ITRW 324

Group 18

Phase 2

Mobile Application



Mr P Rossow

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***Web services Technical : Phase 1***

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# Introduction

After the completion of phase 1, we started developing our mobile application. This application serves a different purpose than our main web application. Where the web application focused more on the physical inventory in storage and the insertion of inventory into the storage facilities the mobile app is designed to carry some of the weight of the employees as well as give structure to the process of developing a vaccine from start to finish.

Some implementations to do this includes a tracker a selection option etc.

How will we do this?

We developed a native mobile application to serve as a tracking device to enable employees to track each batch of vaccines created and be up to date with other sections of the process. Along-side this tracker we have created a basic interface where an employee can initiate a batch and update the database with the new values of current stock levels. By doing this the user will save at least 45-90 mins each time a batch needs to be created by eliminating trivial stuff such as basic calculations.

Technical tools used in this phase:

### Mobile:

* Android studio
  + IDE used to develop the application
* Java (jdk)
  + The main programming language, java was required to create a native app instead of a mobile web application.
* Xml
  + Interfaces, and GUI programming language works with java in android studio.
* JSon
  + Json is needed to parse data from database via the web service(php) and send it to the application file.
* Gradle
  + Android studio tool used to build project
* Emulator
  + Emulators are effective for testing your app easily.

### Web service:

* Php
  + Web service language.
* MySQL
  + Database host.
* Xampp
  + Allows mySQL and Appache.

## Key struggles:

Having no particular app developing skills prior to this phase, one of the key challenges were not only to understand the language in which to program and its syntax but also learning the software (Android studio etc) that goes along with it.

Another key challenge was the combining of the different phases and activities of the project into a coherent application. Although we could not fully accomplish everything we have desired before the deadline we are excited to take on the challenge of creating a coherent cloud-based system in phase 3.

The last major obstacle was to divide the work into small pieces to hand out activities and responsibilities because of the nature of the application. We really strive to handle our planning in a more effective way for the third and final phase.

## The methodology

Initially we went with the agile method model, this means being flexible, iterative and continually producing working software. As a result of a few time wasters we realised we were getting behind schedule. We then took a priority mythology approach by assigning priority values to all uncompleted tasks. We merged this with the iterative nature of the agile method and produced important working software (although it was small parts). The major problem with this was that we transitioned to late and struggled to ‘*fail fast*’. In the next phase, we will aim to implement this fail fast approach more effectively by reducing the time wasted on non-working software and rather change to a more plausible approach.

Whats next?

The next phase of the project includes launching our mobile and web application on a cloud based server such as Amazon, Azure etc. The next phase also includes fixing bugs for previous phases as well as integrating the mobile and web application to function side by side.

## What have we learned throughout this phase:

Phase two was fun and exciting but at the same time terrifying and frustrating. With our basic java background the Java coding for the app was not that difficult, but we had to adapt to some new syntax and layout properties.

The most important things we learned throughout this phase include:

* Creating a native app from scratch
* XML programming language
* The function of JSON in mobile development
* Learning how to fail fast (still a working progress)
* Working as a team to discover and solve problems

# Workflow:

|  |  |
| --- | --- |
| **Member** | **Explination of responsibilities and duties** |
| Jean | Group leader, overall assistance as well as front and back end developing including php, Java, xml. Arranging meetings, keeping up team moral and similar administrative duties also falls under my responsibilities. |
| Stefan |  |
| Ruan |  |
| Ruan |  |
| Charl |  |
| Tiaan |  |
| Henko |  |

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## Conclusion

In conclusion, we are excited to continue to phase 3 where we will be able to apply the knowledge that we have obtained to fix all previous mistakes and present a fully functional system that consists of a web application, mobile application and cloud integration.

We have made many mistakes throughout these previous phases and one key change we would like to make is to fail faster, this will enable us to spend more time on the working parts of the system while giving lower priority to those areas that can hold you back with little fruits to bare.