Xi'an Jiaotong-Liverpool University
西交利物浦大学

Semester 2, 2021/22 Resit Exam

Undergraduate - Year 3

Human-Centric Computing

Exam Duration: 2 Hours

Crash Time Allowed: 15 Minutes

Instructions to Candidates

1. This is a remote open-book examination. Please tick the integrity disclaimer immediately when uploading your answers on LMO and complete the assessment independently and honestly.
2. Total marks available are **100 marks**. This exam consists of **three questions** in total. The mark allocated for each question is indicated at the end of the question.
3. Answer **ALL** questions. There is **NO** penalty for providing a wrong answer.
4. Write down your solutions on **blank or lined A4 sheets**. List **ALL** the sources you used to answer the questions at the beginning of your answer sheet. Clearly indicate the **question numbers** before your solutions.
5. Only **English** solutions are accepted. Answers need to be handwritten and fully and clearly scanned for submission as **one single PDF document** via LMO upon completion of the exam. Make sure your writings are clear to read.
6. The duration is **2 hours**. An additional **15-minute** crash time beyond the exam duration will be allowed for you to report and resolve minor technical issues which may be encountered during the exam. Where there are any major problems preventing you from continuing the exam or submitting your answers in time, please do not hesitate to email the Module Examiner or Assessment Team of Registry (assessment@xjtlu.edu.cn).

Paper Code: CPT208/21/22/S2/Resit

Question 1 Design (40 marks)

(a) What are the **four** phases of the double diamond of design? Please draw the diagram. Is it a linear process or an iterative process? Discuss how you have followed this in your group project. Give specific examples. [10]

(b) Identify **three** design principles and give a specific example of each to show how it follows or violates the design principle. Propose a solution for the design if it violates a design principle. [9]

(c) To what degrees can users be involved in interaction design? What are the advantages and disadvantages? [6]

(d) What are the **three** principles of a user-centered approach? How did you follow the principles in your group project? [6]

(e) We talked about twenty interface types in the class. Identify **three** interfaces that are related to Learning Mall, and discuss the design considerations. [9]

Question 2 Prototype (30 marks)

(a) Why is prototype important? What are the **three** main goals of prototyping? Please explain how a prototype of online shopping site can achieve these goals. [10]

(b) What are the different characteristics of horizontal and vertical prototyping strategies? Which dimensions of fidelity are reflected in these strategies? If you are asked to design a prototype for an online shopping site, how would you follow these strategies? [10]

(c) What are storyboards in prototyping? If you are asked to design an online shopping site, please create a storyboard of this system by drawing at least **four** key scenarios. Provide a short description for each scenario. [10]

Question 3 Evaluation (30 marks)

(a) Identify **two** data gathering techniques that can be used to discover requirements for a workout / fitness / exercising app called *MoveWithMe*. For each technique, explain the purpose, how you plan to do it and give specific examples. [10]

(b) A group of students have done a series of work to improve the design of the workout app and developed *MoveWithMe 2.0*. Now they want to use an experimental study to investigate whether the usability of the app is improved. What are the independent variable and dependent variable? What is the null hypothesis? Provide a detailed experimental plan that describes your preparations, the experimental settings, what users need to do, how you collect, analyse and interpret the data. [10]

(c) During the requirement collection for the *MoveWithMe* app, you found that a large group of people prefer outdoor activities, such as walking and running with their dogs. How can you obtain in-depth understanding about their requirements? What, where, when and how can you evaluate your design? Please provide as many details and examples as you can, and make it clear if you are making assumptions and claims. [10]

——— *End of Questions* ———