THE BCS PROFESSIONAL EXAMINATION
Professional Graduate Diploma

April 2001

EXAMINERS' REPORT

User Interface Design

Candidates have continued to perform well on this paper, demonstrating knowledge of a range of systems and their interfaces. There is a tendency to reproduce all that they know about a topic, having spotted a keyword, with little attempt to structure their response to answer the question – this is specifically mentioned in several places below in the Examiners' Guidance Notes. In addition, many candidates failed to compare systems or to discuss material in an evaluative manner – which might reasonably be expected at this level.

QUESTION ONE

WAP is a protocol that allows mobile telephones to surf the Internet and, if the television advertisements are to be believed, WAP is set to become an important part of our everyday life. From a user interface perspective, discuss the issues a provider is likely to have with the provision of such a service.

Your answer should include examples of the kinds of information that could be provided using this interface and how the information delivered (content) is likely to differ from more traditional methods of accessing the Internet.

(25 marks)

Many candidates were able to identify the design limitations of WAP. However, the examples of how WAP services could be used were generally poor. Very few candidates were able to offer a good comparison with more traditional methods of accessing the Internet. As with other questions, the overall structure of answers was not well thought out.

Answer Pointers

There are a number of issues associated with the provision of a user interface for WAP – essentially you have a very small visual area to work with and a phone that is getting smaller and smaller with each generation of mobile telephone. The interface needs to be text based and menu driven. Examples of good WAP interfaces are ones that are very hierarchical. For example, if you were ordering a take away curry using the phone you would want to select food first by category (starter, main course etc) then perhaps by meat or vegetarian, then by type of meat, (chicken, lamb, beef) then by dish and so on. You would not want to scroll through a very long list of items – as this would involve downloading a large amount of data which would take a while given the current data bandwidth.

Compared with accessing the internet through a PC:

1. Need to make sure that you do not force the user to download a large amount of data

2. Few or no pictures

3. Hierarchical menu structure

4. Small amounts of written text required

QUESTION TWO

One of the factors listed as a reason behind the failure of the Internet retailer Boo.com was that the user interface was too advanced. Essentially, home users did not use the site because each page took too long to download using a standard 56k modem.

Discuss the factors that should be taken into consideration when designing a web site.

How does the design of a web site differ from a traditional user program such as a word processor?   (25 marks)

Candidates were able to identify many of the factors that could affect the design of a web site. However, as with question one, fewer candidates were able to offer a reasoned comparison – in this case, with more traditional user interface design methods. Again the structure of many answers was not clear.

Answer Pointers

Designing a web site is like any other program. For example you need to define the requirements.

1. Who is the target audience? Is it a retail site, technical support site, an information provision web site?

2. How will the user be expected to interact with the site?

3. What is the goal of the site – do you wish to keep users on the site? Perhaps using banner advertising to direct users to other parts of the site or other sites that you have responsibility for (stickiness); does the site need to get people to an answer ASAP e.g. a technical support site (slipperiness)?

4. What are the security implications?

5. What data do you wish to collect about the use of the site?

6. What is the profile of a typical user?

It differs from a typical program in that the target audience is often more difficult to define, and there are considerations relating to the number of users at any one time, location and skill level of users, that need to be taken into account.

QUESTION THREE

What makes a good help/support facility within a computer system?

Your answer should include examples from three of the following application areas: word processor, web site, nuclear power plant control system, navigation system in a car, ATM (cash point machine).

List some of the typical problems that people have with help systems today.

(25 marks)

In most cases, this question was not answered well. Candidates did not demonstrate a good understanding of why help systems would be required within software, leading to poor descriptions of what makes a good help system.

Answer Pointers

Online help systems are typically designed to assist users with the completion of tasks in an application. Whereas online tutorials and training materials are learning orientated, online help is performance orientated. As users work, they turn to the help system when they need information to accomplish work tasks. Many types of information can be delivered by online help, including facts, procedures, and explanations. In all cases however, the information must be easily accessible and targeted to help users with their present tasks. Additionally, online help information must be clearly written and presented in a style that facilitates transfer of knowledge from the help system to the actual work scenario. (Duffy, Palmer & Mehlenbacher, 1992)

Some of the typical problems include:

1. Users have difficulty finding the information they need

2. Users perceive a failure with the system to deliver any relevant information

3. Users have difficulty switching between help and their own working context

4. Users think that help systems are far too complex

5. Users consider the quality and layout of help information to be very poor

QUESTION FOUR

You have been asked to design a means of testing the user interface on a new program that allows people to keep track of personal finances on their home computer. Write a report describing how you intend to test the usability of the program. The report should cover the various tests that you intend to perform, the reasons behind each test and the way in which the results for each test will be evaluated. **(25 marks)**

Some good points made with respect to how software could be tested. Very little was made of identifying appropriate test cases. Again, the structure of the answer made it difficult to extract relevant information.

Answer Pointers

Somehow, you need to find out – directly or indirectly – how dummies get on with the new software. There are issues of who you use to test the software which relates to a users computer experience – also a users knowledge of the domain within which the software works. (In this case financial)

One way is to test in a laboratory type environment. You will usually require a room for test participants, areas for testers, and a way of monitoring the test process. Usually the user will be given a number of tasks to perform and the way in which the user interacts with the software can be monitored. In this case the user could be given a number of procedures to perform such as add transactional based information, transfer money between one account and another, set up mortgage debt details etc. Another way is the use of the surveys. Users can be asked how easy/difficult it was to perform certain tasks.

QUESTION FIVE

How would a web interface for selling books differ from an airport Air Traffic Control interface? **(25 marks)**

This was a popular question on screen displays and most candidates made a good attempt at answering it. The majority of students showed familiarity with the systems and answered reasonably confidently, identifying what needs to be done. The only slight disappointment was that they did not link the features to specification, nor did they identify the most important features.

Answer Pointers

Air Traffic Control:

1. Safety critical / Time critical Application. Clarity of information is important and a big issue in the design of the interface

2. Complexity of Air Traffic Process – Many sources of information are required for the safe and efficient running of the control system. The information must be presented to the user in a uniform manner

3. Alarms may be necessary for safety violations

4. Point and select item interfaces

5. Help systems will need to be extensive

6. Duplication of some of the system will be needed in case of failure of a subsystem. The user would be an expert and familiar with the system

7. Monitoring tends to be a passive task

<u>Book purchase:</u>

1. The web site should offer search facilities, classification of books in terms of type

2. May allow a user to read a chapter prior to purchase

3. Shopping basket and calculator

4. The user is likely to be a novice

5. Security of Credit Card purchase is an issue

6. Purchase is an active task