

CPSC 444 Project Milestone I:
Proposal

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Type: INDIVIDUAL

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Overview

You have approximately **1 week** to complete this milestone. See course schedule for exact dates.

Milestone Deliverables

A. Project Concept/Project Brainstorming
(up to a 1/2 page)

A.1. Project topic short list

B. Preliminary Task Analysis and Design Direction

(up to 1 and 1/2 pages, not including appendices, which have no page limit)

B.1. Problem Description

B.2. Task Example

B.3. Task Analysis

B.4. Design Direction

+ Part B Appendices (B.I – B.II)

(Required) Appendix B.I – Bibliography of cited references.

(Optional) Appendix B.II – Supporting images and figures, as needed (from steps 4 – 6).

Thus, the main body of your deliverable is up to 2 pages, plus appendices.

After Milestone Submission

Team formation and mini design review with course staff.

Submission Format and Instructions

Instructions for formatting and submitting your milestone are on the Project page of the course webpage.

Introduction

This first milestone is an **individual assignment**. You will begin by proposing a topic idea that could form the basis of your course project by performing a preliminary task analysis. The course staff will then select the most promising ideas to be used for this year's project topics. Teams will be formed around those topics and all remaining milestones will be team based.

You may work on any topic idea that centers on: (a) the creation of a new interactive computational technology to support a human activity, or (b) the substantial improvement of an existing interactive technology so that it better supports a human activity. Alternatively, (c) you may also consider redesigning an existing system to make it appropriate for a different user population. You are encouraged to be creative and innovative.

Example topics *may* be provided in lecture or Workshop.

A. Project Topic Brainstorming

You will start by brainstorming possible topic ideas – there is workshop time allocated for group brainstorming, but you should start on your own in advance. (If necessary, refer to the supplementary brainstorming notes: <https://www.ugrad.cs.ubc.ca/~cs444/supp-brainstorming.html>)

A constraint on your project topic is that you *will have to involve representative users in both the design and evaluation stages*. Refresh yourself on the HCI Course Ethics, which was introduced in 344, as a reminder to the constraints on recruiting and working with human subjects (as well as data treatment). Note that if you did not take CPSC 344 at UBC and have not completed the TCPS2 tutorial, you will need to do so before beginning evaluations in Milestone II of the project – talk to your instructor as soon as possible.

Assume that you will require a minimum of 10 representative users over the course of this project. (The one exception is that if you work with a difficult-to-recruit population such as the blind, you may be permitted to involve fewer than 10 users.) Therefore, select a project topic for which you are confident that your team could recruit appropriate users.

Be aware of your own experience and skills when considering possible topics, as well as those of potential teammates. Also, be sure that a team could acquire the appropriate tools to do the job. **Note that the focus here is on the user interface design and NOT on developing all the other technological pieces that would be required to get your project working in the real world.** Some backend functionality is needed so that you can appropriately evaluate your system, but the whole system does not have to be "production ready." Further, these technological requirements should be realistic. They should exist (or be easily developed by combining other technologies that already exist). Your project cannot depend on something that needs to be invented first.

You can consider topics that focus on dramatically improving an existing interface / interaction that is poorly designed.

Your proposed project topic should be as specific as possible. The more specific you get during brainstorming, the more likely that your team (to be formed after this milestone is submitted) will be able to design, implement, and evaluate the user interface for your project within the course timeframe.

From having taken 344, you are already familiar with those resources available to you in the HCI Learning Studio. If you have other resources at your disposal, you are welcome to use those. You are encouraged to think "out-of-the-box" and include new or different interaction techniques (e.g., speech interfaces, vision-based interfaces).

Deliverable A.1. Project topic short list: a list of three of your *best* project ideas from brainstorming. Provide a 2 – 3 sentence description of each.

Recommended: have a friend outside of 444 read your project ideas to see if they are understandable and clear.

B. Preliminary Task Analysis and Design Direction

Step 1: Choose your proposal topic

Choose *only one topic* from the short list of potential topics you generated in Part A to use for your proposal. *Consult* with your TA if you need guidance on which of your ideas have a high likelihood of success (but don't simply ask your TA to pick one).

Tip: Strongly consider choosing your most novel idea, so long as it can be prototyped.

Step 2: Preliminary research & references

Do a preliminary search online on your chosen topic. You should begin by searching commercial websites; and you can then *optionally* also consider searching in the research literature. This will allow you to assess the novelty of your design idea and set your idea in the context of what exists already and what has been proposed in the research community. For the research literature, key sources include: the HCI Bibliography (www.hcibib.org), the ACM digital library (<http://portal.acm.org/dl.cfm>) and Google Scholar (<http://scholar.google.ca/>). As a starting point, try to find **at least two pieces of related work** (from general online sources or the research literature).

You must *cite* any sources that you have used (e.g., for quotes, general reference, or images), including books, magazines, journals, and URLs. Depending on how a source relates to your proposed idea, it may be appropriate for it to appear anywhere in part B.

Remember that to cite a source means that it **must**: (1) be used to support some point or argument in your proposal; (2) be noted ("cited") at that exact spot in the proposal; and (3) the full reference to the source must be included in the Bibliography section.

Appendix B.I: Bibliography of cited references. Any clear, professional citation style is acceptable, e.g., APA style (http://www.apastyle.org/).

Step 3: Problem Description

- Identify the *human activity/practice* which your proposed system is intended to or needs to support
- Identify the *people or users* who will or should be performing the activity, as well as *other important stakeholders*

Deliverable B.1. Problem description: A short (approximately 3-5 sentences) and specific description about the high-level goals of your proposed project including the two bullet points above. This will act as an introduction to the rest of the proposal, preparing the reader for details to come.
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Step 4: Identify one key task example

In order to illustrate the potential utility of your chosen system, your proposal will include one key representative task example (which you learned how to do in 344: https://www.ugrad.cs.ubc.ca/~cs344/current-term/res/resources_TE-Examples.pdf). The task example should be directly related to the human activity you are trying to support. Make sure that your task example is not the only possible one for this project topic. While only one task example is included in this milestone, you should be confident that you could have at least two more good task examples that you could describe in later milestones (should your topic be chosen to seed a group project). A full set of task examples should involve a range of stakeholders. For this milestone, choose only the most important task example, making it as succinct as possible, using images or figures where appropriate.

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Remember, task examples are interface-independent; or as much so as you are able to make them. That is, they should not include details about a particular interface design, but should be defined more broadly so that more than one interface could potentially be used to perform any given task.

Deliverable B.2. Task example: Succinctly present one key task example in your report.

Appendix B.II: Supporting images and figures, as appropriate.

Step 5: Task analysis

You need to analyze your one task example and determine to what extent it is supported in current practice (perhaps through existing technology, or through non-technological means), identifying both the positive and negative aspects of this practice.

Deliverable B.3. Task Analysis: Document your analysis for your task (as described above) to give more background for the problem or new idea.

Appendix B.II: Supporting images and figures, as appropriate.

Step 6: 444 Project feasibility: Identify a possible design direction

Imagine your project idea is chosen to seed a team project this term – what design approach would you take? Perhaps a desktop app, kiosk, wearable, application plugin, mobile app, or something else? Your goal here is to identify a specific high-level design approach that might be feasible for resolving the problem or implementing the new ideas described earlier, and to briefly explain why you believe the approach could work. Use images or figures to clarify your suggested approach where appropriate. If there are questions that you intend to answer to steer your design process, you can include them here. Low-level design (e.g., a specific graphical user interface layout) is **not** appropriate at this stage. You should note any additional infrastructure (software, hardware or other materials) that you expect you might need for your system during this course project and identify where it might come from (course staff, personal stocks, other?). Of course, this may evolve and change in a later stage of the project.

Note that if you are struggling to identify a good/feasible design direction for your topic, this is likely a clue that your chosen topic is poorly specified or that it is not appropriate for a 444 course project (assume ~4 students on your team, working together for 3 months).

Deliverable B.4. Design Direction: Write up your design direction as described above.

Appendix B.II: Supporting images and figures, as appropriate.

Milestone Specific Marking

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

- The quality of your preliminary literature search

Tentative High-Level Marking Scheme

- A. Project brainstorming
- B. Preliminary task analysis & design direction 60%
 - Design direction is worth approximately 40% of this section

Milestone I Mini Design Review

Course staff will mark the proposals soon after the deliverable's due date, and will select the most promising ideas to be used for this year's project topics.

Shortly after the topics are posted you will have a team formation lab, in which the author of each selected proposal will give a brief 2-minute pitch about their idea. You will then participate in a short team formation exercise, forming teams around the selected project ideas.

Course staff will then conduct a mini design review with each team. The intent of the design review is to provide feedback to the teams on their selected idea, and discuss the plan for proceeding to the next project stage.