

## Mini Project: Pre-Design Stage – Understanding User & Task Deliverables W04, W05 and W07

In this mini project, you'll 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 that will provide better support.

This mini-project is 3 weeks long, with 2 checkpoints and a final report. Use the provided Microsoft Word template for all three items.

**Checkpoint W04 – Evaluation plan.** Design and submit an evaluation plan for a study to understand the problems with an existing interface.

**Checkpoint W05 – Pilot and conduct study.** Submit findings from your study pilot.

**Report W07 – Perform analysis and develop design requirements.** Create Task Examples. Conduct your study and analyze your results. Report your findings, refine task examples, and develop prioritized requirements for an improved tool.

**Weekly:** As a team, in workshop, discuss previous deliverable and next steps with your TA.

### Group Formation

You will be assigned to **a group** for this mini project, identified before your Week 03 workshop.

### 2018W1 Mini-Project Topics

You have four options: three from us, or one your team proposes. A topic consists of a broad human activity 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/>

**Topic 2: Deciding what to do using crowd sourced business recommendations**

Interface: Yelp. <https://www.yelp.com>

**Topic 3: Shopping online for groceries.**

Interface: *SaveOnFoods – online shopping site.* <https://freshdelivery.saveonfoods.com>

**Topic T: Team Proposes Activity and 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 site, task and issues; 2<sup>nd</sup>-choice topic (1, 2 or 3).

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## Mini-Project Steps

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### Step 1: Define the human activity and central tasks you will focus on

- What is your chosen interface/system for and how can you use it?
- Choose / define one **broad human activity** to understand and improve support for (the system may support others). Distinguish ‘activity’ (broad intent) from ‘task’ (specific).
- Brainstorm on widely different tasks and contexts, users and platform (e.g. laptop vs phone). Then, select 2-3 important **tasks central to your chosen activity**.

### Step 2: Develop specific evaluation goals

The following *general* goals are relevant for most teams now. Add more specific questions:

- Develop task descriptions (including user needs); confirm their accuracy and importance.
- Discover conceptual and implementation problems, and assess their impact.
- Assess which user needs are being well met by the existing system and which are not.

### Step 3: Identify representative users who will act as your participants

*Your subjects must be  $\geq 19$  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 final report – write it down.

### Step 5: Develop a study protocol and study instruments

Your study protocol should briefly summarize the results of the following planning steps:

- a) Plan how you will conduct the evaluation **in order from start to finish**.
- b) Decide **what data you will collect** using each of your evaluation methods
- c) Choose the **data collection methods** you will use to record your data. E.g., take notes, develop coding sheets, record audio, take photographs or collect artifacts, etc.
- d) Work out **details of face-to-face techniques** meticulously ahead of time. Sample interview questions can be found on the course Resources webpage.
- e) Decide **where face-to-face evaluations will be conducted**. E.g., observations are usually best in the context of typical use. Interviews may require a quiet environment.
- f) 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.
- g) Determine your study **length** or time required, and verify that it **is reasonable** given subjects’ anticipated availability.

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 the [course website resource/ethics](#) section.*

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 experiment documents to your TA** in the W04 Checkpoint, and will receive approval or a request for revisions in the following workshop.

**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 Details (below).*

**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 W05 Workshop at the latest.**

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

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

**Submit:** A brief report on piloting and status of evaluations. *See W05 Checkpoint Details.*

### 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 closed interview 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.

### 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.*

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## **W04 CHECKPOINT DETAILS:**

### ***Evaluation Plan – Steps 1-6***

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<i>Type:</i> Group hand-in	<i>Form:</i> Written	<i>Expected Length:</i> ~ 1.5 pages + appendices
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Submit an evaluation plan and materials. The goal of this checkpoint is to ensure you are on the right track. Your evaluation materials may be revised before you conduct your evaluation. You'll justify the decisions made up to this stage in your final report, not here. *You'll receive feedback on your evaluation plan in the W04 workshop.*

### **Formatting and Submission**

*Follow general instructions on course website / Deliverables.*

**Marking Scheme:** See tentative rubric at end of this document.

### **Deliverable Components**

#### **Evaluation Goals and Prototyping Plan (~1.5 pages)**

- a) *Human activity and central tasks:* Describe the human activity and list the 2-3 central tasks that your evaluation will focus on. (0.25 page)
- b) *Evaluation goals:* List 2-3 questions (your evaluation goals) your evaluation will address
- c) *Participant pool (outcome of Step 3):* Describe your participant pool. Do not use actual names or identifying details; do supply enough information to allow reader to assess whether these users might actually use your system if it existed, and in what role. (0.25 page)
- d) *Protocol (outcome of Step 5):* Summarize the study protocol and the techniques you will use. Include enough detail for someone to approximately replicate the evaluation. (< 0.5 page).
- e) *Evaluation Rationale:* Briefly justify your evaluation design. Supply enough information for the reader to assess the suitability of your choices in support of your goals (< 0.5 page).

#### **Appendices (no page limit)**

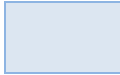
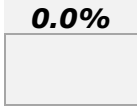
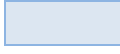

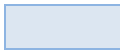



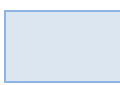
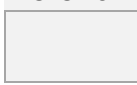
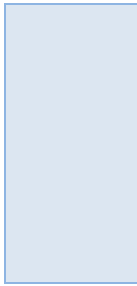
A.1) Append copies of ethics materials (to obtain TA sign-off):

- Consent form
- Recruitment form (if using)

A.2) Append copies of evaluation instruments (to obtain TA sign-off):

- Interview questions

**Marking Scheme (do not include in the submission)**

		<b>MARK</b>	<b>weight</b>
<b>Evaluation Goals and Prototyping Plan</b>		<b>0.0%</b>	<b>66.0%</b>
Topic, human activity and central tasks, and evaluation goals (a-b)		← 	22.0%
Participant pool and evaluation protocol. (c-d)		← 	22.0%
Justification of the evaluation (e)		← 	22.0%
<b>Appendices</b>		<b>0.0%</b>	<b>24.0%</b>
All required ethics materials and evaluation instruments are included and <b>prepared correctly.</b>		← 	24.0%
<b>Overall Quality</b>		<b>0.0%</b>	<b>10.0%</b>
Overall quality of work as presented as a whole e.g., organization, coherence, creativity, etc.		← 	10.0%
<b>Penalties</b>			
Up to 5% deduction for issues with <i>any</i> of: Submission; Presentation (professionalism, etc.) Formatting (coverpage, length, font size, etc.); Organization and quality of writing (spelling, grammar, etc.); Visuals and other supporting materials (understandable, annotated where necessary, etc.);			
<b>TOTAL:</b>		<b>0.0%</b>	<b>100.0%</b>

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**W05 CHECKPOINT DETAILS:  
Piloting Results and Status Update – Steps 7-8**

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<i>Type:</i> Group hand-in	<i>Form:</i> Written	<i>Expected Length:</i> ~1 page
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The checkpoint goal is to ensure your team is on track to complete your evaluations by the W05 workshop.

**Formatting and Submission**

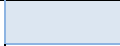
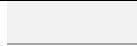
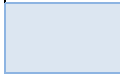
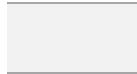
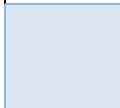

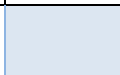
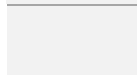
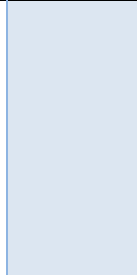
*Follow general instructions on course website / Deliverables.*

**Marking Scheme:** See tentative rubric at end of this document.

**Deliverable Components****Piloting Results and Status Update (1 page)**

- a) *Findings from Piloting:* Describe what you learned from your piloting (< 0.5 page)
- b) *Changes to evaluation:* Summarize the changes made to your evaluation plan in response to piloting. (< 0.5 page)
- c) *Status of Evaluations:* Describe what you've done out of steps 7-8. If your evaluation is not complete, explain how you plan to complete the remaining participants before the W05 workshop (< 0.25 page).

**Marking Scheme (do not include in the submission)**

	<b>LEVEL</b>	<b>MARK</b>	<b>weight</b>
<b>Piloting Results and Status Update</b>		<b>0.0%</b>	<b>85.0%</b>
Describes findings from piloting (a)	 ←		30.0%
Deliverable summarizes changes that were made to the evaluation plan and materials. (b)	 ←		30.0%
Deliverable summarizes status of evaluations, and outlines a plan for completing any participants that are outstanding (c)	 ←		25.0%
<b>Overall Quality</b>		<b>0.0%</b>	<b>15.0%</b>
Overall quality of work as presented as a whole e.g., organization, coherence, creativity, etc.	 ←		15.0%
<b>Penalties</b>			
Up to 5% deduction for issues with <i>any</i> of: Submission; Presentation (professionalism, etc.) Formatting (coverpage, length, font size, etc.); Organization and quality of writing (spelling, grammar, etc.); Visuals and other supporting materials (understandable, annotated where necessary, etc.);			
<b>TOTAL:</b>		<b>0.0%</b>	<b>100.0%</b>



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## W07 FULL REPORT DETAILS: Evaluation Report and Requirements – Steps 9-12

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<i>Type:</i> Group hand-in	<i>Form:</i> Written	<i>Expected Length:</i> ~4 pages plus appendices
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### Formatting, Filename, Submission

Complete the deliverable template, using general instructions on course website /deliverables. Submit (handin) a .zip file that contains two PDFs:

1. Report (including Appendix A).                      Filename: <team\_name>\_W06\_Report
2. Appendix B - Additional documentation.              Filename: <team\_name>\_W06\_AppendixB

**Marking Scheme:** See tentative rubric at end of this document.

### Deliverable Components

#### Summary of Evaluation and Analysis Results (~3 pages)

- a) *Evaluation Goals:* List the 2-3 questions (your evaluation goals) that your evaluation addressed. If your goals changed, briefly summarize the changes at the end (bullet list).
- b) *Evaluation Summary:* Describe participant pool (relevant attributes, number), methods (eval tools used), and protocol (list what you actually did - point form ok). (< 0.5 page)
- c) *Evaluation Rationale:* Justify all parts of (b). (<0.25 page)
- d) *Results. Analysis and Discussion (outcome of Step 9):* Report most interesting/representative results; then explore and discuss your evaluation questions through this data. Use carefully chosen tables, plots, or images; or text if results are mainly qualitative. We are looking for depth, thoughtful secondary analysis, and clear linkages between your questions and how you use your data. (1 -1.5 pages including key figures; add'l data can go in appendix)
- e) *Conclusions (outcome of Step 10):* Summarize evaluation conclusions, and critique your approach and execution (0.5 page)

#### Task Examples and Requirements (1.5 pages)

- f) *Task examples:* List 2-3 task examples a new system should support (~5-7 sentences each).
- g) *Requirements (Step 12):* Include requirements, prioritized as follows: a) must include; b) should include; c) could include; d) could exclude (bullet list; 0.5-0.75 page).
- h) *Justification:* Relating requirements to conclusions and analysis, Step 9. Explain the basis on which you determined their importance (< 0.5 page).

#### Appendix A (No page limit) – put in same pdf as report.

*Clearly mark appendices (separate each with a title sheet and start on separate page).*

- A.1) Actual evaluation instruments (e.g. question list for interviews)  
*Include a copy of **anything the subject saw** – e.g. instructions for completing a task.*
- A.2) (Optional) Supplementary analysis, if any (e.g., images for which you didn't have room in the report but feel should be included for completeness or clarity).

#### Appendix B - Additional Documentation - separate pdf from Report

*To ensure confidentiality of participant materials, include in a **second PDF**.*

- B.1) Signed '[Adherence to Ethics Protocol](#)' form (courseweb/Resources). One form per team.

B.2) Signed participant consent form(s) from the evaluation

B.3) Scanned raw data (e.g., interview transcripts, measurements). *Legible photographs okay.*

**Marking Scheme (do not include in the submission)**

	<b>LEVEL</b>	<b>MARK</b>	<b>WEIGHT</b>
<b>Summary of Evaluation and Analysis Results</b>		<b>0.0%</b>	<b>45%</b>
Evaluation goals - impact, relevance, completeness, measurability (a)	←		10.0%
Evaluation summary (b)	←		6.0%
Evaluation rationale (c)	←		6.0%
Data analysis and presentation (d)	←		7.0%
Evaluation conclusions (e)	←		6.0%
Overall effectiveness of evaluation	←		10.0%
<b>Task Examples and Requirements</b>		<b>0.0%</b>	<b>30%</b>
Task Examples (f)	←		15.0%
Requirements (g)	←		7.5%
Justifications of requirements (h)	←		7.5%
<b>Appendices</b>		<b>0.0%</b>	<b>10%</b>
Appendices A and B, complete and <b>prepared correctly</b>	←		10.0%
<b>Overall Quality</b>		<b>0.0%</b>	<b>15.0%</b>
Overall quality of work as presented as a whole e.g., organization, coherence, creativity, etc.	←		15.0%
<b>Penalties</b>			
Up to 5% deduction for issues with <i>any</i> of: Submission; Presentation (professionalism, etc.) Formatting (coverpage, length, font size, etc.); Organization and quality of writing (spelling, grammar, etc.); Visuals and other supporting materials (understandable, annotated where necessary, etc.);			
<b>TOTAL:</b>		<b>0.0%</b>	<b>100%</b>