Assignment 3

System Implementation and Evaluation

Weight: 20% of your final grade

Due: after Unit 6 in Week 17

In this assignment, you will implement the low-fidelity prototype system that you designed in Assignment 1.


You should use either C++ or Java as the programming language. The use of other programming languages/tools requires tutor permission.

The main purpose is to give you experience in applying some of the design concepts you have learned from the course content in actual implementation, and to give you experience in developing a moderately sized and robust user interface.

Required Reading

Your evaluation should be based on a *heuristic evaluation of user interfaces*. In order to fully understand this approach and how to perform the evaluation as expected, you will need to read this paper:

> Nielsen, J., & Molich, R. (1990). Heuristic evaluation of user interfaces. In J. C. Chew & J. Whiteside (Eds.), *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems: Empowering People*. New York: ACM. doi:10.1145/97243.97281. Retrieved from https://0-doi-org.aupac.lib.athabascau.ca/10.1145/97243.97281

The actual prototype implementation should include and demonstrate how the following are addressed in your design: screens, error messages, handling of unexpected input, defaults, robustness, and others. The main aim of the prototype is to show that how the interface is designed and how it conforms to the main HCI design principles and guidelines; therefore, it is fine if you use dummy functionality stubs in your implementation instead of the actual functionality.

Once the prototype implementation is completed, you will need to evaluate it. You can do this by providing argumentation on how well your design follows standard HCI design principles. This should highlight the pros and cons of your design, and include recommendations for possible changes in the future.

Deliverables

1. Final report.

   Weight: 20% of assignment mark

   Length: ~10 pages (~2500 words) in Times New Roman 12-point font

   Your final report should include the following information:

   - Illustrations of your final implementation, using new screenshots
   - The results of the evaluation of your design:
     - List the problems detected, categorized by heuristics. Include a severity rating of the problems noted.

    - Summarize the main findings of your heuristic evaluation.
- Final design rationale and discussion of the state of your design. Discuss the quality of your system design. What parts of the design work well, and what still needs improvement? Do you really believe that the system would work well for your identified users and tasks?

2. A zip file containing the complete implementation of your project.

   Weight: 40% of assignment mark

   This must include a README file containing any special instructions for using the system (e.g., login names / passwords / things to input as data as part of the interface and installation guides). The zip file should also contain all of the source code and the required additional packages that have been used. The interface must be reproducible by your tutor.

3. Video.

   Weight: 40% of assignment mark

   Length: ~10 minutes

   In addition to the written report and the zip file, you will need to prepare a 10-min-long video presentation on your system and upload it to YouTube. The link to this video will need to be included at the end of the written report and submitted to the course tutor for marking. The video presentation will need to include the following information:

   - the project scope and purpose of design
   - the main tasks that are covered in the interface
   - description of how walkthroughs were performed
   - details of how different low-fidelity prototypes were developed and evaluated
   - brief overview of the implementation technologies used
   - discussion on the design rationale of your interface
   - screenshots of your designed interface

   You can use CamStudio (http://camstudio.org/) for this purpose.