MSc Computer Science

Introduction to HCI: 06-21253

2017-18

Exercise Sheet

Summary

This is the coursework for the module *Introduction to HCI* (06-21253). The module is assessed 100% by coursework. A failure is, normally re-assessed by *repeat*. There are two *assessment* deadlines – in of week 9 (25th November) and in week 11 (5th December). The exercise is undertaken in groups. All group members are *expected* to contribute equally (but not necessarily in the same way).

The task is to undertake a design process for the interface to a system. This will involve researching existing systems and relevant research; identifying the target user groups and their requirements; building and evaluating initial designs and prototype systems; refining a design and constructing a final, sophisticated prototype; identifying and performing appropriate evaluations on the final prototype; and undertaking a critique of the work of other groups.

The system to be examined

Each group should identify the problem that they are addressing. The only constraint is that it must enable you to undertake all of the subtasks of the exercise.

You could consider:

- A web based system, an app for a mobile 'phone, a standard computer application, a control panel for a domestic appliance, an interface to a TV etc. Or you might look at a more ambient system which senses and reacts – a smart home, a thought controlled wheelchair, a robot butler etc. You obviously need to consider the practicality of building and evaluating the prototypes.

- Examples of application domains could include: buying tickets for a football match, finding flights or hotels, controlling a device (e.g. heating system), educational tools for people with learning disabilities, a multi-user computer game and so on. Or, again, you might look to the future rather than current applications.

[You must submit a draft specification of the problem by Thursday of week 4]

Submission

Each **group** must submit their work through the Canvas on-line submission system as 3 PDF files. In addition, you must submit 1 printed and bound copy of the main report to the School office:

1. [Week 9]: A report presenting the work of the project. This should be submitted by the end of week 9 (both to Canvas and as a printed and bound copy to the school office). The word limit is approximately 10,000 words (per group) excluding figures and references – smaller submissions will be welcomed.

[90%]

2. [Week 11]: A log of all activities undertaken by the group. This should include:
    a. Date & time of all group meetings
    b. Attendance
    c. Brief minutes including:
        i. Key discussions
        ii. Decisions
        iii. Actions
3. [End week 11]: A critical review of the submissions from 2 other groups.

[10%]

Paper [90%]

The final submission is in the form of a report presenting your work. This should be presented in a standard report format with sections as appropriate. The outline structure should include:

- Title, authors, abstract/executive summary
- Brief summary of group members' contribution:
    - Who did what in each section
    - Weighting of each member's contribution
- Introduction
- Definition of problem addressed [5%]
- Review of related work [20%]
- Analysis of users requirements [20%]
- First generation prototypes [15%]
    - Rationale
    - Describe and present the prototypes
    - Evaluation and conclusions
- Second generation prototype [20%]
    - Evaluation of tools for constructing prototype
    - Description of prototype
    - A plan and rationale for the evaluation of the prototype. For instance, you *might* evaluate:
        - Against personas/scenarios
        - Against heuristics
        - With users
    - Results and Conclusion
- Summary and recommendations [10%]
- References

[note: percentage marks are indicative rather than, necessarily, mechanical]

Review of other projects [10%]

Each group will be allocated the report from two of the other groups. You will undertake a *critical* evaluation of the work presented and for each piece of work you should write a brief (at most 1 page each) report which includes:

- Brief synopsis
- Strengths of the work (results, techniques, recommendations …)
- Weaknesses of the work
- Brief summary

In more detail

You can discuss this in class or outside in order to get more specific and detailed feedback. Below there are some general pointers to what is required and also a date by which you should have a draft for discussion and feedback.

Definition of problem

[Draft Thursday week 4]

Provide a clear statement which defines the problem that is being addressed

Review of related work

[Draft: Thursday week 5]

In this section you should review two classes of related work:

1. Existing systems that address the same general problem as your own and also related systems that could inform your designs. What approaches do they take? What strengths and weakness do they have? ….
2. Work that addresses principles, methodologies, techniques etc. that are relevant to your problem. Here you should draw upon research results and generic guidelines and principles.

All work discussed should be properly cited in the text and included in the references at the end of the report.

Analysis of user requirements

[Draft: Thursday week 6]

You should consider at least 3 *classes* of user that your system is aimed at. For *each* you should develop:

1. At least 1 persona representing that user class
2. At least 3 usage scenarios (each) specifying how they would use the system

First generation prototypes

[Draft: Thursday week 7]

You should develop at least 3 low fidelity prototypes explaining what you developed and why. For each you should undertake an evaluation and present the results and a set of conclusions/recommendation. You should explain how these conclusions will be reflected in the final design.

Second generation prototype

[Draft: Thursday week 8]

You should develop a second, higher fidelity, prototype.

1. Explain the rationale for the choice of the tools used to develop the prototype

2. Present the second generation prototype
3. Present a plan (description and rationale) for the evaluation
4. Present the results and analysis of the evaluation and a set of conclusions/recommendations for the final product

Summary and recommendations

In this section you should:

1. Summarise your achievements
2. Present an analysis of your project. What was good and what was bad? How you would change the approach in a future project?