery lists, food-waste trackers, plant-care reminders.
- **Consumer extras:** outfit and wardrobe recommenders, travel itinerary planners, restaurant or playlist recommenders, personal budgeting, news summarizers, carbon-footprint trackers.

Some project shapes are off-limits no matter the topic:

- **Tinder for X or Uber for X.** Swipe-to-match and on-demand marketplaces put the design work into the matching algorithm, not into the person.
- **Matching platforms.** For example, an app that pairs volunteers with opportunities. Designing for what volunteers actually do once they show up is fair game.
- **Reminder-and-streak trackers.** These are a notification, a checkbox, and a badge.
- **Dashboards that display data without helping anyone act on it.**
- **A general-purpose chatbot or “AI assistant” for a topic.** If your core interaction is a text box and a reply, you haven't designed anything yet.

If your idea would mainly be used by Berkeley students, it's probably the wrong idea. This list isn't exhaustive. We'll help guide you toward your final selection, and we may steer you away from an idea we feel doesn't leave enough room for design exploration.



## WHAT A STRONG PROJECT LOOKS LIKE

- **The research shows up in the design.** A reviewer can point to a feature and name the observation that led to it: “we watched a cook try to scroll a recipe with a wet thumb,” or “we watched a tenant photograph a notice in bad light at the mailbox.” A strong project doesn’t have features that could have been dreamed up at a desk.
- **The AI is essential, not decoration.** Take away any one model call and the core task gets noticeably worse.
- **Failure is designed for.** You can show what happens when the model is wrong, slow, or unsure, and the user isn’t left stranded.
- **The form factor was a choice.** Whether it’s a phone, a watch, a wall display, or voice, you can explain why it fits your users’ conditions.
- **Other people are accounted for.** Almost no one in either track works alone. In Track A, that means the crew, customers, or coordinator around your user. In Track B, it’s the caseworker, landlord, clinic, or family member.

[illegible]

## MILESTONES

*There will be a series of deliverables along your project path. Keep these in mind as we work forward and each will be released with separate design elements and requirements.*

- **Brainstorm** – Brainstorm ideas, cluster them and select 5 strongest candidates. **Due 7 Oct**
- **Idea** – Final selected idea with plans to meet project goals. **Due 21 Oct**
- **User Needs and Competitive Analysis** – Interviews, observations, and understanding of user needs in context. Analysis of similar and competing designs available to users. **Due 4 Nov**
- **Functional prototype** – Coded working prototype for user feedback of primary task. **Due 18 Nov**
- **Presentation of Final Project** – Oral presentation of design process and outcomes. **Due 8 Dec**
- **Project showcase** – Public showcase of project. **Due 10 Dec**
- **Final materials** – **Due 13 Dec**