

Singapore Institute of Management
BSc in Computing & Information Systems
CIS 210 Tutorial 10

1. What is the difference between the terms 'user interface' and 'human-computer interaction' (HCI)?

Answer

User Interface, also known as the Man-Machine Interface (MMI), includes those aspects of the system that the user comes in contact with. In practice, improving user interface includes tidying up the screen displays to make them more aesthetically pleasing. Human computer interaction (HCI), on the other hand, is a much broader field of study compared to user interface. It is a discipline concerned with design, evaluation and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them. (ACM SIGCHI, 1992)

HCI studies are concerned with understanding how people use computer systems so that better systems can be designed which more closely meet users' needs.

The knowledge necessary for this comes from understanding how users interact with computer systems in particular work environments. This interaction consists of four components:

- the user
- who has to do a particular task or job
- in a particular context
- using a computer system

2. Describe the process of software inspection. Explain the importance of software inspection in the development of software systems by a group of software engineers.

Answer

Software inspection is a peer assessment process. Each inspection review can be conducted as a meeting and will be successful only if it is properly planned, controlled and attended.

Software inspection is important because of the following reasons:-

- Helps to uncover errors in function, logic or implementation of any representation of the software
- To verify that the software under inspection meets its requirements
- To ensure that the software has been represented according to predefined standards
- To achieve software that is developed in a uniform manner
- To make projects more manageable

3. Outline the user interface design (UID) process and state what is the goal of UID.

Answer

The user interface design process is interactive and encompasses four main activities including,

1. User, task and environment analysis and modeling
2. Interface design
3. Interface construction/implementation
4. Interface validation

The UID process can be represented using a spiral model. Each of the task will occur more than once, with each pass around the spiral representing additional elaboration of requirements and the resultant design. Prototyping technique is often developed during the interface construction phase to validate what has been designed.

The goal of UID is to define a set of interface objects and actions (and their screen representations) that enable a user to perform all defined tasks in manner that meets every usability goal defined for the system.

4. List five design guidelines that can be used to develop a web site for senior citizens to register and make enquiries about senior citizen activities organized by Ulu Street community centre.

Answer

The five design guidelines that may be applied in the development of the website include:

1. Reduce demand on short-term memory

The interface should be designed to reduce the requirement to remember past actions and results. Given their age, senior citizens who tend to have shorter term may have problems remembering complex steps and actions. The website should provide visual cues that can help the user to recognize the actions required rather than having to remember and recall them.

2. Maintain consistency across the website

Given the lack of exposure to IT, senior citizens will find it hard to navigate the website if the functionality & information layout is not consistent.

3. Allow user interaction to be interruptible and undoable

Given their lack of IT experience, the website should provide a way to allow the user to interrupt and undo previous actions

4. Hide all technical jargons and internals from user

Avoiding technical jargons and internals will avoid turning the users away from using the system.

5. The visual layout of the interface should be based on a real world metaphor

Helps the senior users to orientate to the system more easily

5. Suggest five ways to improve the interface of the following search for a library book enquiry function.

SEARCH FUNCTION

BOOK NUMBER

Search Results

ISBN 009-001 Software Reuse, Catherine Boey, Lynn York, JJ publisher
ISBN 008-002 Software Project Management with practical tips for Managers, Stacy Morcy, Mark Elle St., Paul Lim Yu, Lao Zhi, K publisher
ISBN 006-002 Programming for effective programmers, Hushan K. Et., JJ publisher

Five recommendations to improve interface:-

1. Improve visual layout by adding title of the library system just before the name of the function
2. Specify what is the format of the book number
3. Search results should be tabulated to enhance readability. From the current layout, name of author and publisher cannot be clearly identified
4. A button to navigate to another function or return to main menu
5. Name of currently logged on user should be specified. This is to prevent errors due to staff having IDs to do administration