

HCI Project Overview

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CIS 4930 / CIS 6930
Fall 2024

Goals

- Conceptualize and ground ideas in HCI concepts and theories
- Learn and gain experience with the cycle of design, development, and evaluation
- Focus on an iterative process for evaluating and improving an interactive system
- Apply the appropriate evaluation methodology in a specific context
- Analyze and select from among different approaches

Overview

- Design, develop, and evaluate an interactive system involving a human-computer interface

Overview

- Main steps:
 1. Decide on what type of project you want to pursue
 2. Think of a project idea
 3. Design and prototype an interface/system
 4. Develop/implement the interface/system
 5. Develop a plan of how to evaluate the interface/system
 6. Conduct a final evaluation/study

Novelty

- **Aim to do something novel**
 - Not just be “I want to make a thing”
 - Convince me and your audience that you’re doing something innovative and different through your literature review
 - Why will anyone be impressed with what you propose?
 - **Need a strong motivation or rationale**
- **Different ways to achieve novelty**
 - New technique?
 - New design?
 - New context?
 - New data?
 - New method?
 - ...Other ways?

Project Teams

- Teams 4-5 students
 - Undergraduate teams, and graduate teams
- Honesty is good:
 - I'm not good at _____
 - I've never done _____
 - I'm good at _____
 - I don't want to have to _____
 - I want to learn how to _____

Team Collaboration

- Work closely with your team, but try to divide up work efficiently
- Using existing code snippets and libraries is ok and encouraged:
 - Cite your sources!
 - Acknowledge use of existing components
 - Plagiarism and integrity rules apply
- Seeking external advice is ok, but all final ideas must come from you and your team

Project Milestones and Deliverables

- Project is worth 45% of the course
 - Project groups (9/10)
- Milestones:
 - Project proposals (9/29)
 - Interface/system design (10/20)
 - Implementation/interface and evaluation plan (11/17)
 - Final report / evaluation (12/8)

Weighted Grading

- All milestones will be graded out of 100
 - Details for each milestones will be given later
- Each milestone you will rate your teammates in terms of amount of work
 - Points will be from teammate ratings

Report Document

- Report
 - Format must follow the ACM full paper format available here:
https://www.acm.org/binaries/content/assets/publications/word_style/interim-template-style/interim-layout.docx
 - Latex templates can also be found here:
<https://www.acm.org/publications/proceedings-template>
 - - 5% from grade if you do not use format
 - At least 5 pages and a max of 8 pages
 - Submit as a PDF document

Report Document

- **Standard sections for research papers (should be modified as needed):**
 - Abstract
 - Introduction
 - Related work
 - System description
 - Study description
 - Data analysis
 - Results
 - Discussion
 - Conclusion and Future Work

Grading Criteria

*Criteria will be applied for each project component as appropriate

- Motivation and goals
(explanation of problem, need, goals)
- System
(appropriateness, completeness, quality)
- Study design
(method, validity, relation to HCI concepts)
- Literature completeness
(relevance, quantity, coverage, relation)
- Reported results
(data points, appropriate reporting)
- Presentation
(professionalism, clarity, writing)

Plagiarism Warning

- **Do not** copy sentences from papers
- **Do not** copy sentences from papers and change some words
- Any extent of plagiarism will not be tolerated

Video

- Submit in any common video format (.mp4, .avi, .mov, etc.)
- Be mindful of copyright licenses
 - Use creative commons assets as far as possible, and give the proper attributions when required

Video

- **Some guidelines for video preparation:**
 - Plan your shots and create a script!
 - Focus on presenting your project's contribution
 - Should be interesting/appealing
 - Motivation should be clear
 - Video should not explain related work or future work
 - Show your system in action
 - Present a brief summary of key results
 - Voice-over or text overlays is strongly recommended
- **Some examples of videos to refer to from the CHI 2019 video showcase:**
 - <https://youtu.be/ypVWIWcR7Qk>
 - https://youtu.be/w_I4WIOzNQw
 - <https://youtu.be/YVQLQhVWdHg>

Milestones

Tentative Deadlines

- **9/10 – Groups**
- **9/29 – Proposal**
- **10/20 – Initial Design**
- **11/17 – Implementation Demo and Evaluation Plan**
- **12/8 – Project Due**

A. Project Pitches

- **Goal:** Present your project idea and convince me (and the class) that it is a project worthy to be pursued
- 1 min to 3 mins video presentation per group / report
- Cover:
 - What the idea is
 - Why should the HCI community care about it (motivation/rationale)
 - What will it contribute (your expected outcomes of the project)
 - What you envision doing in the project

A. Project Pitches

- **Some guidelines for project pitches:**
 - A lot of things can be said in 1 min. Craft and plan your speech carefully.
 - Use slides (visuals) to highlight key aspects. Don't cram all the detailed information in your slides.
- → While your idea does not have to be fully concrete yet, aim to present an idea that is reasonably narrow. Ideas that are too vague will lose points.
 - E.g., I want to develop a system to improve people's experience of websites.

B. Project Interface Design

- **Goal:** To present a preliminary vision of what your system and interface will look like and get feedback
- ~5-minute presentation per group (in person)
 - 3 / 4 mins for critiques and suggestions from class
- Cover:
 - Reiterate very briefly what your project is about
 - Present wireframes of what your system interfaces will look like
 - Describe how the presented system/interfaces will contribute to your project

B. Project Interface Design Presentations

- **Some guidelines:**
 - Present an overarching view of how the different components of your system or interface screens relate to each other
 - Focus on well-annotated screen diagrams
 - This presentation should focus on visuals instead of text

C. Interface Implementation

- **Goal:** To show your created system using the class feedback
- Each group needs:
 - Interface designs (modified as needed from before)
 - 4-minute video of demo of system
 - Report

D. Evaluation Plan

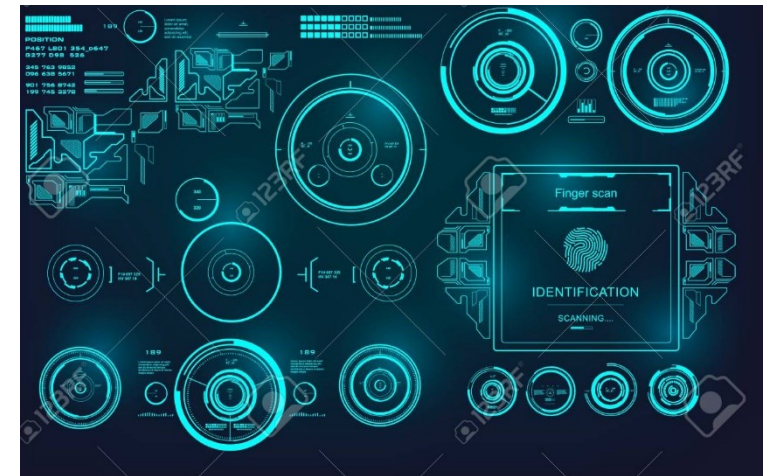
- **Goal:** To enable you to obtain preliminary feedback about your evaluation plan
- Each group needs:
 - Full system on target platform
 - Evaluation/study plan

E. Evaluation / Final Report

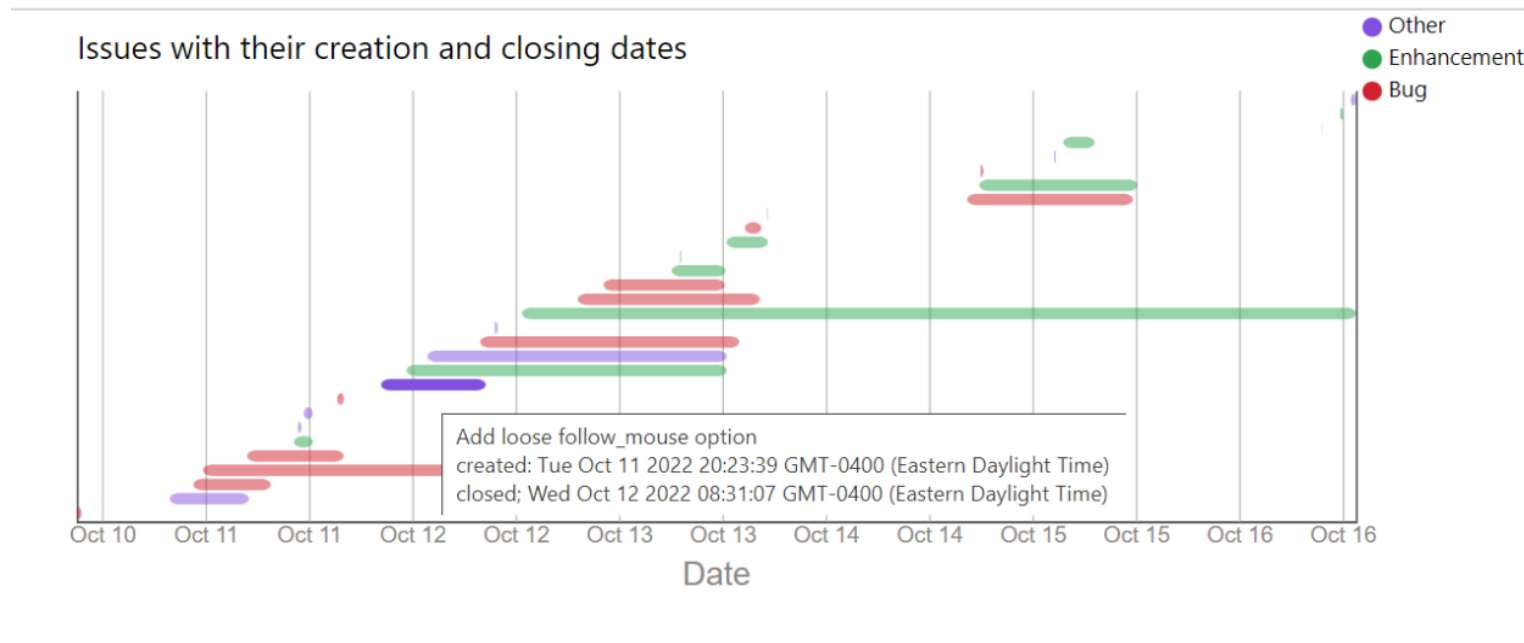
- **Goal:** To conduct user studies and report your findings
- Each group needs:
 - Have completed user studies / analysis
 - Video of full system functionality / results
 - Full report

Example:

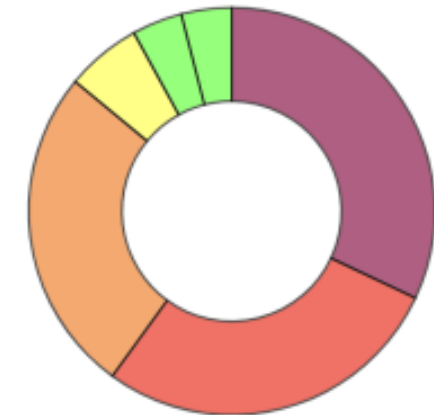
- Glanceable Interfaces for Real-Time Instruction Support:
- Teaching involves a high degree of multitasking and cognitive burden
- Does a color-based system that visualize students' level of attention in class support the teacher more effectively than a meter-based system?
- Implement a color-based visualization system and a meter-based system suitable for classroom use
- Evaluate effectiveness on reducing the teacher's cognitive burden



Previous Class Examples (Grad)



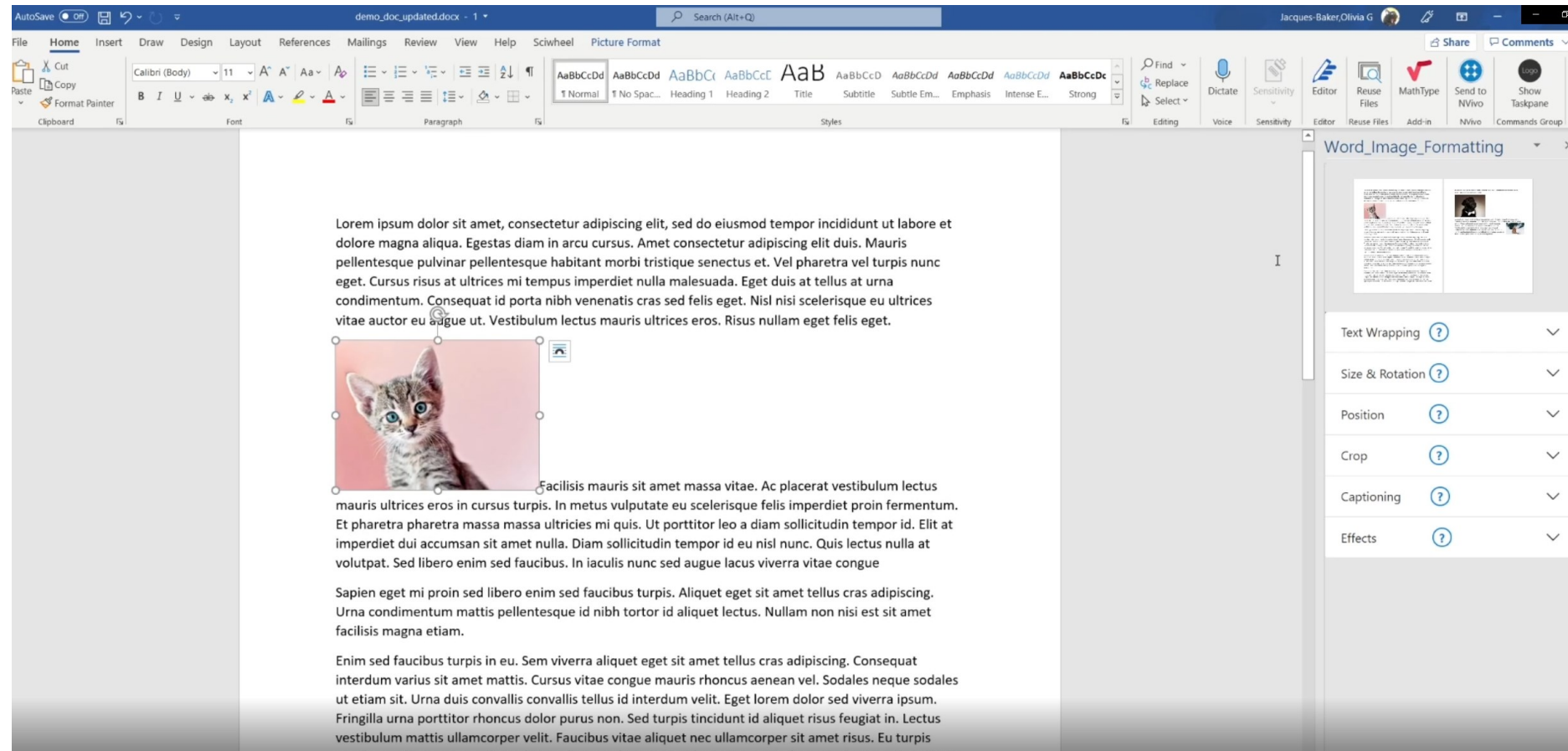
File update summary



(c) Summary of Updated Files

GitHub Activity Visualization (Current vs. Redesign)

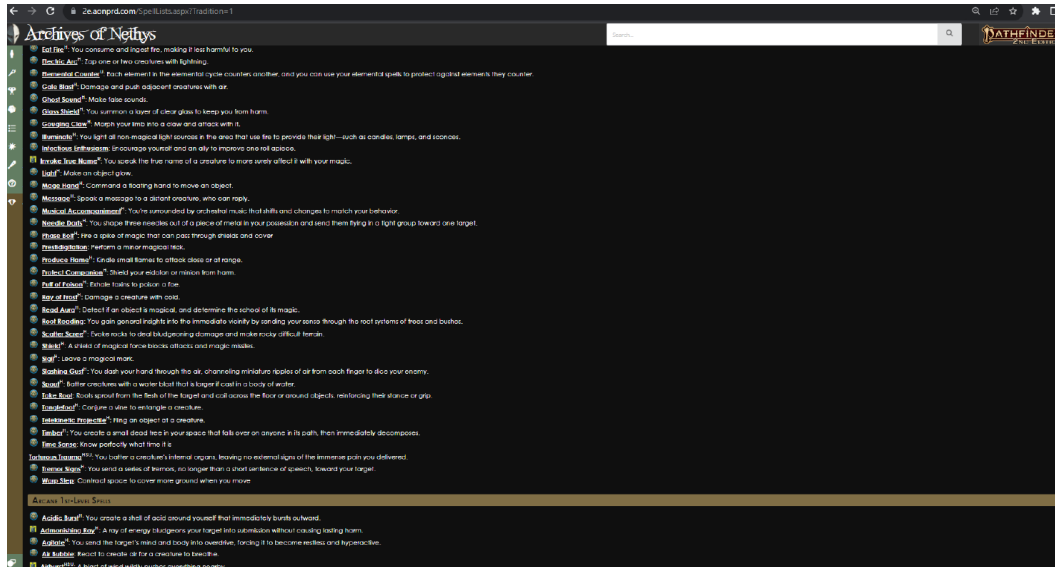
Previous Class Examples (Undergrad)



Microsoft Word Image Formatting (Current vs. Redesign - External Plugin)

Previous Class Examples (Undergrad)

Pathfinder: Finding Spells



VS.



Previous Class Examples (Undergrad)

COP 4530 Data Structures

Section 1
CRN: 16118
Professor: Taseef Rahman
Max Seats: 140
Available Seats: 25

Format	Days	Time	Location
In-Person	Tuesday Thursday	5:00 PM to 6:15 PM	ISA 1051

COP 4530 Data Structures

Section 2
CRN: 16120
Professor: Valentina Korzhova
Max Seats: 140
Available Seats: 74

Format	Days	Time	Location
In-Person	Tuesday Thursday	2:00 PM to 3:15 PM	CWY 107

REGISTER

CLEAR SCHEDULE

SELECTED CLASSES

	Mon	Tue	Wed	Thu	Fri
8am					
9am					
10am					
11am					
12pm					
1pm					
2pm					
3pm					
4pm					

REGISTER

CLEAR SCHEDULE

SELECTED CLASSES¹

	Mon	Tue	Wed	Thu	Fri
8am					
9am					
10am					
11am					
12pm					
1pm					
2pm					
3pm					
4pm					
5pm					
6pm					
6:30 - 7:45	Computer Logic and Design		6:30 - 7:45 Computer Logic and Design		
7pm					

USF Course Schedule System (Current vs. Redesign)

Projects

- You will need to **compare / analyze two versions**
- Existing System / Interface vs. Redesign
- New System / Interface (Design A vs. Design B)