NUI Galway
OÉ Gaillimh

Semester I Examinations 2017/ 2018

Exam Code(s)	3BCT121; 3BA1; 4BA1
Exam(s)	B.Sc. in Computer Science and Information Technology B.A.
Module Code(s)	CT318
Module(s)	Human Computer Interaction
Paper No. Repeat Paper	1
External Examiner(s) Internal Examiner(s)	Professor Jacob Howe Dr. Michael Schukat Ms. Karen Young*
Instructions:	Candidates should answer **Question 1** and **any two other** questions. All questions carry equal marks.
Duration	2 Hours
No. of Pages	3

Requirements:

Release in Exam Venue	Yes	X	No	
MCQ	Yes		No	X
Handout	None			
Statistical/ Log Tables	None			
Cambridge Tables	None			
Graph Paper	None			
Log Graph Paper	None			
Other Materials	None			
Graphic material in colour	Yes		No	x

Q.1 You are based in New York and are working on a global software engineering team. You work with colleagues in Los Angeles, London, Mumbai, Hong Kong, and Sydney and often collaborate on large projects, from requirements specification through conceptual and physical designs and prototypes to full implementations. You have been asked to work with a small team to create an ideal online tool set that would enable you to collaborate effectively during software development activities. They are particularly concerned initially with supporting the early requirements analysis activities and sharing of system models and designs.

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

(a) A PACT analysis for this application.

(6)

(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.

(5)

Q.2 (a) *There is no "right" design, just good and bad designs.*

Discuss the role of design principles in supporting the development of good interactive systems, illustrating your response with examples as appropriate.

(8)

(b) You have been tasked with undertaking a redesign of the university's website. Prepare an outline **evaluation plan** for this project clearly outlining the goals and activities (when, how and by whom the evaluation activities will be undertaken, for the system) involved in the evaluation.

(7)

(c) Effective **error messages** are critical to good user interaction design. What is the purpose of error messages? What factors are important in their design? Design an appropriate error message for a user who is unsuccessfully trying to gain access to a service they do not currently have clearance to access.

(5)

Q.3 (a) Research in interaction design has identified two distinct approaches to the cooperative interaction between human and computing agents: the **human centred** and **machine centred** views. Norman characterises the differences in these approaches as those between analogue and digital agents. What are the implications of this for effective interaction design?

(8)

(b) You have been tasked with developing a website and mobile application for **a chain of bookstores**. Outline the progression from **Conceptual** to **Physical** Design in this context, clearly identifying the inputs and outputs for each design phase.

(6)

(c) Write a one-page memo to your colleagues in your software design company, advocating the requirement to incorporate **physiological data** collection in all interactive product **evaluations** from a future date.

(6)

Q.4 (a) You have been asked to design a ***remote control*** device that can be used to control the variety of heating and lighting mechanisms in a new block of apartments. Prepare a prototype design, outlining the **user considerations** you found relevant in solving this problem.

(8)

(b) Elaborate the role of **prototyping** (both low and high fidelity) in improving the interaction experience of users using technology. Your answer should give consideration of **what** is prototyped and **when** during the design of an interactive experience.

(6)

(c) Which **interaction style** would you apply to the design of each of the following and why?

- A blood pressure monitoring device.
- A self-service petrol dispensing and payment system.
- A language learning mobile application.

(6)