

Optional Home exam

1MD001 User Centred Systems Design

spring 2009

Time: 2009-04-01 kl. 08.00 - 18.00 (it will take maximum 5 hours to solve the problem).

Place: Home exam

Submit: Save your answers as a file (word, text or Acrobat pdf) with the file name UCSD-exam_your_name , and e-mail to Jan.Gulliksen@it.uu.se before 18.00 on April 1st 2009. The document must contain your name and personal identification number on the cover page.

As previously stated the passed degree is given to those students who have passed all mandatory parts of the course. To opt for a higher degree this home exam will be used to judge that. Please note that you do not automatically get a higher grade, just because you submit the home exam. If you do not hand in the home exam it cannot be higher than a passed degree if all other conditions have been fulfilled.

The exam is intended to be individual, cooperation is not allowed. Any sources you may want to use; literature, links and sources on Internet are just fine. Number of pages is up to you but 10-20 pages, including cover page and table of contents seems appropriate. The exam will be judged on how well you show your ability to apply the knowledge gained from the course in solving the problem, and how well you manage to tackle the problem.

Questions can be answered by Jan Gulliksen, preferably by calling the cellphone on +46-18704250086 given that access to internet may be somewhat limited tomorrow.

ASSIGNMENT

Making IT-systems that has the highest possible accessibility for all users has recently become one of the central goals of many development projects. The increasing number of electronic services provided by various organizations on Internet, increases the importance of making these services accessible for the users that normally would not have had any opportunities to make use of the technology to access the information and services. Equal opportunities for all users regardless of abilities have almost become as necessary as human rights.

Universal Access, Design-for-all, Inclusive design, Accessibility are only a few of the concepts used to frame the field that has the purpose of increasing accessibility for everybody. In Sweden, organizations such as Hjälpmedelsinstitutet, Verva and the 24-hour agency and companies such as for example Funka.nu are the ones normally catering for these issues.

What is accessibility?

ISO 16071 – Guidance on software accessibility defines accessibility as:

"accessibility - usability of a product, service, environment or facility by people with the widest range of capabilities"

This means that the purpose of the definition is to define accessibility as a type of usability, where usability is defined according to ISO 9241-11 Guidance on usability.

" usability - extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use"

This makes it possible to “measure” the accessibility of a system by “measuring” the usability for people with different capabilities

There is a widespread belief that user-centred design and accessibility are independent issues, since it could be interpreted as producing unique solutions for each user. But guidelines and information provided by ISO, Verva, W3C and others aims at making the knowledge useful to a wider range of users. It will not be feasible to build 10 million different user interfaces for the Swedish population. So is it possible to make a user-centred development project that produces a user interface with the highest possible accessibility and what would such a process look like?

Your task will be to investigate how one could organize, plan and conduct a user-centred systems development project with the purpose of achieving the highest possible level of accessibility. You should describe and discuss an adapted systems development process that aims at developing systems with the highest possible level of accessibility, but also follows Gulliksen et al. Key principles for UCSD.

You may base your development on an existing development process or start from scratch, whatever you think best will achieve the goals. You will be judged on how well you manage to apply the knowledge from the course in specifying such a process. It is perfectly allowed to borrow parts of the process from Mayhew, Constantine or others, but make sure to motivate and discuss your choices.

Typical questions you may need to address are:

- Which basic process should we start from and why, and what extensions are needed to address the goal of increased accessibility. Which extra activities, methods, tools or roles are needed to guarantee increased accessibility?
- How can we measure the accessibility – because the client is interested in getting some kind of measure to judge how well the accessibility goals have been met.
- How well does the 12 key principles of UCSD apply?

Your solution should contain a description of the systems development process applied that is user-centred and focuses on accessibility. Describe how you apply the principles, what the developer organization would look like, roles, activities and ways of documenting your project. Particular emphasis would be directed towards your abilities to adapt your process to the prevalent conditions. It is important that you report all presumptions that you make and motivate your thoughts and arguments on the topic.

To make it more concrete you **MUST** relate your process to an exemplar project. You may yourself make all assumptions needed on the project and what requirements you have on the organization, but it needs to follow the following requirements:

- The purpose of the project is to develop a software system aimed at public users in Sweden.
- The system is developed in-house (meaning that the development organisation and the user organisation belongs to the same overall organisation) and the size of the development team is middle (20-50 people)

Below are some links to inspire your quest for more information about the subject. Please note that the links do not contain the answer to these questions, but they may serve as an inspiration to arrive at a solution of the problem. The list below is also only to be viewed as a sample, and not an exhaustive list. Of course you may use the sources that you find yourself, but make sure to quote any references.

A final comment about references: Quoting other people’s ideas and thoughts, taken from other parts of the internet is allowed as long as you provide the source, tell what is a reference, and be clear about what are your own thoughts.

Useful material for the assignment is

The American federal law on accessibility
<http://www.section508.gov/>

The World Wide Web Consortium (W3C) initiative for accessibility Web Accessibility Initiative
<http://www.w3.org/WAI/>

W3Cs guidelines for accessible web sites - Web Content Accessibility Guidelines WCAG 2.0 (draft)
<http://www.w3.org/TR/WCAG20/>

Verva – vägledningen 24-timmarswebben (only in Swedish)
<http://www.eutveckling.se/static/doc/vagledningen-24-timmarswebben-2006-05.pdf>

Hjälpmedelsinstitutet – Swedish institute of assistive technologies
<http://www.hi.se/>
<http://www.hi.se/en/Swedish-Institute-of-Assistive-Technology-/> (in English)

Handisam - Swedish Agency for Disability Policy Coordination
http://www.handisam.se/Tpl/StartPage_____287.aspx

Handikappombudsmannen – The Swedish Disability Ombudsman
<http://www.ho.se/> (only in Swedish)

that recently transferred to the Equality Ombudsman
<http://www.do.se/Other-languages/> (in English)

Handikappförbunden – The Swedish Disability Federation
<http://www.hso.se>
<http://www.hso.se/start.asp?sida=298> (in English)

The company Funkanu
<http://www.funkanu.se/start.asp?sida=27>

Principles for universal design (version 2.0)
http://www.design.ncsu.edu/cud/about_ud/udprinciples.htm
<http://www.humec.ksu.edu/news/2006/10/23/universal-design-principles-can-aid-all-including-aging-adults-and-those-with-disabilities-k-state-expert-says/>

Other useful links
<http://trace.wisc.edu/world/>
<http://www.designforalleurope.org>

Good Luck!
Jan Gulliksen