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Faculty of Information Technology
Department of Software Engineering
Examination Paper

Course Name: GUI (?????) **Section: 2** **Semester 2**
Final Exam **Time**: 120 minutes

Information for Candidates
1.*This examination paper contains questions **6** totaling* **40 marks.**
2.The marks for parts of questions are shown in round brackets.
Advice to Candidates
1. You should attempt all questions
2. You should write your answers precisely, clearly and to the point.

I. Basic Notions

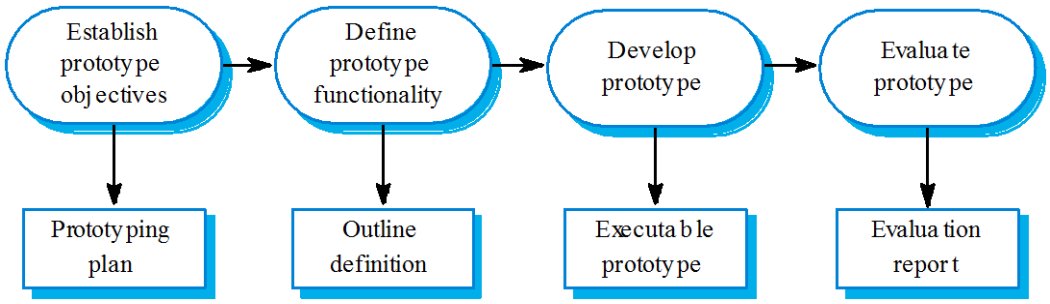
Objectives. *The aim of the question in this part is to evaluate the required minimal student knowledge and skills. Answers in the pass category represent the minimum acceptable standard.*

Question 1 (6 marks)

What are the benefits of prototyping?

- Improved system usability.
- A closer match to users' real needs.
- Improved design quality.
- Improved maintainability.
- Reduced development effort.

What are main processes of prototyping?



What kinds of prototype?

Low-fidelity Prototyping

- Uses a medium which is unlike the final medium, e.g. paper, cardboard.
- Is quick, cheap and easily changed.
- Examples:
  sketches of screens, task sequences, storyboards, etc…

High-fidelity prototyping

- Uses materials that you would expect to be in the final product.
- Prototype looks more like the final system than a low-fidelity version.

Question 2 (6 marks)

What is evaluation?

- The role of evaluation:
  - We still need to assess our designs and test our systems to ensure that they actually behave as we expect and meet user requirements.
- Evaluation should not be thought of as a single phase in the design process.
- Evaluation should occur throughout the design life cycle, with the results of the evaluation feeding back into modifications to the design.
- It is not usually possible to perform extensive experimental testing continuously throughout the design, but analytical and informal techniques can and should be used.

Goals of Evaluation

- Evaluation has three main goals:
  - To assess extent and accessibility of the system's functionality.
  - To assess user's experience of the interaction.
  - To identify specific problems with the system.

Objectives of User Interface Evaluation

- Key objective of both UI design and evaluation:

"Minimize malfunctions"

- Key reason for focusing on evaluation:
  - Without it, the designer would be working "blindfold".
    - Designers wouldn't really know whether they are solving customer's problems in the most productive way.

II. Familiar Problems Solving

Objectives. *The aim of the question in this part is to evaluate that the student has some basic knowledge of the key aspects of the lecture material and can attempt to solve familiar problems.*

Question 4 (6 marks)

Describe if the following GUIs have a problem or not?

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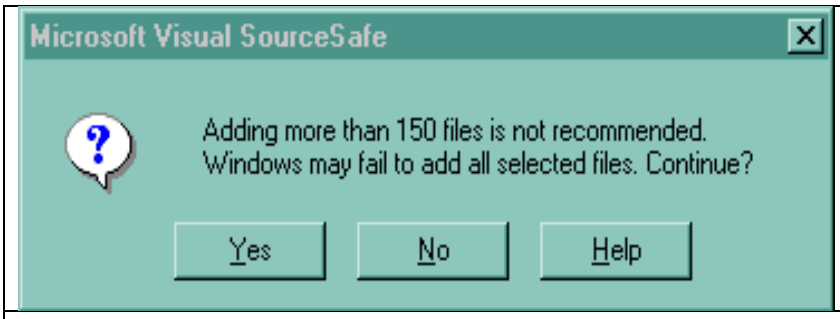
<tr><td> 
</td><td></td><td>Umm, thanks for the warning, but what should I do?</td></tr>
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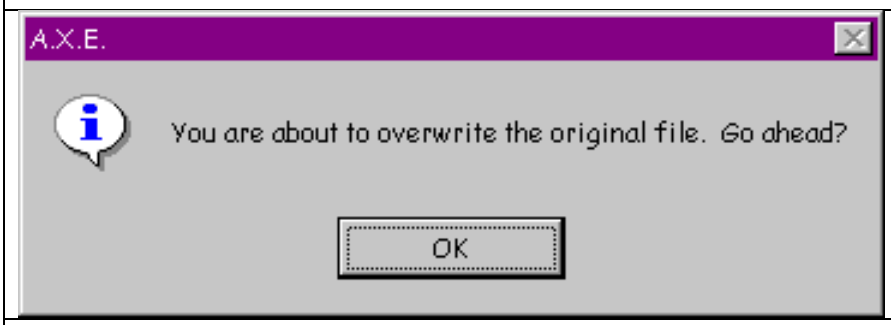
<tr><td> 
</td><td></td><td>Do I have any choice in this?</td></tr>
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</td><td></td><td>Uhhh… I give up on this one</td></tr>
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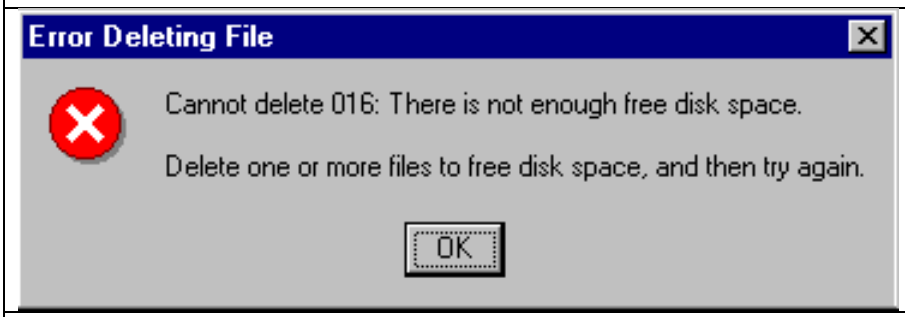
<tr><td> 
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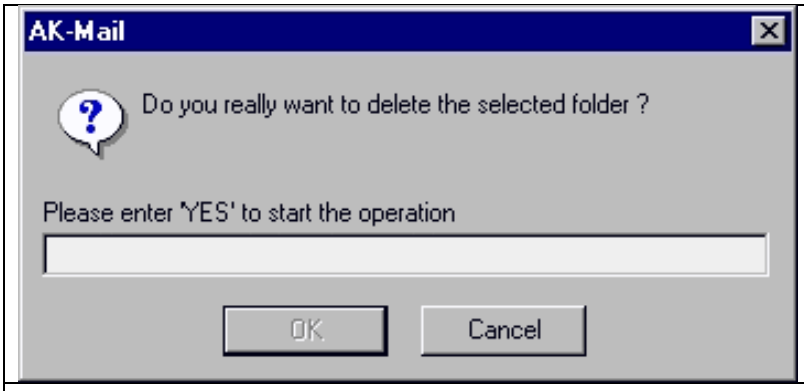

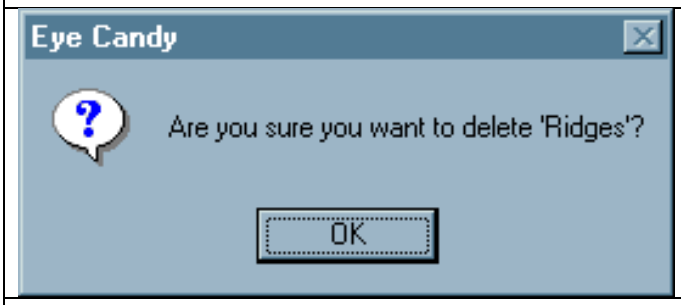

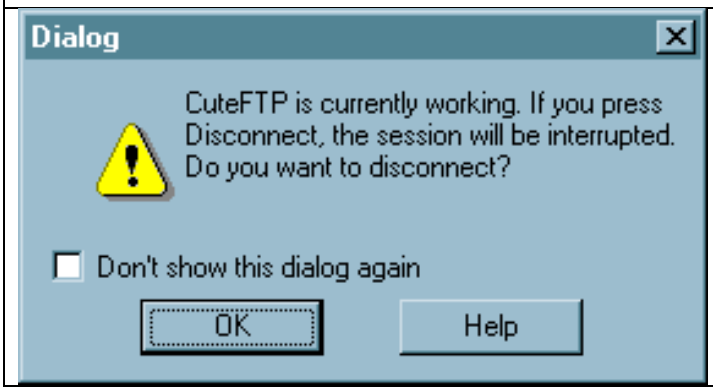

Question 6 (8 marks)

Briefly explain why a designer's model of a system will be different from the end-users?

Designers, typically, have some understanding of the way in which a system is implemented (1 mark). They are also likely to have more expertise and experience with a range of information technologies and interaction techniques (1 mark). This makes it difficult for them to place themselves in the position of a novice user with an interactive system (1 mark). Conversely, many designers lack the everyday domain knowledge that is possessed by end-users (1 mark). Hence they may fail to adequately consider the working practices that must be supported by software (1 mark). Note: in the lectures they have seen various diagrams representing different user models possessed by the designer and the end-user so some answers may sketch these for 2-3marks.

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

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.

III. Unfamiliar Problems Solving

Objectives. *The aim of the question in this part is to evaluate that the student has some basic knowledge of the key aspects of the lecture material and can attempt to solve unfamiliar problems.*

Question 6 (10 marks)

The following screen-shot is taken from the Microsoft XP operating system. As can be seen, it helps users to manage the security settings for their computer.

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).

the interface provides a considerable amount of contextual information about the options that are available. It does not simply provide buttons or menu options but it embeds them within the explanation. Some students may notice that there are double cherons (arrows) on the right hand side of the sections entitled Firewall, Automatic Updates and Virus Protection. These can be used to alter the amount of additional help that is provided. Hence, the help on Automatic Updates is hidden while the user has uncovered the rest. The interface also shows how the distinction between the operating system and web-based information sources is becoming blurred as hypertext links are used to follow additional information. Some of these links such as 'How does a firewall…' access local help files. Other such as 'Check for updates' rely on external servers to identify additional information. Some solutions may also choose to comment on the Microsoft privacy statement at the bottom of the window.

Other solutions may refer to more standard features of the interface including the window title, the use of colour in the active window, the ellipses to indicate a further dialogue box under Recommendations etc.