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## Subtrop Harvest

Name	Student Number
Chris Dreyer	15072623
HD Haasbroek	15046657
Cameron Trivella	14070970
Pearce Jackson	14044342
Idrian van der Westhuizen	15078729

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## **Project details:**

### **1 High level description:**

Subtropical farmers experience problems in keeping track of their yield and the performance of their workers in a easy way. The current system is paper based and it is hard to extract needed data quickly and efficiently. The system we will provide would enable farmers to easily access data relevant to their workers, orchards, yields, foremen and heat maps.

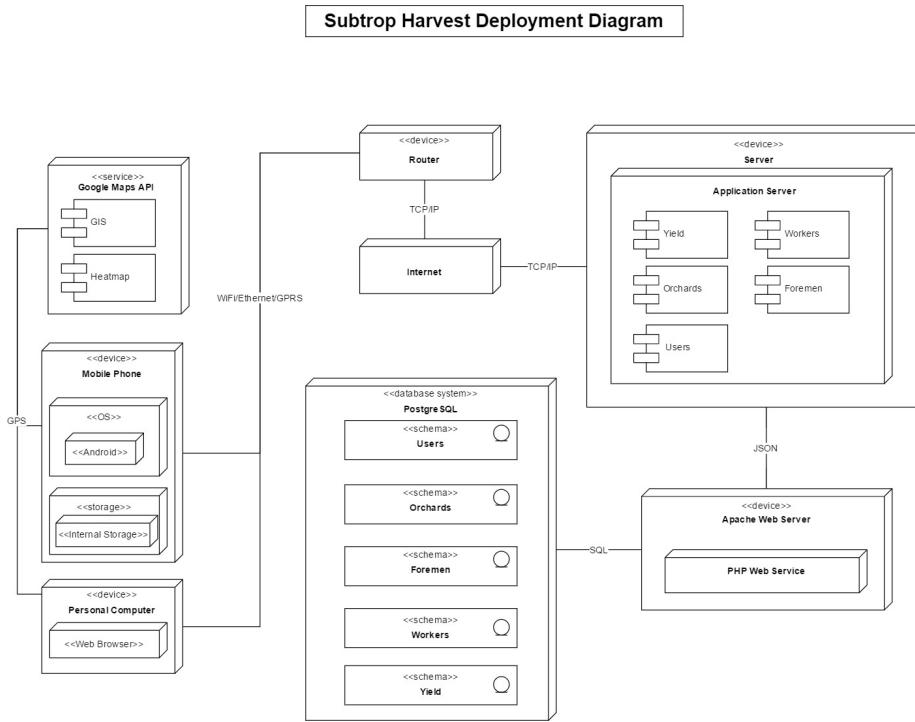
We will use an Android application as the interface for the system and this will also allow the farmers to track their workers and foremen by using the mobile device's built in GPS tracker. The system will be managed through a web interface. This interface will allow farmers to add new users and manage the data relevant to their workers, orchards, foremen, yields and heat maps.

We will use a Google Maps API in the application to manage location data, to mark orchards and to provide heat maps. This will allow farmers to view their farms from the sky and they will even be able to see the color and shape of their crops to more easily distinguish them from other orchards.

All the data including worker data, orchard data, yield data and foreman data will be stored on a PostgreSQL database which will improve data transfer time and scalability. All this data will be transferred either using WiFi or the mobile device's data connection. If a connection cannot be established, all the newly added data will be stored on the mobile device's internal storage and will then be transferred to the database once a connection can be established.

All of this will then later be deployed and demoed on an Android device with the ultimate goal of releasing the app on the Google Play Store to enable anyone from the community to download this application freely.

## 2 Deployment diagram:



## 3 Brief description of methodology:

We will be developing our application using the key features of the agile development methodology, since the agile method seeks more alternatives to traditional project management. The agile method will help us as a team to handle the unpredictability of the development process by using the iterative work cadences and empirical feedback. The Subtrop Harvest application's development will fit in well with the agile method since all integrations and tests can be done in a sequence and then we can enforce that a quality product is delivered. If we find that the product still has room for improvements we will record what needs to be changed and the features will be prioritized for change. The development will then enter another iteration to ensure that only the highest-grade product is released to our clients.

Our clients will play a major role in the development cycle, they will be needed for feedback and reviewing at the end of each development iteration. We value our clients' opinion in the highest since they are the people that need to be satisfied to the fullest. If our clients are unhappy in any way the development will reenter an iteration, then fixes and alterations will be made to improve

the product to the required expectation. We will meet with the client as often as they need us to, we are a flexible group that strive to keep our clientele happy.

The team meetings are seen as very important in this team because communication plays a major role in the success of any project development and for this reason we have come to the agreement of meeting no less than twice per week. Currently the meetings will happen on Mondays to discuss the work that needs to be done in the coming week and to explain what has been done in the development since the last meeting. We do this to ensure that every team member is on board with how the project is developing. We will meet again on Thursdays to review what has been done and to ensure we are still on track with the development cycle to ensure that everyone is on schedule with their tasks, this way we can keep the project on track.

## **4 Team skills:**

Two of our team members have experience in native application development on both Android and iOS, this will make the development of the system considerably faster as there are less members that need to learn how to do native Android or iOS development.

The two members with experience in native application development also has experience in the Google Maps API which will be extremely useful as one of the biggest parts of the application will be the implementation of the Google Maps API

Additionally all of the members in the team has experience in SQL and one member has experience in PostgreSQL, this will ensure the best possible data storage solution for the application which is an integral part of the implementation.

Two of the members have experience in logical and efficient back end coding, which will be a good fit for a well designed interface and will improve the overall consistency and efficiency of the system.

All of the members in the team are good web developers and therefore the application will have an easy to use interface designed for the user. Three of the members also has experience in user experience design and user interface design, this will prove useful in the usability as well as accessibility of the application.