Project (40%)

Welcome to the group project of CMPT 363! This project will let you experience a full cycle of the user-centered design (UCD) process, including requirements gathering, prototyping, and evaluation.

There are two parts in this project. In the first part (individual, 15%) you are going to conduct a Heuristic Evaluation on an interface, specify design requirements, and create prototypes implementing the design requirements. In the second part (2-student group, 25%) you are going to refine and evaluate your design, provide recommendations for improvement, and reflect on the process.

There are two submission deadlines: **Part 1 – Oct 14**, **Part 2 – Nov 25**. All will have until 11:59p on that day to submit (see the Submission section for more details).

For this part you do not need to form a group yet. We will provide you with more information when you need to form a group for the second part.

Overview

Your team is tasked to redesign the interface for the dining feature of SFU Snap app that allows its users to find information about dining on SFU campuses.

This document describes Part 1 of the project.

Part 1a: Heuristic Evaluation and Design Requirements Specification

First, familiarize yourself with the dining feature in the SFU Snap app. Then conduct your heuristic evaluation, similar to what you did for Assignment 1:

1. Familiarize yourself with the application as appropriate, completing tasks related to exploring and using the application. Consider the heuristics discussed in class as you use them and make note of problems and good aspects you encounter. Take into account that the target users are SFU members and what their typical tasks may be.
2. Use the provided usability inspection report template (in the same folder as this description document on Canvas) for your findings.
    - **Identify two usability problems** (where heuristics are being violated), including severity level 2 (minor), 3 (major) or 4 (critical), grouped by heuristic. Use screenshots to illustrate your findings (take the screenshots while you are identifying the problems, as later on the application might be updated and you might not be able to find it again).
    - In addition, **include two examples of good usability** (i.e., where a heuristic is met instead of being violated) within your report.
    - **summarize your overall process and the main findings** of your Heuristic Evaluation.

Note: the usability problems/good examples can either be something in general, or something that is specific to SFU members.

After that, using the materials taught in the lecture on requirements gathering, specify a set of design requirements as **improvements to the interface you evaluated**. The requirements should include:

- **Context identification**: The when/where/who/what/how (e.g., at home, on campus, in a different timezone, purpose of using the application).

- **User identification**: Who the users are, and what tasks do they perform in the context defined above. Come up with **2 personas**. Include characteristics and system use.
- **Two Functional requirements (FRs)**: Recall from the lecture on requirements gathering that functional requirements are those that describe "what" the interface should do. These can typically be identified from examining the functionalities provided by existing interfaces, or, if you have access to the end users, looking at the tasks they carry out (using techniques like Contextual Inquiry). **In this case they can be based on the usability problems you identified** (tip: begin with the problems, then think of others if you cannot think of any based on the problems). Come up with something that is non-trivial (i.e., not "system should allow user to add an event" for a calendar as this is what a calendar is created for) and does not exist in the current version.
- **Two Non-Functional requirements (NFRs)**: Recall from the lecture on requirements gathering that non-functional requirements are those that describe "how" the interface should function. These can typically be identified from evaluation of usability of existing interfaces and reference to regulations/policies, or, if you have access to the end users, their comments and feedback. **In this case they should be related to the functional requirements you established or the good usability examples you identified.** Come up with something that is non-trivial (i.e., not "an event must be added within 1 second after the user clicks the add button").

An example of basing your requirements on the usability problems or good usability examples you discovered in the Heuristic Evaluation is if you find that the interface does not provide enough information about an error in a particular situation, you can specify one of your requirements as providing the appropriate the error information in that situation (FR), and provide details on how it can be done (NFR) (e.g., what information should be shown, what actions can the user do in that situation).

Next, **for each functional requirement, illustrate your idea by including one sketch** in the appendix. These sketches can be drawn by hand or with a simple graphics software. They do not need to be functional but must be annotated to illustrate how the corresponding requirement is met.

Finally, **describe what the next step is** (hint: refer to the User-Centered Design process diagram). Again, assume the readers are developers who do not know about the details of this assignment (but are familiar with concepts such as UCD and design requirements) – your writing should thus be self-contained.

Part 1b: Low-Fidelity Prototypes

Starting with pen and paper, develop several low-fidelity prototypes (LFPs) that will satisfy all the requirements that you have established in Part 1a (you can reuse the sketches you created for the FRs). Then **select two designs** and create them in Balsamiq (name them as LFP1, LFP2).

For each LFP, in the submission document describe using **no more than two pages** on how the interface design satisfies **all the requirements**. These descriptions should also be included in the Balsamiq files as markup annotations or comments. Do your best to include 1-2 screenshots showing the overall look of the design. The rest of the illustrative screenshots can be added as appendix at the end of the document that does not count towards the page limit. In the corresponding Balsamiq file, if you cannot demonstrate a non-functional requirement in the interface design, write them as comments in the file.

When brainstorming/designing the interface, use the identified users, their tasks, and the requirements to help you come up with prototypes that illustrate how your interface would appear to them. You

should not be concentrating on prettiness or completeness; rather, you are trying to show the overall appearance and interaction style of your interface. Each prototype should contain the core screens that illustrate how the system will work as a whole, including simple interactions supported by the "Links" feature in Balsamiq.

Submission

Submit a zip file including your report (as a single PDF file, name it as Part1Documentation.pdf) and the prototype files (2 .bmpr files) to the corresponding folder on Canvas **by Oct 14**. Begin your report with a cover page stating that it is Project Part 1, followed by your information (full name, SFU email, and student ID). Name the zip file in this format: **Firstname_Lastname_9-digit-studentID_Project_Part1.zip**

Assignment late penalty: 10% per calendar day (each 0 to 24 hour period past due), max 2 days late.

Your report should be using 12-pt Arial font, single spacing, with 1-inch margins. **It should have at most 12 pages** (including the cover page). Exceeding this limit will result in mark deduction. Additional screenshots and sketches (e.g., for your Heuristic Evaluation and designs) can be added in the appendix and will not be counted towards the page limit. However, you must first put the important ones within those pages. A typical arrangement is cover page (p1), Heuristic Evaluation (p2-6), context identification, user identification, functional requirements, non-functional requirements, FR sketches, and the next step (p7-8), two selected designs and their LFP descriptions (p9-12), appendix.

Useful Resources

- Nielsen's heuristics: https://www.nngroup.com/articles/ten-usability-heuristics/
- ID-Book Chapter 11 Section 3: What are Requirements?

Notes on Heuristic Evaluation

As explained in the lectures Heuristics Evaluation is a form of Analytical Evaluation where users are not directly involved. Another evaluation technique suitable for this part is a small Usability Testing, where you design a set of questionnaires and tasks, and invite 3-5 representative users to use the interface in front of you and answer the questionnaires. Make sure you also familiarize yourself with this approach with the materials provided in the lectures as well as the reading materials.

Academic Honesty

It is expected that within this course, the highest standards of academic integrity will be maintained, in keeping with SFU's Policy S10.01, "Code of Academic Integrity and Good Conduct." In this class, collaboration is encouraged for in-class exercises and the team components of the assignments, as well as task preparation for group discussions. However, individual work should be completed by the person who submits it. Any work that is independent work of the submitter should be clearly cited to make its source clear. All referenced work in reports and presentations must be appropriately cited, to include websites, as well as figures and graphs in presentations. If there are any questions whatsoever, feel free to contact the course instructor about any possible grey areas.

Some examples of unacceptable behavior:

- Handing in assignments/exercises that are not 100% your own work (in design, implementation, wording, etc.), without a clear/visible citation of the source.
- Using another student's work as a template or reference for completing your own work.

- Using any unpermitted resources during an exam.
- Looking at, or attempting to look at, another student's answer during an exam.
- Submitting work that has been submitted before, for any course at any institution.

All instances of academic dishonesty will be dealt with severely and according to SFU policy. This means that Student Services will be notified, and they will record the dishonesty in the student's file. Students are strongly encouraged to review SFU's Code of Academic Integrity and Good Conduct (S10.01) available online at: http://www.sfu.ca/policies/gazette/student/s10-01.html.

