



MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2012/2013

THIRD YEAR SECOND SEMESTER EXAMINATIONS FOR THE DEGREE OF BACHELOR OF SCIENCE IN COMPUTER SCIENCE (HOMA BAY CAMPUS)

CCS 309: HUMAN COMPUTER INTERACTION

Date: 28th July, 2013

Time: 11.00 a.m. – 1.00 p.m.

INSTRUCTIONS:

- ♦ Answer ALL questions in SECTION A and any other TWO questions from SECTION B.
- ♦ Write your registration number on all sheets of the answer book used.
- ♦ Use a NEW PAGE FOR EVERY QUESTION attempted, and indicate the question number on the space provided on each page of the answer sheet.

Question one [30 Marks]

- A. List the types of interaction style, with an example of each. Can one be seen as more general than the others? [8 marks]
- B. Illustrate the main aspects of any interaction object using the Print dialogue box of a Macintosh application as an example. [4 marks]
- C. What are the 3 kinds of dependency or inheritance between interaction objects that are important in user interfaces? Illustrate these with reference to the Print dialogue box example. [6 marks]
- D. There is one basic fact or lesson acting as a starting point for HCI. What is it? [2 marks]
- E. What is the basic approach adopted in HCI as a response to this, and how do the various techniques in HCI relate to it? [8 marks]
- F. How are users directly involved in this? [2 marks]

Question two [20 Marks]

- A. In what ways is a form filling dialogue box (e.g. the Macintosh Print... dialogue) similar and dissimilar to issuing a command through a pulldown menu system? [5 marks]
- B. What are the main parts or aspects of an interaction object? Illustrate by describing what these are for a field in Hypercard. [5 marks]
- C. Discuss Hypercard with respect to HCI framework for critiquing and classifying user interface implementation support. [10 marks]

Question three [20 MARKS]

In HCI, a crucial approach is to modify designs in response to detecting bugs in the user interface. This process of going from tests to design changes can be divided into stages. How might these stages be referred to in

- A. an analogy with medicine and the detection and cure of illness, b) in the prototyping design cycle? [5 marks].
- B. Describe each stage, giving examples of methods for each stage, and illustrated by an example of a problem [10 marks].
- C. What problems do you think there are in giving a specific number in answer to the question "How many bugs have you found in this user interface?" [5 marks]

Question Four [20 Marks]

- A. In Macwrite, rulers control the margins (among other things), and there are two separate markers controlling the left margin and the paragraph indent. Many users, it has been observed, find it easy to discover by trial and error (in perhaps 2 seconds) which is which, but never learn: they simply experiment again each time. How would you describe this case in terms of a user's learning curve and its associated costs? [6 marks]
- B. What kind of task analysis is the theory of action in comparison to other possible types of task analysis? [6 marks]
- C. What are the issues dealt with in the planning step of the theory of action? Give a non-trivial example plan from the Macintosh Finder. What is the difference between the planning and translation steps? Give an example from the Finder of two translations for one plan. What are the corresponding steps on the perception side? Give brief descriptions of what they do. Give an example of each of these drawn from the Macintosh Finder. [8 marks]

Question five [20 Marks]

- A. Describe the 5 main steps in the prototyping cycle, and the output of each step. [10 marks]
- B. How might you begin the cycle for a new design? [5 marks]
- C. What might you use to help you go from understanding a problem to proposing a design change? [5 marks]