

## 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 are going to form a group with another student in your class. When you have formed a group, go to Canvas > People and assign yourselves to a team. This is the first thing you need to do before proceeding to complete the project, as Canvas will use this information and assign the same marks to all team members. **Group forming and team assignment must be done by Oct 21**. After that students who do not have a teammate might be assigned with someone randomly to form a group.

## Overview

Your group is tasked to redesign the interface for the dining feature in the SFU Snap app that allows its users to find information about dining on SFU campus.

This document describes Part 2 of the project.

### Part 2a: Context of Use & Requirements Establishment

After some survey, one piece of content that was frequently mentioned was the reviews of the dining places, which is missing in the current version of the SFU Snap app. So, a new feature to be added is a **review mechanism** within the dining feature.

At this point you will have two sets of evaluation results, design requirements, and LFPs from both members. If any of them aligns with the review mechanism, you can combine or reuse them (but you don't have to). Otherwise, you will have to come up with a new set that aligns with this new feature. Either way, create a report similar to what you did in Project Part 1 (read carefully as the number of things you need to include has changed for this part):

- **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 **3 personas**. Include characteristics and system use.
- **Three 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 must be relevant to the review mechanism**. Come up with something that is essential for this feature to work. When in doubt, look at other apps that support this feature for inspiration.

- **Three 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 must be related to the functional requirements you established.** Make sure you state the relationship clearly. Come up with something that is non-trivial (i.e., not “a review must show up within 1 second after the user clicks the add button”).

Based on this report, come up with some sketches and LFPs as a group. You do not have to submit the sketches and LFPs, but keep them as a record. To get diversity, each group member should create a few sketches and LFPs on their own. You should also realize that some people may be better at this than others; that’s ok – this is not supposed to be a competition!

### Part 2b: Medium-Fidelity Prototypes

Based on the LFPs in Part 2a, choose or combine them to create two MFPs using Figma. Here, you are going to create a horizontal prototype (named TeamX\_H-MFP, where X is your team number) and a vertical prototype (named TeamX\_V-MFP, where X is your team number).

Start with a few sentences in the submission document explaining the how you came up with the MFPs, for example, the steps you took to create the sketches and LFPs and decisions you made in choosing or combining the LFPs. Then include the following:

- **Horizontal MFP:** In about 1-2 pages explain how this design satisfies those requirements. Do your best to include a few screenshots showing the overall look of your design in those pages, the rest can be added as appendix at the end of the document that doesn’t count towards the page limit. should be “interactive” in that we should be able to click around in the interface. The prototype should not contain any wireframe components (e.g., content container with no content) and must show your whole system satisfying the requirements you established in Part 2a.
- **Vertical MFP:** In about 1-2 pages explain how this design satisfies the associated requirements you established in Part 2a, also provide the interaction steps we need to follow. Do your best to include a few screenshots showing those steps, the rest can be added as appendix at the end of the document that doesn’t count towards the page limit. The prototype should implement a substantial part of your interface, meaning that examples of the more interesting/important features (screens, error messages, handling of unexpected input, defaults, etc.) should be demonstrable. You may leave some of the interactive elements as stubs (e.g., just show an “under development” message or screen). One way to choose the feature is to look for a meaningful task that makes your design unique (e.g., do not do a vertical implementation of log-in/out).

It is not uncommon to start with the H-MFP, then create the V-MFP from it by developing more content for the feature that you want to implement. **Both MFPs must start with the Dashboard screen.**

Finally, in a few sentences discuss what you have learned from designing the MPFs, for example, the considerations/trade-offs you had/made in selecting the design components, what couldn’t you do/show using the prototyping tool, and any strength/weaknesses of your design (be honest, we won’t judge your design if you pointed out the weaknesses). 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 2c: Analytical Evaluation & Reflection

Good job! You have reached the last part of the project! There are four components in this part. They have different submission formats, methods, and deadlines.

### Component 1: Cognitive Walkthrough

Design a cognitive walkthrough activity to evaluate the V-MFP you made in Part 2b and find one person (not from your team) to evaluate it with you. Follow the steps listed below:

- Come up with the context and a scenario within which your application will be used.
- Determine who the potential/target users are based on the personas you developed in Part 2a.
- Create **two representative tasks** supported by the V-MFP and describe the exact sequence of actions required to complete each task. Be careful not to “give away” what the evaluator is supposed to do (e.g., “click the button that says ‘add user’ at the top right corner” – **Not OK**, “proceed to add a user” or “tell the system to add a user” – **OK**). Put this sequence into Table 1.
- Find someone in your class (to simulate a UX expert) and conduct the cognitive walkthrough with them by informing them about the context and scenario, showing them the V-MFP, and having them to perform the task. Ask them questions at each action and fill out the rest of the table. Write notes on the side (as an extra column) if you notice anything interesting or if they provide any useful suggestions/comments. To do it remotely, the evaluator will share their screen using the V-MFP, while your team will walk them through the steps on the other end.
- Summarize your results by describing how the prototype supported the tasks. Highlight strengths about the design (supported by comments from the evaluator) and any weaknesses (evidenced by issues arose during the walkthrough). Provide suggestions on how to improve the design. Use screenshots/images to illustrate your points when appropriate.

Action Sequence	<i>Does the user know what to do given the action?</i>	<i>Can the user find the right interface component to perform this action?</i>	<i>Can the user associate the feedback from the interface to the correct action they perform?</i>	<i>Does the user understand the feedback so that they know where they are in the task after performing the correct action?</i>
<b>Action 1:</b>				
<b>Action 2:</b>				
<b>Action 3:</b>				
...				

Table 1. Action sequence and questions for Cognitive Walkthrough. One task per table. State the task in the caption.

Your submission document must include all the steps listed above. For details of each step refer to Lecture Slides for Week 10. **Keep this section to 4 pages.** 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.

### Component 2: Reflection

Reflect on the steps you have taken from Part 1 to completing the Cognitive Walkthrough. Discuss what you have learned by practising each step and how it brings your design closer to the final product. These

steps include (but not exhaustive, you can add the activities you have done to facilitate these steps): Heuristic Evaluation, Requirements Gathering & Specification, Prototyping, and Cognitive Walkthrough.

You can use screenshots/images to illustrate your points. **Limit this discussion to 3 pages.**

### Component 3: Demo Video

Create a short (3-4 minutes) video that walks us through your H-MFP and V-MFP. Show the key features of the prototypes (watch the demo video of FlexCase in Useful Resources for ideas, though you are not expected to have that level of polish). Besides the time limit, here are some extra requirements:

- Include information about your team. Keep it less than 10 seconds.
- Start with a brief overview of the project, what it is designing and for whom it is designing.
- Encoded as an MP4 using the H.264 codec.
- Resolution of at least 1280px x 720px.
- Use 16:9 aspect ratio.

Submit your video as a separate file using the “Add Another File” function in the Canvas page.

### Component 4: Individual Team Contribution (due on Dec 2, 11:59p)

This is an individual component. Each member needs to download the contribution form provided in the Canvas page and fill out the form on their own. This includes percentage of contribution to the overall project (the percentages should add up to 100%, not everyone contributed 100%), and justification (e.g., list what you have help creating/conducting). We will use this to adjust the final marks for each member.

Be honest. If there is a big discrepancy between your evaluation from yourself and from others, we will likely be using the majority evaluation plus additional deduction for dishonesty.

Submit this form to a separate Assignment entry on Canvas.

### Submission

Submit a zip file including your report (Part 2a, Part 2b, and Components 1&2 of Part 2c in a single PDF file, name it as Part2Documentation.pdf) and the two MFPs from Part 2b to the corresponding folder on Canvas **by Nov 25**. Begin your report with a cover page. Only one person per team needs to submit the report. Name the file as (X being you team number on Canvas): **TeamX\_GroupProject\_Part2.zip**

Submit the **demo video** to the same Canvas page and name it as **TeamX\_GroupProject\_Part2\_Demo.mpg**. Don't forget to replace X with your team number on Canvas.

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

Submit the **contribution form** to a separate Assignment entry to Canvas by **Dec 2**. This must be done individually. This is a hard deadline and missing it will lead to marks deduction.

### Overall Layout and Format of the Submission Document

**(1 page of cover page)** Stating that it is Group Project Part 2, followed by your team number, information of all your team members (names, SFU emails, and student IDs). **(3 pages max)** Begin your report with all the content for Part 2a. **(4 pages max)** Then continue with Part 2b. **(4 pages max)** After that Component 1 of Part 2c (some content will look like Part 2a but they should be presented again in the form of a script informing the evaluator). **(3 pages max)** Finally present your reflection as Component 2 of Part 2c.

Your report should be using 12-pt Arial font, single spacing, with 1-inch margins. **It should have at most 15 pages** (including the cover page). Extra screenshots or sketches of your prototypes can be added in the appendix which will not be counted towards the page limit. Only include those relevant to this Part.

### Useful Resources

- How to conduct a Cognitive Walkthrough: <https://www.interaction-design.org/literature/article/how-to-conduct-a-cognitive-walkthrough>
- ID-Book Chapter 16 Section 2: Inspections: Heuristic Evaluation and Walk-Throughs
- Screen recorder: OBS: <https://obsproject.com/>
- Video editor: OpenShot: <https://www.openshot.org/>
- Sample demo video: FlexCase: <https://www.youtube.com/watch?v=B3gp9CMiVf4>

### Notes on Cognitive Walkthrough

As explained in the lectures Cognitive Walkthrough 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 will design a set of tasks and questionnaires, invite 3-5 representative users to use the interface in front of you and answer the questionnaires. Additionally, you can adopt the think-aloud approach to gain further insights into the thought process of the users. Make sure you also familiarize yourself with the usability testing approach and 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>.