

# Initial Plan: Mobile Job Lifecycle and Parts Management Application

**Module:** CM0343 (40 credits)

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## Project Description

As this project is to be produced for a real world client there have been some changes to both the scope and purpose of the application since its initial inception. Here is the updated description in light of these changes:

My client, ATM Solutions Ltd, currently employs a number of field engineers who install, service and perform repairs on a range of ATMs (cash machines) throughout the UK. Their current technique of managing this process is to make phone calls to and from the head office. Engineers call the office to be informed of their jobs for the day and as each job is completed they call back to update the office on the status of the job and any parts they may have used. This process however is inefficient of both time and resources and also prone to human error.

A solution is wanted whereby each engineer uses his or her already provided smartphone (specifically an Apple iPhone) to interact with a custom application to streamline this process. The application would provide each engineer with a list of jobs for the day and the ability to manage the entire lifecycle of each job. The engineer would need only to interact with the application thus saving much time and money by removing the need for operators answering phone calls at the head office.

## Aims and Objectives

- To continue spending time familiarizing myself with iOS development environment (Xcode) and the primary language used (Objective-C). Having not developed software using these technologies there has been a significant learning curve.
- To deliver an early proof of concept application which can be used to test whether the barcode scanning technology could be used reliably in a real world situation.
- To develop an appropriate interface so that the application may communicate with the companies existing database.
  - The client would like to use a web service to achieve this.
- To provide a framework that is job centric, it must allow access to the full lifecycle of jobs. This includes the ability to:
  - View today's jobs.
  - Accept a job.
  - Abort a job.

- Complete a job.
- Provide the ability to use the devices built in camera to scan the parts own unique barcode. This can be achieved using any one of a number of existing scanning libraries. At present an open source library named ZBar has proven to be reliable during early testing.
- If time permits the inclusion of some extra features:
  - The ability to view the engineers completed jobs.
  - Integration of a mapping/GPS feature to help locate sites.

As this project aims to deliver the project to a real world client it is important that an early prototype is provided so that they can decide whether the project is feasible using the technologies currently presented. I can therefore see two early deliverables:

- A lightweight iOS application that simply scans one or more barcodes and can deliver them using a very simple mechanism such as e-mail. This allows early testing of the scanning feature before the web service has been implemented.
- A web service that can provide the application with a method of communication with the main database.

Considering the importance of this early prototype I can see that these findings will make up a large part of the interim report. If the report finds that the currently selected techniques and technologies are adequate then development may continue as planned. If for any reason the prototype falls short of what is needed then changes will need to be made before development continues. The final report will therefore contain documentation relating to the development of the application post-prototyping and go into detail about the implementation and potential success of each of the features listed above.

## **Work Plan**

The client has requested an iterative approach to development. We should meet ideally once a month to update them on the overall progress of the project, demonstrate the new features and to make any necessary changes to that which fails to meet the requirements. I will therefore be taking an Agile approach to the project rather than the classical Waterfall model. I have broken down the project into individual chunks that can be developed and demonstrated incrementally to the client:

- The job lifecycle framework.
- The parts scanning feature.
- Any additional features if time and resource permits.

I have broken down the timescale on a week-by-week basis. The iOS prototype and the web service implementation need to be delivered before the interim report so I have scheduled them for delivery within the month of November ready for the report deadline in December. Considering both of these tasks are relatively lightweight I believe this is an achievable goal. Once the report is

complete there must be time allowed for the January exam period and development of the application should resume in week 1 of January. I have made sure that I meet with the client monthly after this time to facilitate the iterative process they have requested. These milestones may change as a result of meetings with the client so they cannot be assumed to be inflexible. If by the Easter break the project is ahead of schedule then this will be the time that the additional features will be considered. The final client deliverable meeting has been set a good deal of time before the final report deadline to allow time to complete a document of that size.

Below is the week-by-week breakdown of the project timetable:

### **November**

Week 6

Week 7 - Deliver the iOS proof of concept.

Week 8

Week 9 - Deliver a suitable web service implementation.

### **December**

Week 10

Week 11 - Interim report deadline.

*Christmas Break*

*Christmas Break*

### **January**

*Christmas Break*

*Exam Period*

*Exam Period*

Week 1

### **February**

Week 2

Week 3 - Meet with client (demonstrate job lifecycle framework)

Week 4

Week 5

### **March**

Week 6

Week 7 - Meet with client (demonstrate parts scanning feature)

Week 8

*Easter Break*

### **April**

*Easter Break*

*Easter Break* - Meet with client (final deliverable)

Week 9

Week 10

### **May**

Week 11 - Deadline for the final report.