

AMSc IRIC exam 00/01 – questions on interfaces, and suggested answers

Question 1

d) IR interface design draws on many of the principles of general interface design, and involves consideration of both **functionality** and **usability** issues. Define these two terms, and describe three principles of general interface design that are particularly relevant to IR.

[5 marks]

Functionality pertains to the range of features offered by the interface, i.e. what operations are possible with a particular interface. Usability pertains to the ease with which a user, or group of users, can use a particular interface. This involves consideration of many different issues, including interface layout, ease of navigation, support for user tasks, etc. General interface design principles that are particularly relevant to IR are:

- Reduce working memory load
- Informative feedback
- Internal locus of control (user can control timing and type of feedback easily)
- Alternative interfaces for expert/novice users
- Easy reversal of actions

Question 2

c) Describe two appropriate methods that interfaces can employ to support domain expert users in identifying a suitable starting-point for their searches. Why are these methods not suitable for non-expert users?

[4 marks]

Appropriate methods are:

- Lists. This type of interface provides a list of collection names for users to choose from. The main limitation here is that the user must know the collections and be familiar with their contents.
- Overviews. This type of interface provides an overview of the topic domains of the available collections. There are three main methods:
 - (i) category hierarchies, where determining the category contents requires domain knowledge
 - (ii) automatic collection overviews, where the cohesion of the categories can be rather variable, which can be confusing for non-experts
 - (iii) co-citation clustering, which is probably the most suitable method for non-expert users

d) SuperSearch, an internet company, has developed two interfaces to its new search engine. Both interfaces offer interactive query expansion, i.e. the ability for the user to choose which extra top-ranking terms should be added to the query. Both interfaces offer a set of 20 possible query expansion terms for the user to examine. However, the two interfaces present this set of terms differently:

- In interface A, all 20 possible terms are selected by default, so the user must deselect any terms he does not wish to be added to the query.
 - In interface B, no terms are selected by default, so the user must select any terms he wishes to be added to the query.
- (i) Identify and briefly discuss two issues that you think an interface designer should take into consideration when designing an interactive query expansion interface.
- (ii) Which of the two interfaces, described above, do you think will result in greater **user satisfaction**? Define your usage of this term, and describe a small-scale experiment to test your hypothesis. Justify your answer and state clearly any assumptions you make.

[10 marks]

I'm less bothered here by what the exact answers are than by the reasoning and justification provided. Possible issues to be raised for part (i) (NOT an exhaustive list by any means):

- User domain knowledge. If the user is not a domain expert in the area of the query, he/she may find it difficult to know which terms to add. The designer may therefore wish to provide explanation and/or context to support user choice of terms.
- User system expertise. If the user has already had some experience of using an interactive query expansion system, he/she may have already got to grips with the mechanics. Otherwise, a help option is essential, since the mechanics may not be intuitive.
- Layout of interface / general interface usability. Functionality is clearly important for supporting user tasks, but usability will also greatly affect user performance.