

DEPARTMENT OF COMPUTER & INFORMATION SCIENCES

CS 991 MOBILE APPLICATION DEVELOPMENT 2018/19 GROUP ASSIGNMENT

Aims

The aims of this assignment are to:

- gather requirements and design a mobile application;
- implement this system under the Android platform;
- use appropriate techniques for testing and evaluation (with respect to usability and accessibility);
- write and produce documentation for the various development phases; and
- work as part of a team.

Learning outcomes

After completing this assignment, you will be able to:

- understand the special nature of mobile application development;
- understand and develop graphical user interfaces for mobile applications;
- understand networking requirements/challenges for mobile application development, and understand and develop solutions;
- understand the fundamentals of usability for mobile development and run usability testing studies.

Brief

The goal of this group project is to design, implement, test and evaluate a mobile application for Android with respect to Usability and Accessibility. You are expected to adopt a user-centred approach throughout. The project is intended to be open-ended, ambitious, and requires teamwork. The goal of the project is to cover the full lifecycle of designing, implementing, testing, and evaluating a mobile application over a period of four weeks. Therefore, it is more likely that you will have to:

- | | |
|---|-----------------------------|
| * Obtain user ideas | * (Rapid) – Prototype |
| * Decide on the general design approach | * Test |
| * Specify the initial requirements | * Evaluate |
| * Design | * Refine the design |
| * Evaluate the design | * Refine the implementation |

Marking criteria

The following criteria will be used when marking your assignment:

- | | |
|---|----------|
| 1. Project conduct (including Peer/Self-assessment as an <i>individual mark</i>) | 15 Marks |
| 2. Weekly progress meetings with Lecturer (<i>individual mark</i>) | 5 Marks |
| 3. Project deliverables (<i>refer to the end of this document for a breakdown of the marks</i>) | 80 Marks |

Format

This is a group assignment. Plagiarism/collusion¹ checks will be performed on all submissions. All submissions are through MyPlace.

Contribution to overall mark

This assignment contributes 50% towards your final class mark.

Due date

Final deliverable: by 11AM Monday March 25th 2019².

Intermediate deliverables: *refer to assignment brief below for exact dates*.

Demos will take place on 25th and 26th of March, times TBC. Attendance of ALL demo sessions is compulsory.

¹ Penalties apply.

² Penalties apply for late submission (for ALL deliverables). Please refer to the PGT Handbook for details, i.e. "Late submission policy".

Assessed Tasks, Project Phases & Deliverables

Phase 0: Project kick-off

This is today! You have been allocated to groups of four or five. In your groups, you must suggest an appropriate project topic. Your topic must be approved by the lecturer. Furthermore, you must assign roles to all group members.

Deliverable: A Project Plan for the entire project, which identifies high-level milestones and allocation of tasks to group members.

3 Marks, Deadline: 26/02/19

Phase 1: Requirements and Rapid Prototyping

The team must gather, document and analyse the system requirements. You are expected to use a variety of techniques, e.g. brainstorming, investigation of existing systems, interviews/questionnaires/observations etc., and also provide satisfactory evidence that you have followed a user-centred approach.

In parallel, the team must produce a low-fidelity (or low to medium if you prefer) prototype of the mobile application to be used later for evaluation and testing.

Deliverables:

1. Evidence that you have used a variety of requirements gathering techniques and that you have followed a user-centred approach.

5 Marks, Deadline: 04/03/19

2. A use case diagram for your system (based on your requirements gathering), and structured descriptions of **at least two (2)** use cases.

5 Marks, Deadline: 04/03/19

3. A low-fidelity (or low to medium if you prefer) prototype.

5 Marks, Deadline: 04/03/19

4. A revised Project Plan for the remaining time of the project: who is doing what and by what date, using a Gantt chart (or an equivalent diagrammatic alternative).

2 Marks, Deadline: 04/03/19

Phase 2: Initial Evaluation & Testing and Iterative Prototyping

Using your prototype(s) from Phase 1, the team must perform an initial evaluation of the mobile application. You are expected to provide satisfactory evidence that you have followed a user-centred approach, and that you have also evaluated your design with respect to Usability and Accessibility.

In parallel, the team must produce a medium-fidelity (or medium to high if you prefer) prototype of the mobile application to be used later for further evaluation and testing.

Deliverables:

1. Evidence that you have followed a user-centred approach to evaluate/test your mobile application, including any qualitative and/or quantitative results of your evaluation.

5 Marks, Deadline: 07/03/19

2. Revised specification based on the outcomes of your evaluation/testing. This can be in the form of a revised requirements list and/or a revised use-case diagram.

5 Marks, Deadline: 07/03/19

3. A medium-fidelity (or medium to high if you prefer) prototype that reflects the outcomes of your evaluation/testing.

5 Marks, Deadline: 11/03/19

Phase 3: High-Fidelity Prototype and Final Evaluation & Testing

The team must produce a high-fidelity prototype of the mobile application to be used for further evaluation and testing.

Using your prototype(s) currently available, the team must prepare and perform a second round of evaluation/testing of the mobile application. You are expected to use a variety of techniques, and also provide satisfactory evidence that you have followed a user-centred approach to evaluate/test your mobile application with respect to Usability and Accessibility.

Deliverables:

1. Evidence that you have followed a user-centred approach with respect to Usability and Accessibility to evaluate/test your mobile application, including any qualitative and/or quantitative results of your evaluation.

5 Marks, Deadline: 14/03/19

2. Evidence that you have used a variety of techniques for your evaluation/testing.

5 Marks, Deadline: 14/03/19

3. A high-fidelity prototype that reflects the outcomes of your evaluation/testing.

5 Marks, Deadline: 18/03/19

Phase 4: Final Prototype and Presentation/Demo

The team must produce a final version of your high-fidelity prototype.

Based on your final prototype, you are also expected to prepare a presentation/demo that addresses a non-technical audience.

Deliverables:

1. Final version of your high-fidelity prototype.

20 Marks, Deadline: 25/03/19

2. Presentation/Demo for a non-technical audience, i.e. your end users.

10 Marks, Deadline: 25-26/03/19

Breakdown of Marking Criteria

- Project conduct (including Peer/Self-assessment as an *individual mark*) – 15 Marks
- Weekly progress meetings with Lecturer (*individual mark*) – 5 Marks
- Phase 0 Deliverable – 3 Marks
- Phase 1 Deliverables (total of 17 Marks):
 - Deliverable 1 – 5 Marks
 - Deliverable 2 – 5 Marks
 - Deliverable 3 – 5 Marks
 - Deliverable 4 – 2 Marks
- Phase 2 Deliverables (total of 15 Marks):
 - Deliverable 1 – 5 Marks
 - Deliverable 2 – 5 Marks
 - Deliverable 3 – 5 Marks
- Phase 3 Deliverables (total of 15 Marks):
 - Deliverable 1 – 5 Marks
 - Deliverable 2 – 5 Marks
 - Deliverable 3 – 5 Marks
- Phase 4 Deliverables (total of 30 Marks):
 - Deliverable 1 – 20 Marks
 - Deliverable 2 – 10 Marks
 - Group performance – 5 Marks
 - Individual performance – 5 Marks

Good luck!