A1: Problem Space & Group Research Plan

**Group assignment**

**Due:** Monday, 15 January before 6:00pm

**Submit to**: Blackboard

**Worth:** 5% of your final grade

Introduction

In this course, we will address a design problem inspired from the 2018 *ACM Conference on Human Factors in Computing Systems (CHI)* Student Design Competition. The CHI Student Design Competition poses a real-world challenge and demands that teams of students use myriad approaches (design research, brainstorming, prototyping, implementation, and evaluation) to develop their solutions. The theme this year is “Engaging communities” (see the **Project Theme** appendix).

Through the term, you will work in **groups of 4 to 6 students** on a project addressing a problem falling into the project theme. All individual and group assignments in this course are designed for you to progress through the development of the project.

In this first assignment, you will work together as a group to define the problem space of your project and establish the group research plan.

**Your tasks**

* fill out group information forms
* describe problem space & group research plan
* identify a research paper to review (**individual**)
* maintain a project calendar

1. Group Information Forms

Fill out the **Group Identification Form** and the **Group Photo Sheets** (using the provided templates in appendix). These forms will be useful for you to communicate with your group members and for your instructor and TA to identify you for class participation grades.

Please make sure that your photos (max image size 100k each) are recent, showing your face and shoulders, and that you are clearly identifiable in your photo. Poor quality photos will result in a lower grade for the assignment, and lower participation grade.

2. Describe Problem Space & Group Research Plan

**Problem Space**. As a group, you should first specify the problem domain that your project will be about, by determining:

* What is the **problem space** that you would like to address?
* What is the **target population** whose needs you would like to meet?

Remember that at this point, you want to focus on a problem space and not an exact problem, which you will identify after doing some background research, nor a proposed solution to the problem. You are going to explore the problem space first with your background and user research in order to identify the problems that your users really have, and not what problems you may think they have. It is really important that your exact problem is identified based on your research. You are not going to users to tell them what the problem is, but to understand their issues with the problem space, and to uncover users’ problems in that space.

**Research Plan.** Once you have defined your problem space and target audience, you should create a research plan for your research by considering different aspects of your problem space and ensuring that as a group you cover a broad area of that space. Describe a roadmap of how to go about conducting **background research** and **user research**. What methods would you like to use (observations, interviews, questionnaires)? What secondary sources (referred journal articles, books, common press, …) will you explore? Where will you find users to interview? What type of information will you want to collect from your users?

This is a big picture research plan that will enable your group to plan your project background research together. Your group should define the **broad problem space** and **different users** in this space whom you might want to research. Then, your group should **divide the group research into smaller parts** to enable each group member **individually to conduct this research for assignment A2**. In dividing up the research, you choose to focus on different parts for broader total coverage, or to overlap the individual research components so that each group member can gain a deeper understanding of the problem.

Your problem definition and big picture research plan should include (1) the big picture research for your problem space, (2) the target audience or audiences that are found in this space, and (3) the division of labour, or who does what as part of the individual research pieces that your group will undertake for your individual assignment A2.

Discuss these in a document that does not exceed 1 page in length.

3. Research Paper Proposal (individual)

**Propose** a **Research Paper** you will review for assignment A2. It should be related to the research you are planning to do in your research space, and needs to be a formal research paper published in a peer-reviewed journal or conference (e.g. ACM and IEEE journals and conferences), rather than consumer press. If you cannot find a paper related to your problem space, then you are probably not looking hard enough or have uncovered a truly brand new problem space in which case you can review a paper from HCI journals or conferences (e.g. ACM CHI, UIST, CSCW, …).

Note that at this stage, you are only required to identify a paper that you wish to review in your assignment A2. Before reviewing this paper, you must **get approval** from your TA that this paper is appropriate for this assignment. You will submit your 1 page review of this paper as part of your individual assignment A2.

4. Project calendar

Your group will maintain a **Project Calendar** to record of all group meetings and group members’ activities, as well as prospective plans for project management. You will want to enter assignment due dates and group deliverables in this document.

You will submit a copy of this calendar with each group assignment.

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| --- | --- | --- | --- |
| **Date** | **Activity** | **Participants** | **Details** |
| Jan. 11 | Group Forms & Brainstorming | Everyone | Completed info sheets  Brainstorm ideas for problem space & voted on problem statement |
| Jan. 12 | Problem statement | Student 1, Student 2, … | Discussed problem statement and research plan  Started drafting problem & plan |
| Jan. 16 | Recruiting strategy | TBD | Discuss recruiting strategy |
|  |  |  |  |
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Submission instructions

**What to submit?**

**Only one person per group (group representative) should submit:**

* A PDF document named “[Group name].A1.group\_forms.pdf” containing the **Group Identification Form** and the **Group Photo Sheet**
* A PDF document named “[Group name].A1.problem\_and\_plan.pdf” describing the **Problem Space** and the **Group Research Plan** (1 page)
* A PDF document named “[Group name].A1.calendar.pdf” of your initial **Project Calendar** (< 1 page)

**Everyone should submit individual research paper proposal:**

* A PDF document named “[Your name].A1.research\_paper.pdf” of your **Research Paper Proposal**: include authors, title, Source Reference (using standard IEEE or ACM citation format) and abstract in your own words (**DO NOT PLAGIARISE!**)

**Submission details:**

* Submit all of your electronic documents on Blackboard by the due date. Late submissions incur a penalty.
* Writing style counts for 10%: structure, organization, spelling and grammar. Documents submitted with less than University-level writing quality will be returned unmarked.

Appendix 1: Project Theme

Your group project should fall into the theme of the CHI 2018 Student Design Competition as follows (see full description at: <https://chi2018.acm.org/authors/student-design-competition/> )

**The Design in Brief: Engaging Communities**

Technology has provided numerous means through which people can connect and create new networks, practices and cultures. It has also provided new channels for people to make their voices heard and shape the future. We have seen this phenomenon accelerate over the last decade: in societies with serious political crises, local people have been able to communicate with the world and influence opinion and politics; Social technologies, crowdsourcing platforms, and digital fabrication have created new opportunities for invention, business and manufacturing to be democratised and sharing economies to emerge; Technologies enable different communities of interest or practice to come together to share experiences, support one another, and to address some of the wicked problems faced by humanity.

The theme of CHI 2018 is ‘ENGAGE’. In the Student Design Competition, we encourage you to contribute to this theme by ‘Engaging Communities’: use human-centred design approaches to develop a new way to support, empower, or change the behaviour of a group around a shared area of interest. The scope of this brief is broad: for example, you could focus on healthcare, ageing, education, policy, public service, business development, charity, sustainable living, food, energy consumption, art, or indigenous culture, just to name a few. You can either work with an existing community, or you could aim to create a new community. The scale and definition of a community can vary depending on your design aim, for example, people in the same region, a group of people with the same interests, a network of people who pursue new social or economic value, communities of practice in professional fields and so on. You may adopt design strategies that allow community engagement, including participatory design, co-creation and co-design, service design, design for social innovation, inclusive design and open innovation. You may come up with a participatory design and co-creation approach using existing technologies or you may find opportunity in contemporary developments in technology, such as 3D printing, digital fabrication, citizen sensing, the maker movement, the sharing economy, big data, social networks, gamification, new sensors and actuators, and Augmented Reality, to name just a few.

Remember, though, that sometimes the best interventions may flow from a simple yet sharp insight gleaned from research, and might require only minimal technology – what is important is that your choice of technology and design intervention should be appropriate for the particular community and context you are focusing on.

For this year’s design challenge, we particularly encourage that the following criteria be considered:

\* Does the design intervention address a real population and/or situation?

\* Does the intervention use technology in an appropriate and novel way?

\* Was relevant prior work properly identified and cited?

\* Were analysis, synthesis, design and evaluation both systematic and sufficient?

\* Was the intervention developed far enough to demonstrate the key ideas?

\* Were genuine stakeholders involved in the process of research, development and

evaluation?

\* Were the research process and the involvement of stakeholders ethically appropriate

(e.g., were institutional guidelines followed)?

\* Did the team explore the entire ecosystem of stakeholders, conditions, and contexts?

\* Was the intervention well-crafted and effectively presented?

Appendix 2: Group Identification Form

**Group Name**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- | --- | --- | --- | --- |
|  | *Person A* | *Person B* | *Person C* | *Person D* | *Person E* | *Person D* |
| Name  (official & preferred) |  |  |  |  |  |  |
| Phone Number |  |  |  |  |  |  |
| Preferred Email |  |  |  |  |  |  |
| Preferred Communication By |  |  |  |  |  |  |
| Best times for meetings? |  |  |  |  |  |  |
| Writing skills & experience |  |  |  |  |  |  |
| Organizational  skills |  |  |  |  |  |  |
| Describe your research skills |  |  |  |  |  |  |
| Behavioural or social science training, if any |  |  |  |  |  |  |
| Visual design experience |  |  |  |  |  |  |
| System/interface prototyping experience |  |  |  |  |  |  |
| Special areas of interest |  |  |  |  |  |  |
| Anything else your team should know |  |  |  |  |  |  |

Appendix 3: Group Photo Sheet

**Group Name**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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|  | **Name** | **2** | **3** | **4** | **5** | **6** | **8** | **9** | **10** | **11** | **12** | **13** |
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