

CPSC 444 Project Milestone IV: Prototype Evaluation, Final Recommendations, and Project Video

March 5, 2012

OVERVIEW	2
MILESTONE IV DELIVERABLES.....	2
A. EXPERIMENT EXECUTION	3
STEP 1: PILOT TEST YOUR EXPERIMENT	3
STEP 2: CONDUCT THE FULL EXPERIMENT	3
STEP 3: ANALYZE THE DATA AND PRESENT THE RESULTS	4
STEP 4: IDENTIFY LIMITATIONS TO THE EXPERIMENT	4
STEP 5: FORMULATE EXPERIMENT CONCLUSIONS	4
STEP 6: WRITE REPORT	5
B. FINAL PROJECT CONCLUSIONS, RECOMMENDATIONS, AND REFLECTION	6
STEP 7: FORMULATE FINAL OVERALL PROJECT CONCLUSIONS AND DESIGN RECOMMENDATIONS.....	6
STEP 8: REFLECT ON YOUR OVERALL DESIGN PROCESS AND YOUR EXPERIENCE DESIGNING AN INTERACTIVE SYSTEM.....	6
C. PROJECT VIDEO	7
STEP 9: PLAN YOUR PROJECT VIDEO.....	7
STEP 10: CREATE YOUR PROJECT VIDEO.....	7
MARKING	8
TENTATIVE HIGH-LEVEL MARKING SCHEME	8
MILESTONE IV DESIGN REVIEW	8

Overview

You have approximately **3 weeks** to complete this milestone. See course schedule for exact dates.

Milestone IV Deliverables

A. Experiment Execution

(up to 10 and ½ pages, not including appendices, which have no page limit)

A.1. Pilot Test (up to a 1/2 page)

A.2. Experiment Report (up to 10 pages)

+ Part A Appendices (A.I – A.V)

Appendix A.I: Blank versions of changed evaluation instruments or consent form that changed from MS III report (e.g. question list for interviews, questionnaire used for surveys, coding sheets, protocol for other types of observation). Clearly indicate what has changed since MS III.

Appendix A.II: Consent forms completed by participants. *Hardcopy submission only.*

Appendix A.III: Any team member who did not sign the 444 Ethics Protocol form in Milestone II must include a signed form here. *Hardcopy submission only.*

Appendix A.IV: Raw data (e.g., completed questionnaires, interview transcripts or measurements taken). *Hardcopy submission only.*

Appendix A.V: Supplementary analysis, if any (e.g., extra plots for which you didn't have room in the report but feel should be included for completeness).

B. Final Recommendations & Reflection

(up to 2 pages)

B.1. Final conclusions and recommendations (1/2 page to 1 page)

B.2. Reflection on your design and evaluation process (up to 1 page)

C. Project Video

C.1. DVD of project video (3-5 minutes)

After Milestone Submission

Mandatory attendance at design review with course staff.

A. Experiment Execution

You designed an experiment for Milestone III, which included setting evaluation goals, choosing target users, setting hypotheses and identifying the statistical analyses to be carried out. In this part of Milestone IV, you will carry out that experiment.

A reminder about the 444 ethics protocol: this milestone involves working with users. If not already done, 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.

Step 1: Pilot test your experiment

Run your experiment with 2 subjects to make sure there are no major glitches in the experiment protocol. In particular, pay attention to overall length of session, clarity of instructions given to the subjects, feasibility and appropriateness of the tasks, usefulness and utility of your other study instruments (questionnaires, interview scripts, coding sheets), your ability to operate the video equipment, and integrity of data collection overall (e.g., if you are using software logs, are they outputting the data correctly?).

Note: you cannot use the data from these two pilot subjects in the analysis of the full experiment, nor re-run them as full participants in Step 2.

Deliverable A.1. Pilot Test: briefly summarize what you learned from your pilot test, and any adjustments you made to the experiment protocol based as a result of the pilot test. Note that you may point the reader to the experiment description (A2 below) for the details of the changes.

Step 2: Conduct the full experiment

Next you will run the full experiment (adjusted from the pilot study as necessary). Based on your Milestone III deliverable and feedback from the course staff, you should have a clear idea how many participants is reasonable for your particular experiment design.

If you make any changes to your consent forms or evaluation instruments from the MS III versions, you will need to include the new versions with a summary of changes in **Appendix A.I**. This should be a blank copy of whatever the subject saw – e.g. the actual questionnaire, rather than just a list of the questions that were asked.

In Deliverable A2, you will very briefly summarize the evaluation design components, highlighting any differences from the more comprehensive evaluation plan provided in the Milestone III Report. For example, include a description of the representative users that you *actually* used as subjects, number of observations *actually* made, etc. (As with earlier milestones, you should not name the actual participants, but provide sufficient detail for the reader to assess their representativeness.)

Appendix A.I: Blank versions of changed evaluation instruments or consent form that changed from MS III report (e.g. question list for interviews, questionnaire used for surveys, coding sheets, protocol for other types of observation). Clearly indicate what has changed since MS III.

Appendix A.II: Consent forms completed by participants.

Appendix A.III: Any team member who did not sign the 444 Ethics Protocol form in Milestone II must include a signed form here.

Step 3: Analyze the data and present the results

Based on what you have learned in class to date conduct: (1) the planned quantitative statistical analyses, (2) any additional quantitative summarization (e.g., of numerical data, such as questionnaire responses), and (3) your qualitative summary of the data, which looks for themes, key representative examples, or any particularly interesting outlier responses. Where appropriate, you should be triangulating the quantitative and qualitative data.

*Think carefully about how to present your results for maximum visual impact. Use plots/graphs whenever it makes sense; these are usually easier for the reader to understand, and often have more compact. Raw data can go into the **Appendix A.IV**, which isn't subject to a page limit.*

In **Deliverable A2**, you will *report your quantitative and qualitative results*. Include mention of any outliers, any interesting demographic differences, and more generally any surprises.

Appendix A.IV: Raw data (e.g., completed questionnaires, interview transcripts or measurements taken).

Appendix A.V: Supplementary analysis, if any (e.g., extra plots for which you didn't have room in the report but feel should be included for completeness).

Step 4: Identify limitations to the experiment

At this stage you should be able to identify several limitations to the experiment you conducted. The following questions may help guide you in this process. Were there any threats to validity (of any of the different forms discussed in class)? To what extent did your prototype support the needs of the experiment? Were there procedural breakdowns that occurred during study execution? Did your hypotheses play out as you expected? If not, can it be explained by some problem in the way the experiment was run? Were the participants biased in any way (e.g., were any of them classmates, or were they the same as participants you used in an earlier stage of the project)?

In **Deliverable A2**, you will *summarize the limitations to your experiment*.

Step 5: Formulate experiment conclusions

Summarize what you learned from the experiment. This report will constitute the last item in **Deliverable A2**. Note that we ask you to stop short of making explicit recommendations here: these will be the focus of Part B.

CPSC 444 Project: Milestone IV

It is important that your report clearly distinguish the summary of your experiment findings from your decision of how to act on them. The latter might be influenced by additional considerations and this must be clear to you and others.

This part of the report needs to *summarize the key insights* gained from the experiment in terms of the key strengths and weakness of your interface (or interfaces, if you compared more than one prototype), the relative importance of these strengths and weaknesses as you have learned them from users, and how your view of the situation changed from prior to the evaluation. It is useful at this point *to reiterate positive characteristics of the current interface(s)*, as well as *to note deficiencies*.

Step 6: Write report

The content of the experiment report should follow the outline given in the ExperimentsII-Report.doc: description of the experiment, results, discussion, and conclusions. Note that some of what you include in the methods section here can be cut and pasted directly from the MSIII report (changing the tense from future tense to past tense to reflect what you actually did). Any *divergence* in the experiment methods from MSIII must be clearly marked, so that the reader can easily determine what has changed since that milestone.

<p>Deliverable A.2. Experiment Report: Describe the key details and the outcome of your evaluation.</p>
--

B. Final Project Conclusions, Recommendations, and Reflection

Step 7: Formulate final overall project conclusions and design recommendations.

Depending on the scope of your experiment and write-up in Deliverable A2, much of what is included in this step may already have been completed. Bottom line: you need to have project level conclusions and recommendations. Include them here, if they are not in A2.

Conclusions: Discuss what you can conclude about the quality of your overall interface design.

Recommendations: Decide what your results mean in terms of your interface's validation and next logical design step. Possible outcomes of this step would be, for example, (a) design validated as is; (b) minor adjustments needed, overall approach validated; (c) concept still worth investigating but serious problems identified; (d) design approach not validated. In the real world, the resulting action from any of these conclusions would obviously depend on many other factors as well.

Deliverable B.1. Final conclusions and recommendations: report your conclusions and recommendations. If components of these are covered in Deliverable A2, just say so. There is no need to duplicate them here.

Step 8: Reflect on your overall design process and your experience designing an interactive system.

The goal of this step is to first reflect openly on *the design process* you followed in this project. What aspects of the user-centered design process worked well for your project? What aspects did not work so well? This part is free-form, and there is no specific right answer. We are interested in your honest thoughts about what you've learned at the end of the day; and equally, where and how the project has *not* worked for you, and has *not* helped you see the point or methodology of user-centered design.

It is effective to do this in a brainstorm session with your group. Here are some questions to get you started:

- What were the most significant ways in which the design concept and the actual interface design changed under the influence of user involvement? What were the biggest surprises for you – the things you learned from or about users that you would not have predicted based on your own experience and intuition?
- Did the methods you chose for your evaluation and prototyping get at what you were looking for? In hindsight, would a different approach (process, not specifics of your interface) have been better?
- What were the most, and least, valuable among the methods you used, either generally or specifically for your project?

Deliverable B.2. Reflection on your design and evaluation process: report your reflections, as described above.

C. Project Video

Step 9: Plan your project video.

As is common with many HCI research endeavors, your team will create a 3-5 minute video that documents your project. The video should motivate your design concept and briefly cover your design methodology, salient aspects of your prototype's design, the evaluation conducted, and conclusions recommendations.

The reading http://www.chi2006.org/guide_video.php from the Video II Tutorial provides an effective overview on how to construct a good project video. In addition, sample videos will be shown in class as exemplars.

Planning for the video involves creating a rough script and/or storyboard that you can follow in Step 8.

There is no deliverable for your portfolio for this step.

Step 10: Create your project video.

To create your video you will need to judiciously select clips collected from the video data recorded in your experiment, as well as create new clips (e.g., motivating scenario), and do narration. These media components will be combined together according to your script/storyboard (from Step 9) using digital video editing techniques that you learn in the Video II Tutorial.

For those students who are interested in finding employment in HCI, a project video is a particularly effective way to showcase your project to future employers.

Important note about Ethics: recall that you must store any raw video media in a locked cabinet (similarly for any data that identifies participants). We recommend that once your project video has been created that you erase all your original video data from your media so that you need not worry about storage. If you would like to keep your video data for some reason, please consult the instructor.

<p>Deliverable C.1. DVD of project video: A 3-5 minute video burned on a DVD that runs without glitch on the X360 computers. Clearly label DVD with: your team name, CPSC 444, and date, place in a protective case in the portfolio.</p>
--

Note that the DVD will be kept as an archive by the course instructor. It will not be returned with the portfolio.

Marking

Tentative High-Level Marking Scheme

A. Evaluation Execution:	50-55%
B. Final Recommendations:	5-10%
C. Project Video:	40%

Milestone IV Design Review

Course staff will conduct a design review with each team at a lab session shortly after the deliverable's due date. The intent of this *final design review* is for you to discuss the results of your evaluation, your final recommendations, and your project video in a more detailed and interactive discussion than will be possible in the class presentation, and to get feedback on your plans for your project presentation (Milestone V).

Your prototype (from Milestone III) should be available to demo, on request, at the MSIV design review.