



# CSIT226 Human Computer Interaction

## Group Project – Spring 2022

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### OVERVIEW OF THE PROJECT AND INSTRUCTIONS

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You will form a group of two (2) to six (6) students. Each group is to become a team to design the front-end (interfaces and interactions) of a system to solve an open complex information systems problem. In some weeks there will be time allocated in the labs for students to meet with their group members to work on the project.

Assessment for the project is based on the argument(s) developed for your system interfaces, the quality of the research used to support the interfaces developed, the ability to interpret what you have researched and the fluency of your written report.

You will be required to review each group members' performance through both self- and peer- assessment. The subject coordinator will use this information to gain an understanding of individual participation and group contribution towards the project. This will also be used in determining individual marks for the group project (members will not necessarily be given the same marks).

### ASSESSMENT DETAILS

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Assessment Items & Format	% of Final Mark	Group/ Individual	Due Date	Subject Learning Outcomes
Group Project - Part A - Understanding Users - Research	20%	Group	09 Sep 2022 by 11:30pm	1,2
Group Project - Part B - Prototyping - Design	20%	Group	14 Oct 2022 by 11:30pm	3,4,5
Group Project - Part C - Video Presentation	10%	Group	Week 12 Workshop	1 - 5

### COMPLEX COMPUTING PROBLEMS

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This assessment has been created for groups to identify and design the user interfaces and interactions to solve a 'Complex Computing Problem' (based around the Seoul Accord<sup>1</sup>). Section D – Graduate Attributes of the Seoul Accord identify the role of a computing professional and D.4.1 discusses the concept of a 'Complex Computing Problem'.

### POSSIBLE PROJECT DOMAINS

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Initially, groups must choose a domain for their group project (from the list provided below). Groups then need to research and identify a specific issue in the domain that they want to develop a new system for (remember that you are only developing the user interfaces and interactions). Groups then need to research the kinds of systems that currently exist in their chosen domain and conduct an analysis of the issues with the systems and identify areas how they can be improved.

This year the domains come from the UN Sustainable Development Goals: <https://www.un.org/sustainabledevelopment/> or can be a student defined project as approved by Dr Tootell. To start the project, either read the website and consider the 17 Goals<sup>2</sup>;

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<sup>1</sup> See: <https://www.seoulaccord.org/index.php>

<sup>2</sup> See: <https://www.undp.org/content/undp/en/home/sustainable-development-goals.html>



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AUSTRALIA

GOAL 1: No Poverty  
GOAL 2: Zero Hunger  
GOAL 3: Good Health and Well-being  
GOAL 4: Quality Education  
GOAL 5: Gender Equality  
GOAL 6: Clean Water and Sanitation  
GOAL 7: Affordable and Clean Energy  
GOAL 8: Decent Work and Economic Growth  
GOAL 9: Industry, Innovation and Infrastructure

GOAL 10: Reduced Inequality  
GOAL 11: Sustainable Cities and Communities  
GOAL 12: Responsible Consumption and Production  
GOAL 13: Climate Action  
GOAL 14: Life Below Water  
GOAL 15: Life on Land  
GOAL 16: Peace and Justice Strong Institutions  
GOAL 17: Partnerships to achieve the Goal

Review the SDGs in Action App (<https://sdgsinaction.com/>) and the information on the ActNow App (coming soon <https://www.un.org/en/actnow/>) “a mobile app in support of ActNow, offering a gamified experience for individuals to embark on a sustainable journey”.

Groups are to choose a single project: either one UNSDG or self-defined; and build an application (interfaces and interactions) around making changes to support your chosen goal. Groups need to consider the target audience of the application and whether it would be for individuals or used within a particular industry. Consideration should be given if you are going to develop an e-commerce tool, educational tool (could be gamified), tracking tool etc. Consideration for some systems around having an administrative interface for updating content presented to users would also need to occur.

*Remembering that there are marks for the overall creativity and innovation of your designs and project idea.*

## POSSIBLE TECHNOLOGIES AND APPLICATION ENVIRONMENTS

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Groups must identify the technologies that will be used for the system being developed. This should only occur after a clear understanding of the problem domain and potential users/stakeholders. These could include (but are not limited to):

- Traditional computers (desktops and notebooks)
- Tablets
- Smartphones
- Smartwatches
- VR/AR devices
- IoT devices

For the different technologies, groups would also need to consider the application environment that will be used in the design of the interfaces. For example, for traditional computers will a desktop application or a web-based application be designed?

Groups will need to consider design patterns and if any HIGs need to be followed.

Groups will also need to consider how the end-users would interact with the devices.

***All design decisions must be grounded in the literature and prior system design research.***

## TYPICAL REPORT STRUCTURE

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A professional report *typically* has the following structure:

- Letter of transmittal – addressed to the recipient of the report.
- Title page
- Glossary / List of abbreviations
- Executive Summary
- Table of Contents (possible List of Figures / List of Tables)
- Introduction
- *{Body Text} this is split up under different headings depending on the nature and content of the report*
- Conclusion

- References
- Appendices

**Note:** It is expected that the report is created in a professional manner using the inbuilt features in word processor software (e.g. MS Word, Google Docs) for creating headings, figures and captions, sections etc.

## PART A - OVERVIEW

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Part A is designed for groups to show that they understand the domain that they are working with, potential users/stakeholders, develop personas and scenarios and initial system requirements.

Groups will initially have to conduct research about the domain that they will be working with and identify current systems or applications that are used. Groups will then need to identify the potential users (also stakeholders) and start to think about the problems that they could be facing. This would form the basis of the methods chosen for data gathering (e.g. interviews, focus groups, questionnaires).

### POTENTIAL {BODY TEXT} FOR PART A

The following is one method to present the body of the report:

- Problem Domain
  - *Linked to your chosen area (UNSDG or self-defined)*
  - *Type of overall application to be developed*
- Current Systems Evaluation
  - *An evaluation of current systems that have similar features (these may not directly relate to the chosen topic)*
  - *Could also use an analogous system as part of the evaluation focusing on features*
- Stakeholder Analysis
  - Users
    - Primary
    - Secondary
    - Tertiary
  - Non-users
    - *Impacted by the system use*
- Persona[s]
- Scenario[s]
- Storyboard[s] presented along with detailed descriptions
- Initial Requirements

## PART B - OVERVIEW

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Part B of the assessment is for you to demonstrate your creativity and innovation in coming up with your UI and UX for your chosen domain. There are numerous methods to demonstrate an iterative design approach and how to document this.

Groups should focus in detail on one or two scenarios of how the system would work allowing for greater depth in the details of a smaller aspect of the system rather than presenting hundreds of diagrams with limited explanation.

The focus should be about your group being able to justify your selection of design patterns and interaction sequences.

### TYPES OF DIAGRAMS

The following are some of the types of diagrams that are expected in Part B:

- Storyboards
- Wireframes and 'wireflows'
- Lo-fi prototypes
- Hi-fi prototypes



*When creating diagrams to present to a client on the user interface of the system, visual representations are of high importance. UML diagrams are typically used within the project team and with some external clients that have a high level of technical knowledge and are not required in CSIT226.*

## POTENTIAL {BODY TEXT} FOR PART B

The following is one method to present the body of the report (I don't suggest that you use these as exact headings):

- Content from Part A – Modified from marker feedback
- Interface development iterations
  - Different designs presented – wireframe/workflow level
  - Designs at low fidelity prototyping stage
    - One set of designs per group member
  - Discussion on acceptance of key design patterns
  - Design iterations
  - Final design modified to high fidelity stage ('near photo quality')
- Overall design consideration and how the system will meet the requirements.
- How the system would be tested

## PART C ADDITIONAL INFORMATION

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- Your video must be between 5 and 8 minutes in length.
- You will submit a link to the video. The video can be uploaded to YouTube, Vimeo or other cloud storage. The link must be accessible by the marker.
- Your video needs to play on an application such as VLC Media Player.

Make sure that your video:

- Briefly introduces your group, domain and product
- States your target market including potential users and device for the system/application
- Shows interactions through the use of scenarios (highlighting design features and design patterns used) - Walkthrough



## GROUP PROJECT – PART A [MARKING RUBRIC]

		Poor	Pass	Good	Very Good	Excellent
Individual Components	<b>Knowledge and Analysis (Research into the problem)</b>	- Limited understanding of key concepts / issues and ability to explain how these relate to each other	- Understanding of key concepts / issues and ability to explain how these relate to each other	- Clear understanding of key concepts / issues and ability to explain how these relate to each other  - Beginning skills in critique and analysis rather than acceptance	- Understanding of key concepts / issues and ability to explain how these relate to each other  - Evaluate conflicting opinions and draw conclusions	- Thorough understanding of key concepts / issues and ability to explain how these relate to each other  - Evaluate conflicting opinions and draw conclusions
	<b>Understanding Users</b>  <b>User-Centered Design (UCD)</b>  - Personas - Scenarios	- key potential user groups missing  - Issues with potential methods to engage with UCD being asked	- Most potential user groups identified with some classification  - Clear methods for engagement with UCD	- All user groups identified with classification  - UCD modified for different user groups  - For example, mix of questions for an interview, focus group, survey	- All stakeholder groups identified with appropriate classification  - UCD modified for different user groups  - Appropriate mix of questions and different methods of engagement	- All stakeholder groups identified and considered classification of their needs  - Professional list of questions modified for different stakeholder groups as part of the UCD process  - Appropriate mix of questions and different methods of engagement
	<b>Initial Design Requirements Identification</b>	- Basic list of requirements presented	- List of requirements presented and their impacts of design identified	- Clear list of requirements presented  - Design and requirements based around FURPS+	- Detailed list of requirements presented  - Design and requirements based around FURPS+	- Professional list of requirements presented  - Design and requirements based around FURPS+
Overall Assessment	<b>Creativity and Innovation</b>	- No creativity or innovation in the report regarding the problem of the client	- Limited creativity and innovation showing that you have a basic understanding of the problem of the client	- Some creativity and innovation showing that you have an understanding of the problem of the client	- Clear creativity and innovation showing that you have a detailed understanding of the problem of the client	- Superior creativity and innovation showing that you have a comprehensive understanding of the problem of the client
	<b>Overall Report Structure</b>	- Structural issues in the report	- Basic report structure  - Evidence of introduction and conclusion but not all sections logically flow Control over the structure of the document	- Clear report structure following the basics of a professional report  - Basic flow from one section to the next	- Professional structure identifying a clear report layout with multiple levels of headings	- Superior structure identifying a clear report layout with multiple levels of headings which so clear linking between sections
	<b>Grammar, spelling and vocabulary</b>	- Major spelling mistakes, grammatical inconsistencies and corrections	- Minor spelling mistakes, grammatical inconsistencies and corrections	- Absence of spelling mistakes, grammatical inconsistencies and corrections	- Professionally written with clear knowledge of issue	- Professionally written with clear knowledge of issue and client
	<b>Document Presentation</b>	- Formatting issues	- Basic formatting.	- Formatting and style appropriate to the document	- Professional presentation and attention to detail	- Superior and professional presentation and attention to detail

## GROUP PROJECT – PART B [MARKING RUBRIC]

		Poor	Pass	Good	Very Good	Excellent
Individual Components	<b>Knowledge and Analysis (updated from Part A)</b>	- Limited understanding of key concepts / issues and ability to explain how these relate to each other	- Understanding of key concepts / issues and ability to explain how these relate to each other	- Clear understanding of key concepts / issues and ability to explain how these relate to each other - Beginning skills in critique and analysis rather than acceptance	- Understanding of key concepts / issues and ability to explain how these relate to each other - Evaluate conflicting opinions and draw conclusions	- Thorough understanding of key concepts / issues and ability to explain how these relate to each other - Evaluate conflicting opinions and draw conclusions
	<b>Iterative Prototyping and Interfaces</b>	- Very basic interfaces presented	- Basic interfaces presented showing their development from low-fi to hi-fi	- Interfaces presented matches the requirements identified by the group for the assessment	- Interfaces presented matches the requirements for the assessment - Clear explanation of what the interfaces are showing	- Interfaces presented considers all aspects of the system requirements - Detailed explanation of what the interfaces are showing
	<b>Review of Design Evaluation Assessment</b>	- Very basic review	- Basic review of the design with links back to design principles and patterns	- Review of the design with basic links back to design principles and patterns	- Very detailed review of the designs, with clear links to HCI theory	- Professional review of the designs, with detailed links to HCI theory
	<b>Appendix: Style Guide</b>	- Very Basic style guide	- Basic style guide with colours and fonts	- Style guide with colours, fonts, images, page layouts	- Very detailed style guide with colours, fonts, page layouts, dos and don'ts for images	- Professional style guide included with clear branding
Overall Assessment	<b>Creativity and Innovation</b>	- No creativity or innovation in the report regarding the problem of the client	- Limited creativity and innovation showing that you have a basic understanding of the problem of the client	- Some creativity and innovation showing that you have an understanding of the problem of the client	- Clear creativity and innovation showing that you have a detailed understanding of the problem of the client	- Superior creativity and innovation showing that you have a comprehensive understanding of the problem of the client
	<b>Overall Report Structure</b>	- Structural issues in the report	- Basic report structure - Evidence of introduction and conclusion but not all sections logically flow Control over the structure of the document	- Clear report structure following the basics of a professional report - Basic flow from one section to the next	- Professional structure identifying a clear report layout with multiple levels of headings	- Superior structure identifying a clear report layout with multiple levels of headings which so clear linking between sections
	<b>Grammar, spelling and vocabulary</b>	- Major spelling mistakes, grammatical inconsistencies and corrections	- Minor spelling mistakes, grammatical inconsistencies and corrections	- Absence of spelling mistakes, grammatical inconsistencies and corrections	- Professionally written with clear knowledge of issue	- Professionally written with clear knowledge of issue and client
	<b>Document Presentation</b>	- Formatting issues	- Basic formatting.	- Formatting and style appropriate to the document	- Professional presentation and attention to detail	- Superior and professional presentation and attention to detail



## GROUP PROJECT – PART C [MARKING RUBRIC]

	Poor	Pass	Good
<b>Visual Appeal</b>	Minimal effort made in the visual appeal of the video.	Clear attempt at the visual appeal of the video.	Professional visual appeal of the video.
<b>Main Design Features presented and discussed</b>	Limited discussion of the product/solution design features.	Clear discussion of the product/solution design features and why they were chosen.	Professional discussion of the product/solution design features and why they were chosen.  Discussion throughout on why appropriate to the target audience.
<b>Interfaces</b>	Limited or brief discussion of interfaces and the flow within the system.	Some understanding and knowledge of the interfaces and flow.	Professional discussion of the interfaces and flow between different parts of the system.
<b>Consideration of Standards (e.g. accessibility)</b> <b>Consideration of any HIGs of the Deployment Environment</b>			
<b>Overall Design</b>	Basic design.  Major improvements needed to the final design.  Basic discussion of colours and fonts etc.	Overall a clear design.  Improvements should be made to the final design.  Some discussion of colours and fonts etc.	Overall a professional design.  Professionally uses current design trends and methods.
<b>Clarity of Video presentation</b> <b>Enthusiasm of presenters</b>	Issues during the video presentation, e.g. not having a clear order	Overall a good video presentation.  Greater editing required.	Overall a professional video presentation.
<b>Overall Comments</b>			
<b>Mark:</b>			