2023 INFO3315 Human Computer Interaction

Group Project (4-5 people)

Part I – Sunday, Sep 24, 11.59pm

Part II – Sunday, Nov 5, 11.59pm

Review the Sustainable Development Goal and design a technological solution to solve one of the goals. Your team is expected study the chosen problem and determine the extent to which the proposed solution solves the problem. The project will be assessed based on the design process undertaken by the team to reach the solution and the appropriateness of the solution to solving the problem. Additional marks are not awarded for combining more features into the proposed solution or to attempt to solve more problems.

Tasks

The following tasks and questions are designed to assist you in the process of designing the solution. You are expected to work on these questions by yourself before the weekly tutorial session so that the group can have a productive discussion during the physical meet-up. You may choose to write your responses in bullet points to reduce time spent on documentation and focus on the important points. It is recommended that you bring your own notes to the weekly tutorial session. Please read the instructions for submission at the end of this brief.

1. The problem:
    a. Which sustainable goal would you be working on?
    b. Define the exact problem that you are trying to solve.
    c. Analyse existing solutions that are available to solve this problem. If there are existing technology used to solve the problem, you will want to review these technology.

2. Perform PACT analysis on the problem to think about all the factors that needs to be considered while designing the solution.
    a. Identify the stakeholders and users of the solution.
    b. What kind of tasks must your solution be able to do? For the main task(s), can you list out the steps needed to perform these tasks?
    c. When do users perform these tasks and how would it affect your interface design?
    d. What type of information is needed by your solution and how do you obtain this information from the users?
    e. What type of information does your user expects to view on your solution?
    f. Review your answers from (a) to (e), do you have all the needed information to design the application?
        i. If no, list out the areas that needs further investigation.
        ii. If yes, how do you verify the information that you have at hand is correct?

3. Devise and conduct a user investigation to understand the problem in real life:
    a. For your responses in Question 2f, identify suitable data gathering techniques that can be used to collect or verify this information.
    b. Select TWO data gathering techniques and design the data collection protocol to collect data from actual users/stakeholders. The protocol must clearly describe:
        i. Who is the data collected from?
        ii. Where the data collection take place?
        iii. When and how long the data collection session would be?
        iv. Instruments used during collection e.g. interview questions, questionnaire. You can prepare these as separate documents if it is easier to manage the project.
        v. Procedures on administering the protocol
    c. Conduct a test run of the data collection protocol outlined in Question 2b on ONE actual stakeholder/user and analyse if the data collected gives you the expected information. Adjust the protocol accordingly if it does not.
    d. Conduct the data collection protocol with actual stakeholders/users. Considering the time constraint, you are given the option to decide the sample size. However, you need to make sure that the size is appropriate with the chosen data gathering technique.

4. Perform data analysis on the data that you have collected. Based on your findings:
    a. Represent the respondents and their needs in an appropriate presentation format.
    b. Identify a list of requirements for your application and present the requirements according to the categories of: functional, data and environment requirement.
    c. Prioritize the requirements according to importance: must-have, should-have and nice-to-have.

5. Based on the requirements that you have gathered, create paper prototypes of the proposed solution interface.
    a. Suggest three different conceptual models for this application. For each conceptual model, make notes explaining: the interface metaphor, interaction type, interface type, activities it will support functions, relationships between functions and information requirements.
    b. Analyse your findings and select the most appropriate model.
    c. Based on the conceptual model in Question 5b, produce a storyboard to explain to potential users the main purpose of your application. Show this storyboard to THREE potential users and record their feedback. If necessary, refine the model accordingly. Explain in your report the rationale behind your group's actions.
    d. Sketch out the application's initial interface.
        i. Perform cognitive walkthrough on the sketch.
        ii. If needed, refine the interface accordingly.

6. Conduct user evaluations to refine and evaluate the prototype.
    a. Set the standard task or tasks that must be performed by the users.
    b. Decide the measurement that you can use to evaluate this performance.
    c. Develop a computer-based prototype using Figma. The prototype must be able to support users in performing the task(s) set in Question 6a. You do not need to create a full product for the project.
    d. Perform the test on three typical users. These users must be someone outside the group.
    e. Record the problems that each participant encounters.
    f. Analyse your findings and improve the prototype accordingly. If it is not possible to be fixed within the timeframe or this is the last iteration before submission, create a prioritized list of improvements that you will need to fix if there is additional time and short notes explaining how you would fix the identified problems.

7. Develop a field study plan to study the proposed application in a typical setting of use.
    a. State the aim of study.
    b. Identify the type of data that is to be collected from your users during the study.
    c. Prepare the instruments needed to collect the data identified in Question 7a.
    d. Validate your plan by running a small-scale pilot study.

Instructions for Submission:

Part I – Mid-semester progress (Week 8)

In this part of the assessment, you are expected to have complete understanding of the problem space and have conceptual model of the solution. Each group is to submit ONE (1) report. The report must be a single PDF file. The details of each component are as follows:

A) Requirements Report

This assessment component is worth 10%. The report should not exceed 4000 words, not inclusive of Appendix and References, explaining how the requirements are gathered. All supporting materials used during process must be included in the Appendix. The report should cover the following contents:

Introduction

Describe the problem and motivation of the proposed solution, gaps in existing solutions and research questions to be answered by the user investigation. Contents for this section of the report can be gathered from the group's output for Task 1 and Task 2.

Methods

Description of how user investigation is conducted and collected data is analysed. Materials used in the investigation must be included in the Appendix. Examiners will not look at the Appendix unless it is explicitly referenced in the text. Contents for this

section of the report can be gathered from the group's output for Task 3 and partially from Task 4.

Results & Discussion

Present and discuss the findings of the user investigation that was conducted. Contents for this section of the report can be gathered from the group's output partially from Task 4.

Implications and Limitations

Describe how the outcomes of the investigation has been/will be utilized by the group and the limitations of the investigation done.

Part II – Final submissions (Sunday, Nov 5, 11.59pm)

This assessment component is worth 20%. You are expected to have a computer-based prototype of the application and a detailed evaluation plan. Each group is to submit ONE (1) report and ONE (1) journey video. The details of each component are as follows:

B) Final Report & Poster

This assessment component is worth 15%. The report should not exceed 4000 words, not inclusive of Appendix and References, explaining the overall process undertaken by the group to design the application and research plan to evaluate the solution in real-life. All supporting materials must be included in the Appendix. The report should cover the following contents:

Introduction

Describe the problem and motivation of the proposed application and overall process undertaken by the team to design the solution i.e. lifecycle of the project. The latter should be in the form of a diagram and used to explain the remainder contents of the report. You are expected to summarize the work done in Part 1 instead of re-using the text

Body of Report (Replace with appropriate headings)

Explain the tools and techniques used during the design process to refine the prototype. Discuss the implications of the group's actions based on the outputs created from group/individual actions during the project.

Conclusion

Summarize the achievements and challenges of the project. Suggest potential future work – must be supported by concrete plans e.g. group's outcome for Question 7.

You also need to create a poster for your projects. The posters should be as good as they could be submitted for the CHI student design competition. See this year's student design competition at CHI and check the list of selected posters and list of selected finalists.

C) Journey Video

This assessment component is worth 5%. The video should be no longer than 5 minutes (usually 2-3 minutes) and should showcase the entire journey taken by the team to develop the solution (problem to creation of final prototype). It should be clearly depicted in the video how the final prototype will be used by a typical user.

You can create the video using Canvas Studio, Powerpoint or any other video recording tools of your choice.

D) Individual – Self and Peer Evaluation (Week 7 + Week 11)

Each student in the group is responsible for submitting his or her own evaluation on SparkPlus. These evaluations will be used to determine the individual contribution of each group member during the project. Evaluation is not an easy task, please be objective and unbiased while answering the questions. The individual responses will be kept confidential. Please provide justification on why you awarded a grade to your teammate. It would be more beneficial to your examiner if you can state from your own experiences and provide concrete case examples. For example:

General comments: *X didn't do the work.*

Specific examples: *X participated in meetings on Week 4 and 6. During these meetings, he gave good suggestions and insights, refer to Meeting Minutes 4 and 6. He has agreed and was assigned the task to conduct interviews together with Y, refer to Meeting Minutes 4. He gave update on Week 5 that he was still working on it but did not show any work, refer to Meeting Minutes 5. This continued on until Week 6.*

In Week 5, all students are expected to submit one round of evaluations on SparkPlus for feedback purposes. This evaluation results will not be used for assessments. You are expected to review and discuss the feedback given by your peers.

Students who do not submit their own evaluations will forfeit their rights to submit appeals to the final marks awarded for the project.

E) Group Meeting Minutes – Friday, Week 4 onwards

Each group will also have to submit the Meeting Minutes (confirmed and signed by all members) for all meetings that occur on Canvas along with all materials used during the discussion. Discussion materials should be organized in sub-folders labelled by the unikey of each member.

These submissions will be official records and evidence of individual contribution done. It is your responsibility to make sure that your work is included in the weekly submission by the appointed scribe for the week. Do inform your team members if you cannot make it to the Workshop or meeting at least 24 hours before the meeting. Your absence will then be noted as 'Absent with apologies'. However, you must submit work that was assigned to you so that the work can be discussed during the meeting.

The deadline for submissions each week is midnight on day of your Workshop. If the group has multiple meetings during the week, there should be a minute for each meeting and the group is expected to submit all the minutes on the following week.

The table below illustrates an example of the number of meetings held by a group during the week and when each meeting minute is due. The group's Workshop is on Thursday.

Meeting	**When**	**Submission Deadline (before Friday 11.59pm)**
1	Week 4 (Thursday afternoon)	Week 4 Friday
2	Week 4 (Saturday morning)	Week 5 Friday
3	Week 5 (Monday evening)	Week 5 Friday
4	Week 5 (Thursday afternoon)	Week 5 Friday
5	Week 6 (Monday morning)	Week 6 Friday
6	Week 6 (Thursday afternoon)	Week 6 Friday

You may choose to use the meeting template provided or create your own.

Managing Groupwork Remotely

Group work can and will always be challenging. Here are some tips on what you can do to manage it:

General Tips

- Communicate regularly with your group mates.
- Contribute to each meeting by doing your own preparations.
- Keep meeting minutes for all meetings to track progress and responsibilities.
- Use a platform to share information and files e.g. Slack, Google Drive etc.
- Speak up if you have difficulties or need extra help.

First Meeting Discussion Checklist

1. *[Optional] Group name
2. Get to know each other – share about yourself, strengths, and weaknesses.
3. *Group rules – official communication channel (Slack, Dropbox, Google Drive, Git), expectations from each team member and how group records (meeting minutes, items for discussion) are managed during the project.
4. *Agreed definition of rating scale for peer evaluations
5. *Regular meeting time and place
6. Problem space discussion – Task 1.

* Items to be included in team contract.

Important: The team contract must be set and agreed upon at the end of the first meeting. This contract must be signed (virtually) by everyone in the team.

Meeting Minute Template

Meeting Minutes [*X*]

Date: *17 August 2022*

Time: *start time to end time*

Location: *[Zoom link]/Physical location*

Members present:

- *Member A*
- *Member B*
- *Member Y*

Absent with apologies:

- *Member X (work submitted will be presented by Member Y)*

Absent without apologies:

- *Member C*

Agenda:

- *Ex: Updates from previous meeting*
- *Ex: Discussion on XXX*
- *Ex: Next Meeting*

No.	Items	Presenter	Action by
1.	Updates from previous meeting • *Member A findings - XXX* • *Member B findings - XXX* • *Member X and Y findings - xxxx*	Member A Member B Member Y	
2.	Discussion on *XXX* • *Summary of discussion.* • *Item 1 to fix* • *Item 2 to do*		Member A Member B
3.	Discussion on *xxxx* • *Summary of discussion.* • *Item 3 to fix* • *Item 4 to do*		Member X Member Y
3.	Next meeting (if before Workshop session)		

Meeting adjourned on [time].

Minutes prepared by: [Name of Scribe]

Confirmed by:

[All members signature – must have at least two signatures]