

CPSC 444 Project Milestone II: Field Study, Requirements Definition, & Design Alternatives

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Overview

You have approximately **2.5** weeks to complete this milestone. See course schedule for exact dates.

Summary of Milestone II Deliverables

See the project page for instructions on formatting and setting up your blog.

1. Written Report (submit via Canvas)

Concept & Task Validation through a Field Study

(up to 5 pages, not including appendices, which have no page limit)

1. Focal points for field study
2. Brief overview of study protocol
3. Reporting of results
4. Conclusions and implications

+ Appendices (Ia – II)

Appendix Ia: Actual interview questions used (and any other evaluation instruments).

Appendix Ib: (Optional) Any images, figures, diagrams, or summarized data that is not included in the main body of the report.

Appendix II: Typed interview transcripts (include who was the interview/note taker).

+ Statements of contribution

2. Design Process Blog: (submit via Canvas)

Your blog posts for this iteration should include the following updates

1. Update #1: Revised project direction and task examples
2. Update #2: Next steps
 - a. Recommendations (200 word max)
 - b. Updated task examples
 - c. Prioritized list of requirements (400 word max)
 - d. Design alternatives

After Milestone Submission

Mandatory attendance at design review with course staff.

Hard Copy Deliverables (bring to design review)

For this you should use a **2 inch 3-ring binder**, which you should keep in a team locker in the HCI studio (X360). We recommend consolidating materials in this binder as you complete your field study work. Materials just need to be organized and in an understandable order.

You'll need to submit your binder with the following items during the MSII design review:

1. Adherence to ethics protocol form, signed by each team member.
2. Completed participant consent forms.

A. Revisiting Project Direction

Now that you have formed teams around a proposed project topic, you are encouraged to spend some time discussing the original proposal in detail before moving forward. This is the time to refine your one task example and add two more task examples. You can also make high-level changes in your project's direction. Keep in mind that you are not obligated to follow the ideas in the original proposal exactly, nor, on the flip side, are you expected to make any changes to the project direction.

You will have an opportunity to receive feedback from the TA during lab time. Use this time to discuss the strengths and weaknesses of the original proposal, as well how you wish to proceed. Also make sure you discuss any significant deviations from the original proposal.

Blog Update #1: describe any changes you have made to the project direction from the original proposal.

If you are not making any changes, simply post that you aren't making any changes in direction.

In addition, include three task examples.

B. Concept & Task Validation through a Field Study

You have proposed a new or revised system, but how do you know that it will actually be desired or useful to anyone? A key tenet in HCI is to have *early* and continual involvement of target users. So before you go too far along the design and development path, you will conduct a field study to learn more about the users and the activity you intend to support.

Given the time constraints for this project, you will not be required to validate the design decisions you make based on your field study results.

A reminder that 444 is approved under the HCI Course Projects ethics protocol. Each team member must read and sign a copy of the adherence to ethics protocol form (website Resources page). Your project must follow all the ethical guidelines as given in the protocol, including only using TA approved calls for participation, consent forms, and study instruments (e.g., questionnaires).

Hard copy deliverable (design review): Adherence to ethics protocol form, signed by each team member.

Step 1: Determine your focal points for the field study

Start by *determining a list of focal points* that will drive your field study. In general terms, at this stage most projects will need to:

- learn more about the users that your system is intending to support;
- obtain information about the current practice;
- confirm the accuracy of your project's task examples and further develop them.

The above goals are *too general* to act as focal points in an actual study; they are intended to give you an idea of what kind of information you should be looking for.

Report Section #1 - Focal points for field study: a list of roughly 3-5 specific focal points, as determined in Step 1.

Step 2: Develop your interview questions

Derive a set of interview questions from your focal points that will form the core of your interview. You must include your list of interview questions in **Appendix Ia**

Report Appendix Ia: Actual interview questions used (and any other evaluation instruments).

Step 3: Identify representative users whom you will interview

Identify an appropriate number (see below) of representative users for your intended system that you will be able to use in your Milestone II field study. If you cannot find/use representative users appropriate for your field study, you should consult with course staff.

While it is *acceptable to recruit participants from among your classmates*, you are strongly encouraged to only use classmates as a last resort. Your classmates will likely be too familiar with your project goals (given the small size of the class and the targeted nature of the project) to be able to give you unbiased input. For the same reason, you should consider carefully whether friends and family members should be included as participants. It is probably best to avoid including them, unless you are confident they will be unaware of your project goals.

For this course we expect you to perform at least *one interview per person* in your team. More specifically, each team member needs to lead at least one interview. Deviation from this guideline requires approval from the course staff.

Step 4: Plan the field study

It is crucial to decide in advance on a *protocol* for any field study.

For example, a protocol should summarize the results of the following types of tasks (not all of which will be appropriate for every team):

- Work out *details of face-to-face techniques* meticulously ahead of time. In particular, consider the ordering of interview questions, especially if and when you plan to disclose your system concept to participants as part of the interview. Keep in mind that doing so before ascertaining details about your participants' practices could bias their responses such that the way they describe their practice fits more ideally with your system concept. Also consider what you hope to observe.
- Decide *where interviews and observation will be conducted*. A field study should ideally be conducted in the context where the practice your system will support takes place. Remember that sometimes, what people do and what people say are different! Thus, you should strive to interview and observe your participants in a context relevant to your topic so that you can ask questions about particular artifacts or configurations that you see. This may not be possible in all cases (e.g., mobile vacation blogger), so consult with course staff if your project idea makes this difficult. Also remember that interviews require a quiet environment.
- Decide *what materials or tools you will need*. Depending on the location of your interviews, you may want to take pictures or create sketches. Most modern smartphones can capture audio recordings. You may also want to bring a laptop to make taking notes easier.
- Verify that your set of *interview questions* takes an appropriate amount of time. Each interview should last around 30 minutes.

It is recommended that you get feedback from your TA on your focal points and your interview planning, prior to completing the field study.

Report Section #2 - Brief overview of study protocol: provide a brief overview of this protocol, with just enough detail that someone else could approximately replicate your field study with the help of your interview questions.

Step 5: Conduct the field study

Leverage what you've learned in lectures and workshops (and in 344) when conducting the field study.

You should *conduct the interviews and observations in pairs*. Each person in your team must take part in 2 interviews, so that you each get experience as the person conducting the interview, and as the person taking notes for the main interviewer.

Remember to take pictures or make sketches illustrating the context of the interviews or any important artifacts that might help you later on in your analysis.

Each participant should complete a consent form before participating. Completed consent forms should be included in with your **hard copy deliverables**.

A transcription of the interview, plus any notes must be typed up (so they are as legible as possible) and included in **Report Appendix II**.

Report Appendix II: Typed interview transcripts (include who was the interviewer and note taker).

Hard copy deliverable (design review): Completed consent forms.

Step 6: Analyze field study data

For informal techniques like interviews and observations, analysis usually consists of collation (with standard deviations when data is quantitative), summarizing, looking for themes, and key representative examples.

One technique to organizing your data is to construct an affinity diagram for your data (http://en.wikipedia.org/wiki/Affinity_diagram), and look for any emergent categories. Another technique is to start from your focal points, addressing each focal point in turn.

An important secondary output of your analysis phase is updating and verifying your task examples. You will provide your *revised task examples* in your design process blog, including a *summary of changes* from pre-field study versions. Make sure it is clear to the reader what has changed based on what you learned from your field work. If nothing has changed, say so explicitly.

Blog Update #2b: Task examples, revised post-field study, with summary of revisions from the pre-field study versions.

Step 7: Report results

Your report should outline your focal points and address them grounded in *examples* from your interviews or your visits to the interview sites. In so doing, you should also describe the context and how that context affects your findings.

The important thing is to provide your reader with a good description of your participants, including their motivations, and what the interview area looks like. (Of course, participants should not be identified explicitly by name, nor should they be identifiable by aggregating all the descriptive data about them.) You should comment specifically on the representativeness of your

participants and identify the number of participants assessed. Also, describe the particular area(s) where interviews were conducted and reference any relevant photos or sketches.

One example outline for your results section:

- Describe the participants and the interview areas. Photo of the areas would likely be interesting to help ground the discussion.
- Provide your first focal point and then richly describe your understanding of that focal point given your participants. For example, you may consider how the participants use certain artifacts to complete a task (or how they do not use anything at all). You may consider why they do or do not do so. (Bullet point descriptions are not appropriate.)
- Repeat this process for the second and additional focal points.

Another effective way of reporting your results is to group your findings based on themes that are uncovered in your analysis.

Note that depending on the length of your interview you may have more results to report than your have space. You need to be judicious about what results and focal points you address in the main body of your report, and what you leave for the **Appendix Ib**.

Report Section #3 - Reporting of results: write up your results, including descriptions of participants and a rich discussion of your focal points or themes.

Report Appendix Ib: Any images, figures, diagrams, or summarized data that is not included in the main body of the report.

Step 8: Formulate conclusions

Summarize the key insights (the most significant and influential) gained from the field study. This means taking a step back from the particular details of your study, and describing what you have learned from interviewing real participants. For example, has anything surprised you? Is there a current practice that seems to work well for users? What does not work well? What overall conclusions can you draw, and what are their implications for design?

Finally, *critique your process*: list any problems noted with the design and execution of the field study itself, and document any inherent limitations.

Report Section #4 – Conclusions and Implications: write up your summary of key insights, conclusions and implications as well as the critique of your process.

Step 9: Decide on Next Steps

Based on your conclusions from the previous step, determine your *recommendations* for the next step of development. Perhaps the full realization of your system concept is beyond the scope of this course project. Based on what you learned in this field study, which aspect(s) do you think you should focus your limited time and resources on? (This will be fleshed out in the requirements, so you only need to allude to it here.)

Note: in the unlikely event that your user study shows no support for your system concept (*i.e.*, you are unable to validate it), you need to consult the course staff before proceeding to Part C.

Blog Update #2a –Next steps: summarize your recommendations for the next steps given your conclusions from the field study.

C. Requirements Definition

Because it may be unrealistic to fulfill your full system concept for all possible target users, you must *prioritize* the aspects of the system that you will develop based on the information you gathered during your field study, and *estimate their difficulty*.

The primary output of this stage is a specification of the *interface functionality* that your system must deliver. It does not specify *how* – *i.e.*, this stage is design-independent and usually it will be possible to implement requirements in a variety of ways.

Step 10: Create prioritized list of requirements

From the task examples and associated inquiry with potential users, decide upon the *major requirements for your system* and prioritize them into:

- a) absolutely must include
- b) should include
- c) could include
- d) could exclude

Similarly, categorize the kinds of users using the above four labels, deciding which kinds of users must be included and which users you will exclude.

Blog Update #2c - Prioritized list of requirements: a list of your major requirements and kinds of users, categorized by priority. Each category should be accompanied by a brief discussion as to why the items were placed in that category, including mention and justification of any user types that you have decided to not support.

D. Design Alternatives

Step 11: Brainstorm Several Design Alternatives

From the most promising *task examples* (in most cases 2-3) *and requirements*, your team should roughly sketch out several competing interfaces. The alternatives should be as different as possible, to span the possible space represented by the task example(s). Detailed designs are not required at this stage (lo-fi prototyping will happen in MSIII), and pencil sketches are sufficient.

Assess the pros and cons of each alternative. (Think about the project goals and your stakeholders.)

Tip: To amplify diversity, each group member may want to try to create a few rough sketches of ideas before gathering as a group. Remember that *you don't need to be an artist to have and sketch good ideas* – you just need to develop your style.

Blog Update #2d - Design alternatives: present your design alternatives in a way that allows the reader can understand the gist of the design approach being taken. You should include brief written description of the alternatives, and your assessment of the pros and cons of each one. Include visual media to demonstrate the alternatives – e.g., images of sketches – annotated or captioned where possible.

E. Statements of Contributions

Step 12: Document individual contributions to the milestone

Team members each *briefly* document, on a separate page, their individual contributions to the milestone. These are not to be written or edited by anyone other than the team member him/herself. The preferred format is student name at the top of the page, followed by a bulleted list of contributions. Example contributions include: “set up the team blog”, “actively participated in a 2-hour analysis session (affinity diagramming)”, “wrote the first draft of the conclusions.”

Milestone Specific Marking

General project marking criteria can be found on the course page. In addition to the usual criteria, you will be marked on the basis of:

- *rationale* for decisions: *e.g.*, appropriate choice of focal points, interview questions and tools; quality of analysis and discussion of results; design alternatives

Tentative High-Level Marking Scheme

1. Blog Update #1 – Revision direction and task examples	5%
2. Field study report	60%
3. Blog Update #2 – Next steps	35%

Milestone II Design Review

Course staff will conduct a design review with each team at a workshop session soon after the deliverable’s due date. The intent of the design review is for the course staff to provide feedback to the teams on their progress, and discuss the plan for proceeding to the next project milestone. There are no student deliverables for this design review, but teams need to be prepared with questions or points that they would like feedback on.