



Xi'an Jiaotong-Liverpool University

西交利物浦大學

Semester 2, 2021/22 Final 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).

Question 1 Design (40 marks)

- (a) What are the **four** basic activities of interaction design? Please draw the design lifecycle. Discuss how you have followed this in your group project. Give specific examples. [10]
- (b) Is the Learning Mall login page a good design or a bad design? Please justify your answer using at least **two** design principles. How do design principles inform the interaction design? [10]
- (c) The university is planning to adopt a user-centered approach to redesign the Learning Mall login page. Who should be involved in the design? Are they users or stakeholders? What is the difference between users and stakeholders? What are the benefits of involving them? [10]
- (d) We talked about **five** interaction types in the class. Explain how Learning Mall supports these interactions using specific examples. [10]

Question 2 Prototyping (30 marks)

- (a) What does fidelity mean in a prototype? Please give **two** examples of low-fidelity prototypes and explain how they reflect the main advantages of low-fidelity prototypes. [10]
- (b) Please list **five** dimensions in measuring the fidelity of prototypes. How will you design low-fidelity and high-fidelity prototypes in each of the **five** dimensions for a photography system? [10]
- (c) Why is the design of icon difficult? What are **two** principles of the icon design? Please draw an icon for the representation of “emergency contact”, and justify how it reflects the principles in icon design. [10]

Question 3 Evaluation (30 marks)

- (a) Identify **two** data gathering techniques that can be used to discover requirements for a takeaway app called *GanFanBa*. 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 takeaway app and developed *GanFanBa 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 to collect, analyse and interpret the data. [10]
- (c) As a complement of the *GanFanBa* app, you are asked to design a *SongFanQu* app which is for the delivery men to use. It should support them to take delivery orders, pick up meals from restaurants, and deliver meals to customers. 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* ————