University of Wollongong
School of Computing and Information Technology

CSCI342 Mobile Applications Spring 2015

Group Project (30 marks)

Code and Documents: Due 11:59pm Friday 30th October, 2015.
Presentation: Due Monday 26th October 2015 (2:30pm -4:30pm)

Aim:
This project will simulate an entrepreneurial mobile development team going through the process of creating an idea and developing their own application. These groups must consist of only 2-3 people. The students will define their idea and their target audience, design the user experience based on the context of the application, provide an implement of their given in the platform's native language and present their application in an environment similar to an investor pitch.

~~The students are free to develop their own project idea and retain any intellectual property rights they have to the idea once the project is finished.~~

Specification:
The students are required to develop a multi screen iOS or Android app from idea to design to code and present their work to the class at the end of semester.

This project estimates that each individual member should spend approximately 48 hours worth of work developing the design and implementation of their chosen idea. This is a reasonable amount of time within a 9 week deadline.

Students will need to consider the following requirements when developing their application
- User Interface and User Experience Design
- Use of platform/s
- Web service integration and/or implementation of similar difficulty
- Innovation and creativity
- Presentation

User Interface and User Experience (5 marks)
Part of creating a mobile application is the design of the application. It is recommended that design should take 60% of the project due to the complexity of designing interfaces for mobile systems. Student applications should support multiple screen sizes and should contain multiple screens (ViewControllers/~~Activities or Fragments~~). Students must justify what screen sizes and resolutions they will be targeting.

Students should consider the following points when designing an interface:

• Application Definition Statement
• Platform consistency
• Context of when a user would use the application
• Structure of the application
• User experience and user interface design
• Feedback to the user

If a group wish to have a single screen application, then they must consult the lecturer to see whether or not the proposed solution conforms to the standard of a third-year tertiary assignment.

As part of this section, groups will be required to submit a storyboard, storyboard drafts and design explanations in a PDF document.

Use of platform/s (10 marks)
Use of platform is split into two sections:
• The usefulness of your group's application on a mobile device
• Using native hardware and software

Great mobile applications are optimised for the mobile platform. They use hardware ubiquitously integrated into devices such as GPS, camera, NFC, Bluetooth and Internet services as well as software libraries that are built into the device which provide a consistent experience across all applications.

Mobile applications are optimised for the context they're used in, whether it is displaying content to the user in a more efficient and friendly interface, or designing controls and flows that work better for users who are on the go.

Student applications will be marked based on their ability to demonstrate the platform's hardware and/or software capabilities. Students will be marked on correct program structure following MVC/MVP patterns, and the patterns utilised in Objective-C, Swift and Java.

If a group decide that they wish to break consistency for a more innovative solution, the group must provide a justification for this in the documentation and the group will be marked on the group's ability to justify and implement the solution.

Students will also be marked based on how gracefully the application fails in situations that are not ideal. It is very common for an application to close at any point in their lifecycle and student applications must be able to handle this situation.

As part of the project, groups will need to adhere to the Human Interface Guidelines (iOS) or the Core App Quality Guidelines (Android). The solution will be assessed based on the group's use of some these principles. Sections involving Unit Testing and Store policy will not be assessed.

https://developer.apple.com/library/ios/documentation/userexperience/conceptual/mobilehig/Introduction/Introduction.html
http://developer.android.com/distribute/googleplay/quality/core.html

A group's use of a .git repository will also be assessed as part of this section. It is expected that multiple people will be contributing to this project with numerous labelled and named commits over the time of the project.

Web Service integration (5 marks)

Students are required to integrate with an online web service with API hooks written by themselves or by third parties. Students will be required to demonstrate that they can push data using a POST request and pull data formatted in a markup language (such as XML or JSON) and display that data to a user in an appropriate format.

Students will need to demonstrate that they can pull data successfully, and that their application can fail gracefully in environments where network reception may be scarce or not available.

~~There are some applications that may not want to use a web service. Groups are allowed to get permission from the lecturer to substitute the 5 marks for Web service integration for 5 marks towards an equally difficult part of mobile development. Students may choose to have an application with local networking protocols, with a strong level of encryption or use a lower-level media framework/package. If your group wish to reallocate marks from web service integration to something else, the group must receive permission from the lecturer.~~

Innovation and Creativity (7 marks)
Seven marks are allocated to groups who can develop an innovative idea and execute that idea. Students should be able to demonstrate ability exceeding the lecture material of this course, implementing concepts and user interfaces that are not covered in lectures and labs.

~~If groups would rather implement a high quality application based on a similar idea (therefore not demonstrating a high level of innovation and creativity), then these seven marks can also be reallocated to groups who submit a high quality, polished application. Only applications that are considered to be App Store/Play Store ready will receive this reallocation~~.

Presentation (3 marks)
In the last week of the semester, students will be required to give a quick 3-minute presentation of your group's application. Groups can have a single person, or multiple people pitch during the three minutes.

The presentation will be given as if the student/s were pitching to an investor. Investors are very busy people who listen to many different application pitches and only have 3 minutes to hear the pitch.

Presentations will have the following points:
• What is the application? This should be a quick elevator pitch of the application with the application definition statement. A quick story as to why someone would use the application or how the group came up with the idea of the application is a great way to present the concept in a short amount of time. This part should go for no longer than a minute.
• What technical challenges did the group face when developing this application?
• How could you extend it in the future and what are the risks moving forward?

Students will also be assessed on their presentation style and the clarity of the information they present.

At three minutes, the group will be asked to stop and answer questions given by the lecturer/s while the next group set up.

Submit:

Submit the following files using Moodle. You will need to zip/tar your project folder into a compressed file. In addition to this provide a `readme.txt` file outlining how to run your program on the lab machines. Make sure the git repository is committed.

The group leader is required to submit a compressed file of the following:

- The group project source
- Design documents and explanations
- Notes regarding application quality (based on the HIG or the Core App Quality Guidelines)
- The project should contain the git repository with data demonstrating when the group started the project, and all commits by different people throughout the course of the project. One commit is not an acceptable solution.
- Time log and tally of hours completed for each student. This will not be assessed, but it is useful for information gathering for the lecturer and for the students.
- Copy of the presentation slides
- A readme.txt outlining how to run the program on the lab machines, and a quick class description detailing each class's function and it's source (whether the group wrote it or if it is from a third-party website). Your readme should also document who is in the group with student numbers and email addresses. The group leader should be noted, as the lecturer may need to contact him during marking.
- ~~If the application is an Android application – the .apk file must be submitted.~~

~~An extension of time for the completion of the assignment may be granted in certain circumstances. A request for an extension must be made to the Subject Coordinator before the due date. Late assignments without granted extension will be marked but the mark awarded will be reduced by 1 mark for each day late. Assignments will not be accepted more than three days late.~~