UNIVERSITY OF LONDON

GOLDSMITHS COLLEGE

B. Sc. Examination 2012

COMPUTING AND INFORMATION SYSTEMS

IS53008A   User Interface Design

Duration: 2 hours 15 minutes

There are five questions in this paper. You should answer no more than THREE questions. Full marks will be awarded for complete answers to a total of THREE questions. Each question carries 25 marks. The marks for each part of a question are indicated at the end of the part in [.] brackets.

There are 75 marks available on this paper.

No calculators should be used.

THIS PAPER MUST NOT BE REMOVED
FROM THE EXAMINATION ROOM

Question 1   Usability and user experience

(a) What is meant by usability and user experience? How do they differ?   [4]

(b) You are evaluating an application that allows users to edit and print photographs. Explain the following terms and suggest a way of assessing each of them:

   i. efficiency   [3]

   ii. memorability   [3]

   iii. satisfaction   [3]

(c) For the following systems, give two usability and two user experience features that are important for the success of each. Explain why these features are important in terms of the type of end user they will have:

   i. WYSIWYG web editing software   [3]

   ii. a compact digital camera   [3]

   iii. an online bookshop   [3]

   iv. an educational computer game   [3]

Question 2   Data gathering

(a) What is meant by triangulation in the context of data gathering?   [3]

(b) Describe three advantages of using an online rather than a paper-based question-
naire.   [3]

(c) What problems might arise in terms of sampling when using an online question-
naire?   [2]

(d) You have been employed to improve the design of a DVD player to make it easier
to perform the intended tasks.

   i. Explain how you would use each of three data gathering techniques – interview,
questionnaire, and direct observation – in your data gathering.   [6]

   ii. Describe the qualitative and quantitative data you might collect using these
methods. How might you analyse this data?   [6]

   iii. Explain why indirect observation might be used. Describe the advantages and
disadvantages of two techniques for doing this.   [5]

Question 3   Requirements and task analysis

(a) You are involved in developing a new e-commerce site for selling sports equipment, taking a user-centred approach. Explain what is meant by user-centred design and give specific examples relating to the development of your e-commerce site.   [5]

(b) Suggest a functional, data and environmental requirement for the above web site.   [3]

(c) One of the potential user groups identified for the above website is "enthusiastic amateurs".

    i. Create a persona for this user group   [4]

    ii. Write a scenario involving this persona   [3]

(d) Write a use case for purchasing a piece of sports equipment from the website.   [6]

(e) Describe the difficulties with using task analysis on real problems.   [4]

Question 4   Design and implementation

(a) Give three advantages and three disadvantages of using:

    i. low-fidelity prototypes [6]

    ii. high-fidelity prototypes [6]

(b) You are designing the interface for an online media player.

    i. Explain how an interface metaphor can help users understand a product. [2]

    ii. What interface metaphor might be suitable for the online media player? How might you extend this metaphor? [4]

    iii. What objections are there to the use of metaphors in interface design? Give examples where appropriate. [3]

    iv. Identify tasks for the online media player that would be best supported by each of the interaction types – instructing, conversing, manipulating, exploring. [4]

Question 5   Evaluation

(a) Why is it important to test your design early in the software development cycle?   [2]

(b) You have been asked to perform usability testing on a system that allows students to see their records and exam results online.

   i. What kind of concerns might the users have about using the online system?   [2]

   ii. Why is it important to record the level of experience of the users?   [2]

   iii. The users are given five minutes to explore the system before starting the tasks. Why is this important?   [3]

(c) State six quantitative performance measures that could be used to collect data during the usability testing of the above system.   [6]

(d) Describe the environment that would be required in order to carry out this usability testing.   [4]

(e) Describe the overall process that would be required in order to carry out this usability testing, giving examples where appropriate.   [6]