Autumn Repeat Examinations 2009/ 2010

Exam Code(s)	3IF121; 3BA1; 4BA1;1MF1; 1SD1
Exam(s)	B.Sc. in Information Technology
	B.A.
	MSc in Software Design and Development
	Higher Diploma in Software Design and Development
Module Code(s)	CT318
	CT865
Module(s)	Human Computer Interaction
Paper No.	1
Repeat Paper	
External Examiner(s)	Prof. Michael O'Boyle
Internal Examiner(s)	Prof. Gerard Lyons
	* Ms. Karen Young

Instructions:
Candidates should answer any **three** questions.
All questions carry equal marks.

Duration
2 hours

No. of Pages
3

Requirements:
MCQ
Handout
Statistical/ Log Tables
Cambridge Tables
Graph Paper
Log Graph Paper
Other Materials

Release to Library: Yes

Q.1 You have been asked to design an interactive system to support a bike rental scheme in Galway, similar to those deployed in other large European cities: bikes can be collected from a number of points around the city and returned to any other point. The system must be robust for public settings, enable user data input (user details etc.) and payment details; it should also provide maps of interest and identify bike-drop-off points and general bike availability, as well as a means to report damage to bikes or guidelines for puncture repair, etc.

Your company has indicated that they want an initial design submission from you to include the following:

    (a) A PACT analysis for this application.

[5]

    (b) A paper prototype of three of the interface screens, representing the system's functional organisation and overall "look and feel". Clearly outline your rationale for each of the design choices you make (e.g. interaction styles).

[9]

    (c) An evaluation plan, clearly outlining what activities, when, how and by whom the evaluation activities will be undertaken, for the system which will support comprehensive testing of your design.

[6]

Q. 2. (a) *Anthropomorphism has no place in interactive software design*. Comment on this statement supporting your answer with relevant examples.

[7]

(b) HCI incorporates the study of novel interaction techniques with technology. Current interactions largely rely on vision (screen presentation of information) and touch (keyboard, touch-screens, etc.). You have been asked to propose a new interactive technique given the many shortcomings of traditional vision and touch interaction. Outline the difficulties with traditional technology interaction and the benefits of your new proposed interactive technique in a memo to the management team in your software organisation.

[8]

(c) In designing an interactive application there are many guidelines available to help the designer. Discuss the type and role of guidelines in producing good interactive web-based systems.

[5]

Q. 3. (a) EZ-Pal is your friendly mobile companion. EZ-Pal moves from your alarm clock to your mobile phone to your TV. EZ-Pal helps you with things such as recording your favourite TV programme, setting the security alarms, heating and lighting on your house, remembering your shopping list and remembering special days such as birthdays. Discuss the design issues that EZ-Pal raises and outline a conceptual model for the design.

[10]

(b) Write a one-page memo to your colleagues in your software design company, proposing the adoption of co-operative evaluation techniques during design to improve the success of the interactive systems designed by your company.

[5]

(c) What makes something easy to use? What are the properties of an interactive system that make it easy to use for an ageing population?

[5]

Q. 4. (a) Evaluation is critical to the development of effective interaction systems. HCI provides a variety of models, frameworks, and techniques to support the developer in properly evaluating their interactive systems before, during and after development. Compare and contrast the various approaches you have studied during this module, illustrating your answer with examples.

[9]

(b) Comment on the efficacy of *software tools* in supporting interactive system design.

[5]

(c) Choose an appropriate evaluation method for each of the following situations. In each case identify: the participants, the technique used, the representative tasks to be examined, measurements that would be appropriate, and an outline plan for carrying out the evaluation.

(i) You are designing a new information kiosk for a museum and you wish to test what type of interaction technique and icons will be most intuitive.

(ii) You have an idea for a new parking control system to be used by staff and students of NUI, Galway to reduce search time for a vacant car park space, and resulting traffic congestion on campus.

(iii) You have designed and implemented a new energy usage assessment tool for domestic use and want to test it before release.

[6]