UNIVERSITY OF PORTSMOUTH

BACHELOR OF SCIENCE (HONS) IN COMPUTING

AUGUST 2004 EXAMINATION

16 AUGUST 2004

IT356 HUMAN COMPUTER INTERACTION

TIME: 3 HOURS

☞ **INSTRUCTIONS:**

- Read the attached case study carefully before attempting any of the questions.
- Answer all **THREE (3)** questions.
- Each question carries equal marks.
- Please start every question on a new page.
- Answers will not be marked if they are illegible.
- Write the question numbers (in the order you have attempted them) in the boxes provided in the answer booklet(s).
- Write your **INDEX NUMBER** and **MODULE NUMBER** on the cover page of the answer booklet(s).

Scenario

You work in the IT department of a General Hospital. One morning you receive a telephone call from your Information Systems Director. He wants you to draft out an Interface design plan for the meal-ordering system. This system is a computerization of the meal ordering process for each ward in the hospital. At present, all meals ordered by all stay-in patients of the hospital are handled manually. The nurses on duty go around taking down meals required by each patient in her ward. She notes down the special meals required by various patients (e.g. diabetic patients require special foods). This is a laborious task as it requires her to go from bed to bed taking orders. The meal order slip of paper is then faxed to the kitchen for the preparation of the meals.

The manual system is cumbersome and error prone. The kitchen staff complain that they have difficulty reading the handwriting of the nurses. In addition, new patients do not get their meals ordered on time. At times the meal order slips arrives late and this results in wrong preparation of meals for patients especially those on special diets. This is potentially quite dangerous.

The project uses a hand held computer and custom software to computerize the entire meal ordering system. Specialised hardware (for example a bar code reader) may be available if desired. The meal orders are sent to the kitchen electronically. The hospital already has a sophisticated local area network that supports all wards and departments.

The Information Systems Director advises that you consult other project managers on their views of a meal-ordering system Interface. The proposed system must be user-friendly, so that all the staff are able to handle the system. Some medical staff are not very enthusiastic about IT systems, as they see themselves as in a 'human' centred profession.

In the context of the system discussed above answer each question.

QUESTION 1: TASK ANALYSIS

Looking at the scenario, you can see that there are a number of tasks that the system would need to support. Some of these are easy, some more difficult.

a) Provide a list of tasks the system supports, for each give a brief description.

(6 Marks)

b) Decide which task is likely to be the most difficult (briefly give reasons why) and perform a task analysis using one of the task analysis techniques described in the unit. You should list any assumptions you make about the design of the system or task details.

(16 Marks)

c) Discuss the extent that the Task Analysis technique has helped you understand how difficult the task is.

(11 Marks)

[TOTAL FOR QUESTION 1: 33 MARKS]

QUESTION 2: HCI THEORY

a) What activities are required in order to design an interactive product such as the one specified in the scenario, and how do lifecycle models show the relationships between those activities?

(18 Marks)

b) The Star Life Cycle has been advanced as an HCI life cycle model. Using examples from the scenario, discuss the central role of 'evaluation' in the design process. You should either identify reasons why this life cycle model is appropriate in addressing design problems like the one in the scenario.

(15 Marks)

[TOTAL FOR QUESTION 2: 33 MARKS]

QUESTION 3: EVALUATION

a) Provide an empirical evaluation plan for an evaluation, using a horizontal prototype representing the proposed new design. You should provide a rationale for the plan.

(15 Marks)

b) Cognitive Walkthrough has several advantages and disadvantages compared with empirical evaluation. Identify two advantages and two disadvantages and relate them to the scenario by means of example cognitive walkthroughs.

(18 Marks)

[TOTAL FOR QUESTION 3: 33 MARKS]

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