

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

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## Overview

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

### Milestone II Deliverables

#### A. Revisiting project direction

(up to ½ page, not including appendices, which have no page limit)

##### A.1 Deviation from proposal

+ Part A Appendices (A.I)

Appendix A.I: Task examples, as revised post-field study, with summary of revisions.  
(no page limit)

#### B. Concept & Task Validation through a Field Study

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

##### B.1. Focal Points for field study

##### B.2. Brief overview of study protocol

##### B.3. Reporting of results

##### B.4. Conclusions and recommendations

+ Part B Appendices (B.Ia – B.V)

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

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

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

Appendix B.III: Task examples, as revised post-field study, with summary of revisions.

Appendix B.IV: 444 Ethics Protocol forms, one copy signed by each team member.  
*Hardcopy submission only.*

Appendix B.V: Completed consent forms. *Hardcopy submission only.*

#### C. Requirements Definition

(up to 1 page)

##### C.1. One-sentence problem description

##### C.2. Prioritized list of requirements

#### D. Design Alternatives

##### D.1 A brief overview of each design alternatives + their pros and cons (up to 1 page)

+ Part D Appendices (D.1)

Appendix D.I: Supply the *sketches* themselves, annotated where possible. *Hardcopy submission only.*

### After Milestone Submission

Mandatory attendance at design review with course staff.

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## A. Revisiting Project Direction

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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 a good opportunity to consider any refinements to your task examples, as well as any 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 are you expected to make any changes to the project.

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.

If you do choose to make changes to your project topic, you will need to update your task examples accordingly. You are of course welcome to improve upon your task examples even if you do not make significant changes to your project. Revised task examples should be included in **Appendix A.I**.

<p><b>Deliverable A.1 Deviation from proposal:</b> describe any changes you have made to the project from the original proposal. If you are not making any changes, say so.</p>
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<p><b>Appendix A.I:</b> Task examples, as revised post-proposal, with summary of revisions</p>
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## B. Concept & Task Validation through a Field Study

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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 about the 444 ethics protocol:* this milestone involves working with users. Each team member must read and sign a copy of the ethics protocol for CS444 (website Resources page). Your project must follow all the ethical guidelines as given in the protocol, including the use of proper consent forms and member signing of the protocol form. Team-signed forms will be handed in with your hardcopy deliverable in

**Appendix B.IV:** 444 Ethics Protocol forms, one copy 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 (the first field methods tutorial will give you experience with creating focal points). 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.

**Deliverable B.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 you can use for the interview (you can use other questions, too). You must include your list of interview questions in **Appendix B.Ia**

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

### Step 3: Identify representative users who you will interview

*According to the ethics protocol for 444, your participant pool must be limited to volunteers recruited from people you know personally, such as friends, family and classmates.*

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* according to the ethics protocol, 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 this course we expect you to perform at least *one interview per person* in your team. 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, so think about bringing a camera. 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.

**Deliverable B.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 learned in the lectures and tutorials (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 **Appendix B.V**.

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

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

**Appendix B.V:** 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. The organization of the results and the findings will be tricky.

One technique to organizing your data is to construct an affinity diagram for your data ([http://en.wikipedia.org/wiki/Affinity\\_diagram](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 **Appendix B.III**, preceded by a *summary of changes* from the Milestone I version. Make sure it is clear to the reader what has changed. If nothing has changed, say so explicitly.

**Appendix B.III:** Task examples, as revised post-field study, with summary of revisions.

### 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.

An 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.
- Describe your first focal point, and outline 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 these things at all). You may consider why they do or do not do so.
- Repeat this process for the second and additional focal points.

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 B.Ib**.

**Deliverable B.3. Reporting of results:** write up your results, including descriptions of participants and discussion of your focal points.

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

## Step 8: Formulate conclusions and recommendations

*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?

Next, draw your *conclusions and 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 do you think you should focus your limited time and resources on? (Note that this will be fleshed out in the detailed requirements in Part C, so here all you need to do is foreshadow that section.)

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

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.

**Deliverable B.4. Conclusions and recommendations:** write up your summary of key insights, conclusions and recommendations as well as the critique of your process.

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## C. Requirements Definition

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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 8: 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; and
- d) 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.

**Deliverable C.2. 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.

### Step 9: One-sentence problem description

**Deliverable C.1. One-sentence problem description:** Encapsulate your prioritized requirements for your project using a one-sentence problem statement (as taught in 344).

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## D. Design Alternatives

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### Step 10: 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).

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.

**Deliverable D.1 Design alternatives:** write up a description of each design alternative so that the reader can understand the gist of the design approach being taken. Also include your assessment of the pros and cons of each alternative.

**Appendix D.I:** Supply the *sketches* themselves, annotated where possible.

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## Milestone Specific Marking

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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.

### Tentative High-Level Marking Scheme

A. revising project direction	0-10%	(this may or may not be necessary, depending on the project)
B. field study:	55-65%	
C. requirements:	15%	
D. design alternatives:	20%	

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## Milestone II Design Review

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Course staff will conduct a design review with each team at a lab session soon after the deliverable's due date. The intent of the design review is to provide feedback to the teams as to their progress, and discuss the plan for proceeding to the next project milestone.