CSC 355 – Final Project
Fall 2022

The purpose of this project is to provide you with hands-on experience with the specification and design of user interface (UI) software. It will help you:

- understand the impact of a good vs. bad design
- find solutions and create innovative design ideas
- apply UI principles and methods to the design
- apply accessibility design principles

This is a team project; each team should have 4 or 5 members. Each member should have a significant contribution to each stage of the project.

Goal:
Design, implement, and evaluate a novel user interface that either addresses a specific need of a group of users with a disability, or that is intentional about following principles of Universal Design and is accessible to users with diverse abilities.
You may use any platform and any interaction device. Consider using the webcam, microphone, speakers, like you did in Homework 5, or you can use your own devices. Using traditional interaction devices is also acceptable.

As you learned in class, a real HCI project relies heavily on user evaluation. Your project will be evaluated by your classmates at the end of the semester, but you can also reach out to your friends for additional evaluation.
Teamwork is important. As you brainstorm ideas, consider how team members will collaborate and share resources.

Milestones:
1. Team makeup. Complete team makeup due on Canvas by Tuesday, October 18.
2. Project proposal. Written document and in-class presentation due on Monday, October 24.
3. Coding Milestone #1: Code that compiles and runs, and has one or two of the final features implemented. Due Thursday, November 3.
4. Coding Milestone #2: Code that compiles and runs, and has most of the final features implemented. Due Monday, November 28.
5. Final code. Due on Canvas on Monday, December 3.
6. Demo and evaluation data collection in class on Thursday, December 8.
7. Final report. Due on Canvas on the day of the final exam.
8. Final presentation. In class, during the final exam time slot.
9. Peer evaluation. Due on Canvas by the end of the day after final presentations.

Grading:
Team makeup submitted on time: 5%
Proposal: 15%

Coding Milestone #1: 10%
Coding Milestone #2: 10%
Final code: 25%
Final presentation: 10%
Final report: 20%
Peer evaluation submitted on time: 5%

Proposal Requirements:
Your proposal should include the following sections:

- *Definition*: Define the problem that you are trying to solve. Why is it a problem? What solution exists today? How is your proposed solution better than what exists today?
- *Requirements*: How did you go about gathering the requirements? What are the requirements? What are the accessibility requirements?
  This is where you finalize what exactly your project is going to do. This will be a list of features that you are planning to implement, and plans to evaluate them. I will use this list to determine how well you have delivered what you promised.
- *System*: What is your proposed solution? What technologies are you going to use? Have you looked into similar technologies that exist? Are you sure that you are not reinventing the wheel?
- *Evaluation*: Details of your evaluation plan. Who are your users? What evaluation techniques are you going to use?
- In addition, your proposal should have a title, and the writeup should list the names of your team members.

In class presentations should be 10 to 12 minutes (plus a couple of minutes for questions) and should have Powerpoint or equivalent media. Each team member should contribute to the presentation.

Coding Milestone #1 Requirements:
For this assignment your team will present the current version of the project to me in class. The presentation should be informal. You will demo the existing features, talk about the challenges you encountered so far and how you addressed them, and about your plan for the features that are left to be implemented. I would like to see at least two features from your proposal implemented. I will also want to take a brief look at the code, and hear about everyone's contributions.
No submission is required for this milestone. You will receive a team grade that will be entered in the final project rubric.

Coding Milestone #2 Requirements:
Just like the previous check-in, for this assignment your team will present the current version of the project to me in class. The presentation should be informal. You will demo the existing features, talk about the challenges you encountered so far and how you addressed them, and about your plan for the features that are left

to be implemented. I would like to see most of the project implemented. I will also want to take a brief look at the code, and hear about everyone's contributions.
No submission is required for this milestone. You will receive a team grade that will be entered in the final project rubric.

Final Code Requirements:
By the deadline submit your entire source code in one zip file on Canvas, or send me a message with a link to your github repository. If you plan to update your github repo after the deadline, make sure you tag the latest version before the deadline.
Your code should be packaged with a "new developer" scenario in mind: imagine a new developer is joining your team, and you are sharing all the details of your project with her.
Make sure all your code is well commented, with descriptions of each function and method, as well as larger chunks of code. Include a readme file that explains what each file is, how the files work together, and how to compile and run everything. From a user standpoint, your program should include instructions that are easy to find and easy to follow.

Demo:
You will be required to demonstrate your project and collect feedback from your classmates (and possibly other visitors) in class on Thursday, December 8. Make sure you demonstrate every feature that you have implemented. Remember: this is the final version of your code and you are not allowed to make any changes to it in preparation for the presentation.

Final Project Report Requirements:
Your final report submission should be a zip containing two files: a pdf with your report, and the ppt (or equivalent) file that you used for the demo.

Your report should include the following sections:

- *Definition*: Define the problem that you are trying to solve. Why is it a problem? What solution existed before? How is your solution better than what existed before?
- *System characteristics*: Describe how your system works. What are its main features? What are its additional features? How is the system accessible to groups with differing abilities? Include screenshots of the main functionalities.
- *Implementation*: How did you implement your solution? What are the different components of your system? How do they communicate with each other? What language(s) did you use? What algorithms did you use? Did you come up with new algorithms, or did you use existing ones?
  What challenges did you encounter? How did you address them?
- *Evaluation*: How did you evaluate your system? What user categories did you use? Which of the evaluation methods we studied in class did you choose and why? Be specific: what did you ask your users to do, what did you look for.

Include any surveys that you may have used. What are the results of your evaluation? How do you interpret these results?

- *Teamwork*: List the contribution of each team member to every step in the project. Describe how you collaborated.

There is no page requirement for your report. Make sure you address each question above with enough detail.

Your presentation should be no more than 15 minutes long. You will have 5 additional minutes for questions. Each team member should contribute. The presentation should include the same sections as the paper, plus a live demo of your system.
Presentations will be held during the final exam time slot.
The order of presentations will be determined by a random drawing.