Mini-Project: Pre-Design Stage – Understanding User & Task

Deliverables W04, W05 and W07

In this mini-project, your team will investigate usability problems with an existing interface that supports a human activity, and will propose solutions to improve that interface. You’ll conduct evaluations to understand the problems that users are currently having with this system, and then establish usability requirements for a new user interface.

You will be assigned to a group for this mini-project, assigned before your W03 workshop. This mini-project is 3 weeks long, with 2 checkpoints and a final report. Each week during workshop, you’ll discuss your progress with your TA.

Use the provided Microsoft Word template for all three deliverables:

- **Checkpoint W04** – Evaluation plan.
- **Checkpoint W05** – Pilot study.
- **Report W07** – Perform analysis and develop design requirements.

**Mini-Project Topics**

You have four options: three from us, or one your team proposes. A topic consists of a broad human need and an existing, troubled interface intended to support this activity. Choose one for your mini-project, and inform your Workshop TA by the end of the W03 Workshop.

- **Topic 1**: Discovering and interacting with communities in the real world
  Interface: Meetup. [https://www.meetup.com/](https://www.meetup.com/)

- **Topic 2**: Deciding what to do using crowd sourced business recommendations
  Interface: Yelp. [https://www.yelp.com](https://www.yelp.com)

- **Topic 3**: Shopping online for groceries.
  Interface: SaveOnFoods – online shopping. [https://shop.saveonfoods.com/](https://shop.saveonfoods.com/)

- **Topic T**: Team Proposes an Interface.
  (1) Discuss w/ TA in W03 workshop.
  (2) Propose by Fri 5pm, W03 (Piazza post to course staff). Include: team names/workshop #; 1-paragraph description of the proposed service, task and issues; 2<sup>nd</sup>-choice topic (1, 2 or 3).

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Mini-Project Steps

Step 1: Define the human need and central tasks you will focus on
- Define a human need to understand and improve support for.
- Brainstorm on widely different tasks and contexts, users and platform (e.g. students vs. parents, laptop vs. phone).
- Select 2-3 important tasks central to your chosen human need. Identify ways that your chosen interface fulfills that need. What tasks do users need to perform?

Step 2: Develop specific evaluation goals
The following general goals are relevant for most teams. Add more specific questions:
- Develop task descriptions with reference to the human need; then prioritize, and justify.
- Discover conceptual/implementation problems with the interface, and assess their impact.
- Assess whether the chosen human need is being well met by the existing system or not.

Step 3: Identify representative users who will act as your participants
Your subjects must be >= 19 years (17 for UBC students), able to understand what they are consenting to, and not vulnerable in any way to yourselves, the researchers.

Identify an appropriate number of representative users. Use a minimum of TWO participants per group member (i.e. for a 5 member team, at least 10 participants). You can recruit subjects from among your classmates, but their participation is not required.

Step 4: Choose your data gathering techniques
Use a combination (at least 2) of observations, interviews and/or questionnaires. Choose the type of observation, type of interview and/or type of survey questions based on what will best support your evaluation goals. You’ll have to justify this in the report – write it down.

Step 5: Write a study protocol and report on your study instruments
Your study protocol should briefly summarize the results of the following planning steps:
1) Decide what type of data you will collect using each of your evaluation methods
2) Decide how you will record your data. E.g., take notes, develop coding sheets, record audio, take photographs or collect artifacts, etc.
3) Work out details of data gathering techniques meticulously ahead of time. Sample interview questions and observation tasks can be found on the courseweb/resources/“Supplementary Notes.”
4) Decide where evaluations will be conducted. E.g., observations are usually best in the context of typical use. Interviews may require a quiet environment. Remote interviews will require you to setup an online video conferencing. → In 2020W1, data collection should not involve any in-person contact. Remote interviews/observations and online surveys are great non-contact options.
5) Decide how you will analyze your data (e.g. summarize interview results, count errors during observation). Collect it in a format amenable to this analysis.
6) Determine your study length or time required, and verify that it is reasonable given subjects’ anticipated availability (usually <1hr for interviews/observations).
The outcome of this step must include a set of study instruments, e.g., interview questions.

**Step 6: Carry out required steps for ethics adherence**

*Templates and preparation instructions on courseweb/resources/ethics.*

In 344, we follow an ethics protocol approved for the UBC Computer Science HCI Course Projects, which you have been introduced to through the TCPS assignment.

Now, review the ethics protocol and adherence form, and prepare a consent form using the template. If you want to advertise for participants, then complete the recruitment template.

Submit your prepared ethics documents to your TA in the W04 Checkpoint.

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**W04 CHECKPOINT (Steps 1-6): by now,**

**Complete:** Steps 1-6.

**Submit:** Evaluation plan (central tasks, evaluation goals, participant pool, protocol and study instruments, ethics materials). See the W04 Checkpoint template for details.

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**Step 7: Pilot your study, finalize evaluation plan and materials**

Make any changes recommended by your TA. Then, pilot your study with at least 2 people to work out any kinks, and revise materials accordingly.

**Ethics restriction:** For piloting, you do not need to use consent forms if you limit your participants to 344 classmates and/or personal friends and family. You will not use the piloting data you collect for anything other than improving your evaluation plan.

**Step 8: Conduct evaluations**

If you revise the evaluation instruments after the W04 checkpoint, your TA must sign off on the revisions BEFORE you conduct the study, including consent forms/recruitment materials. You may do this either in the W04 Workshop or via email afterwards.

As you carry out your evaluation, note any changes from your plan, for inclusion in report.

You should complete all of your evaluations by the W06 Workshop at the latest.

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**W05 CHECKPOINT (Step 7-8): by now,**

**Complete:** Step 7. **Almost complete:** Step 8.

**Submit:** Slides on piloting and status of evaluations. See W05 Checkpoint template.
Step 9: Analyze and present evaluation data (informal study)

Informal studies analysis usually means collation of quantitative results, summarization, looking for themes, and finding for key representative examples. Aspects to consider include:

- context of the evaluation and the activity
- characteristics of the participants
- any breakdowns observed (mistakes, inefficiencies, etc.)
- common and repeated behaviors
- uncommon behaviors (that may or may not have been repeated)
- common complaints or positive feedback
- issues that you expected and confirmed, or new issues that you discovered
- reactions shared by many of your subjects
- “outlier” responses – specific reactions out of line with most other users
- other responses that provided extra feedback and useful design ideas.

Quantitative results: if any (e.g. summarized results from survey questions).

Qualitative results: Report on themes and unexpected details from your qualitative findings.

Use a combination of written description and visuals (e.g., images, sketches, charts or graphs, and tables) as appropriate to clearly present your results.

W06 CHECKPOINT (Step 8-9): by now,
Submit: Slides that report on data collection and analysis. See W06 Checkpoint template.

Step 10: Formulate conclusions

Determine conclusions with respect to your original goals. What are the key strengths / weakness of the interface, their relative importance to users, and changes in your own viewpoint? Reiterate positive characteristics that are important to retain or reproduce.

Critique your process: List any problems noted with the evaluation itself.

Step 11: Develop task examples

Redefine the central task(s) based on the evaluation you developed through your study by creating 2-3 task examples, using a range of user-stakeholders if appropriate. Each should: say who the users are, what they want to do, be specific, and describe a complete job while maintaining an appropriate degree of design independence.

Step 12: Create prioritized requirements

Consider and list all system aspects that you think should be developed or addressed based on your analysis and your conclusions.

i) List requirements for your system – both existing, and things that ideally will change.

ii) Prioritize this list, based on importance and feasibility, into must-do, should-do, etc. Your result should be a specification of what your system must deliver with respect to your central tasks – not how. Your requirements for interface functionality must be design-independent. It is generally possible to implement requirements in a variety of ways.
W07 REPORT (Step 8-12): by now,
Complete Steps 8-12. Submit: a report detailing your evaluation and results, as well as requirements and task examples for an improved system. See W07 Report Template for details.