

Solutions

1.

a) Please provide BRIEF answers to the following questions:

i) Give two reasons why expert users may not prove to be a good source of information about the requirements for an interactive system.

[Seen problem] Experts often develop skills that are then so embedded that they find it difficult to explain the nature of their tasks during interaction. By analogy, ask someone to explain how you cycle a bike (cf Rasmussen's SKR hierarchy). Experts may have forgotten what it is like to be a novice and user and hence may only provide a very narrow perspective on a potential design. Domain experts may have little appreciation about novel ways of performing a task with software support and may be overly committed to existing approaches etc.

ii) Explain the differences between immersive and desktop virtual reality.

[Seen problem] Desktop virtual reality seeks to provide the user with impression of interacting in a 3D environment using the devices that are routinely available on desktop computers, ie standard CRT and LCD displays, mice or touchpads and keyboards. In contrast, immersive approaches provide users with a more direct experience of 3D interaction using specialist input and output devices including gloves, bats and helmets.

iii) When would you use a sans serif font?

[Seen problem] Sans serif fonts lack the glyphs that guide your eyes along the line of compact prose. Examples include Helvetica. In consequence, they make individual words stand out as discrete units rather than helping the reader's eye to follow along lines on the page. They are used in headings or titles and are also preferred for labels on menus, buttons etc.

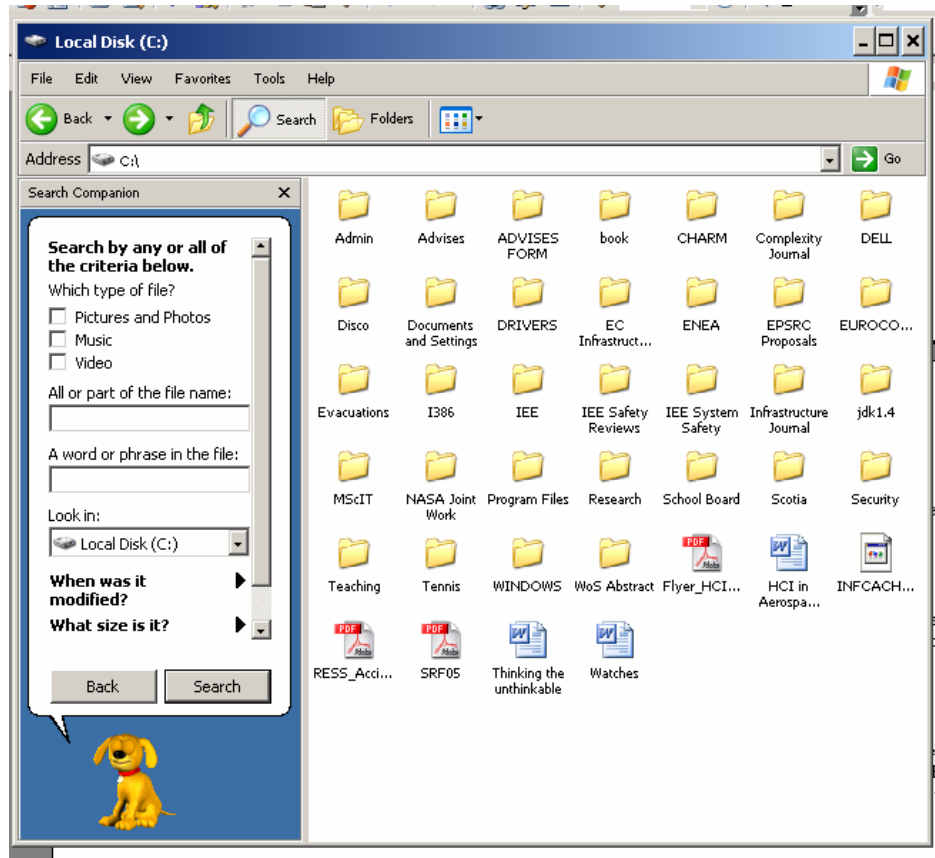
iv) What are 'think aloud' evaluation techniques?

[Seen problem] 'Think aloud' evaluation techniques try to go beyond the observation of user behaviours to understand some of the reasons why a person acts in the way that they do. Sometimes a user may select a command by accident – if this helps their task then there may be no way for the designer to recognise their uncertainty. They will simply see that the user has selected the 'right' command. In contrast, think aloud techniques encourage users to talk during interaction. Hence, users are encouraged to say when they are unsure about something. This information can be used to inform the redevelopment of an interactive system.

v) Why might sighted users also benefit if designers consider the needs of blind users in the development of a web site.

[Seen problem] There are many ways in which designing for blind and partially sighted users can have knock-on benefits for other users. These include concrete issues, such as the correct use of ALT tags that can help with low band width connections and specialised devices. They also include higher level issues such as the increased likelihood that designers will be aware of other usability issues through design for this particular user group.

b) The following screen-shot is taken from the Microsoft XP operating system. As can be seen, it helps users to search for files on their computer, in this case the C hard drive.



Briefly describe the main features that are you feel will support the user of this operating system. (Hint: you do not need to describe the detailed operation of any of the particular services, you do need to comment of the interface design, choice of widgets etc).

[6 marks]

[unseen problem] The most obvious aspect of the display is the 'retriever' animation. However, it is questionable whether this actually makes a significant difference for large groups of users. It will be interesting to see whether people pick up on this. I remain open minded about the arguments for and against it.

The interface provides a series of default options grouped on the left. Unlike some 'find' dialogues, this has the benefit that users can still see the files being searched on the right of the screen rather than having the dialogue box on top of the objects. The most frequent tasks are well supported by the options to search on names and for items in a file. Arguably less frequent options, including the search on file size and modification date require further interaction. The use of the expanding menus for these options helps to ensure that the dialogue is relatively simple – complexity is only added when users request these options.

The dialogue contains useful default options – the search target is the file structure shown in the window on the right. The filename is usually active on calling up the search so simply typing the name and hitting return will initiate a default search; notice that the search action is active. Many other comments can be made.

c) You have been asked to design an application for the next generation of mobile phones. The precise technology has yet to be decided upon. The aim of the system is to enable users to book tickets for sports events and for concerts using their phone. Briefly explain how you would go about designing the interface to this system and how you would conduct formative evaluation during the initial stages of development (Hint: you do not need to design the interface itself, simply describe the techniques you would use during the early stages of development).

[9 marks]

[unseen problem] By postponing the decision about the technology to be used (WAP, WXML etc) interface designers are free to consider a broad range of designs. However, this implies the use of pencil and paper techniques. Wizard of Oz methods are also appropriate and in this domain, we might expect designers to make use of PC based phone simulators, such as those distributed by Nokia. Potential solutions to this question could describe the use of these different approaches. However, I would expect some analysis of the potential limitations that might need to be addressed during the formative evaluation. For example, pencil and paper prototypes can provide a very poor impression of the look and feel of an application for a mobile phone. For example, the input facilities available on a reduced keyboard are difficult to recreate in these circumstances. Similarly, PC based simulators cannot easily be used to assess the legibility of display designs under a variety of different lighting conditions that might be encountered with a mobile device. Distractions such as noise, vibration etc are also difficult to replicate.

There are no easy solutions and this remains a research area in its own right. I would advocate low cost validation but also some commitment to a high-fidelity prototype implementation relatively early in the design cycle. Without this it is likely that designers may produce a site that has fundamental usability flaws which were not observed during the formative evaluation.