Agriculture App

Project Management Plan

Version 2.0.0

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TEAM 179
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Contents

Introduction and Purpose

An agriculture app is designed to help farmers to decide at which season can the user grow a sustainable crops based on their location and weather information while utilising existing location mapping provided by the app. At the same time, this app will also predicts the effects of weather on a particular crop. This project management plan will be use as a guide for our project progress and later on discuss the details for each process of development of this app.

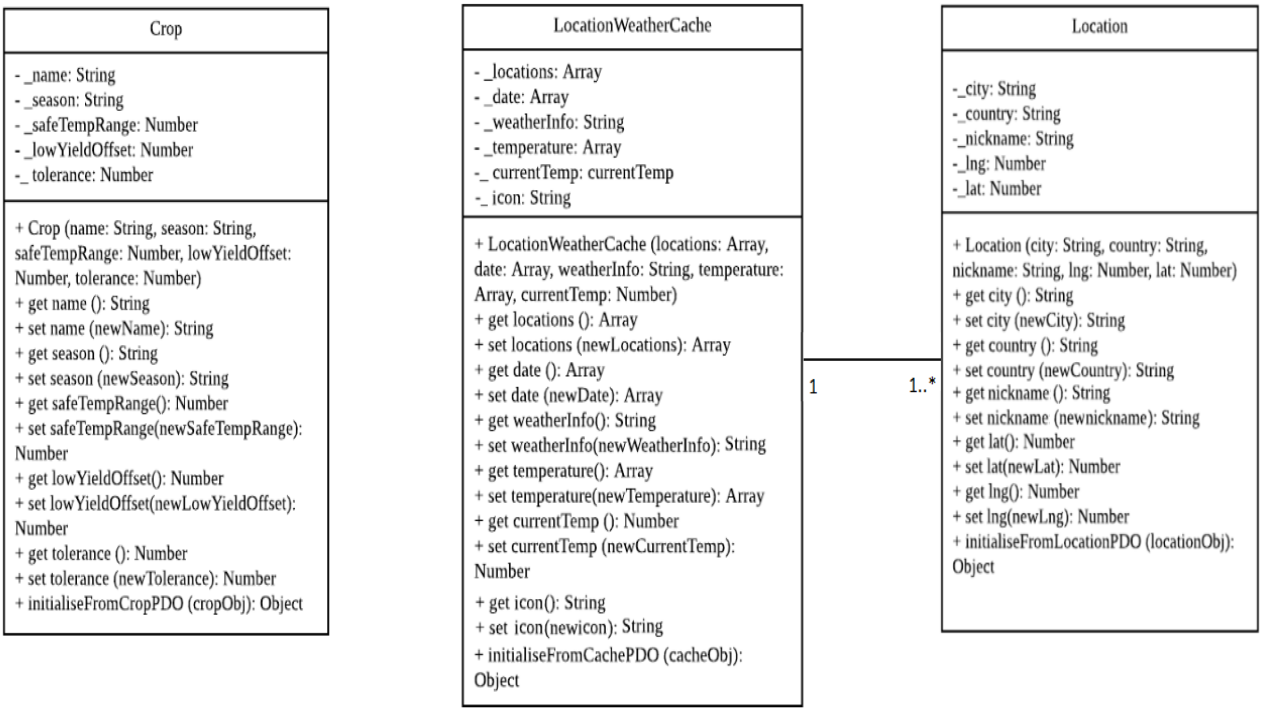
The purpose of this document is to allow the user to help farmers to choose the suitable location to grow crops for getting highest productivity. This app will be able to forecast the weather and provide historical data from the past such as temperature. Overall, this is an app to assist farmers to make decisions on growing crops by providing useful data.

Project Information

Background and intended use

This project is developed to help farmers to provide them information so they can make decisions on choosing a particular crop to plant based on weather and temperature readings. This help farmers to save time researching for their future planning and also prepares farmer for disaster such as water shortage, extreme weather and other factors that will affect the quality of the crops. Hence, farmers are able to choose some suitable crops to plant during the season. Besides, the farmer are also able to maximize their crop yield as the app shows prediction of the crop's yield. Nevertheless, this app will show the upcoming season for the location, so that farmers are able to make better decisions on planting crops while helping them to achieve maximum income in the future.

Class diagram



Scope

Project requirement :

- To develop an application that shows historical temperature data and assist farmers to decide which crop to grow for maximum yield.

Process requirement:

- Adding of desired crop name with safe temperature range, seasons and tolerance
- Adding of desired location with or without a nickname
- Able to retrieve data from Dark Sky
- Shows current temperature for current date, along with minimum and maximum temperature and crop available during the season.
- Able to enter desired date from chosen location
- Shows crops available for the season along with predictions based on the date input
- Able to store information for location or crop
- Able to delete selected location or crop

Limitation:

- The app only provides information up to a year before the input date
- The crop's data like safe temperature range, tolerance, and low yield data can be altered or randomly written, reduce the accuracy of the predictions

Assumption:

- The location's season assumption is based on Australia's season, other country might be experiencing other seasons at that given time.

Deliverables/due dates

Task	Due date	Dependence
Initial app skeleton created	Tuesday, 30 April 2019	The skeleton file is released
Workload distribution among members	Friday, 3 May 2019	All members joined into gitKraken project group
Feature 2	Wednesday, 8 May 2019	Once the members is assigned workload
Feature 1	Saturday, 11 May 2019	Once the data class is setup (feature 2)
Feature 3.1 - 3.5	Saturday, 18 May 2019	Once feature 2 is done
Feature 3.6 - 3.8	Tuesday, 21 May 2019	Once feature 3.5 is done
Feature 4	Thursday, 23 May 2019	Once the previous features (feature 1, 2 and 3) is done
Assignment 2	Friday, 24 May 2019, 6:00 PM	All the documentation and coding task are done

Personnel/HR Management

Team Member	Contact Details	Responsibility
Tan Zi Ling	ztan0027@student.monash.edu	Take part in coding the app layout and main features. Project's progress checker. Prepare individual presentation slides. Fixed bugs when occured.
Ho Min Hui	mhoo0013@student.monash.edu	Take part in coding implement and fixed bugs while occured. Stand-up meeting minutes taker. Help to complete user guide and project management plan. Prepare presentation slides.
Song Yiheng	yson0019@student.monash.edu	Take part in coding implement and certain features. Help to complete user guide and project management plan. Prepare individual presentation slides.
Lau Yi Meng	ylau0009@student.monash.edu	Upload the initial skeleton and link the members by using Whatsapp group. Take part in coding the app layout and main features. Prepare individual presentation slides. Fixed bugs when occured.

Decision on Processes

Communication and tools used completion :

- Official code is stored using the GitKraken
- Pseudocode or rough code is put on Google Docs as reference
- Asana is used as task management
- Atom and Brackets are used as code editor
- Mapbox
- Google drive
- Mapquest
- DarkSky API

Reason:

In this project, we followed waterfall model which was started with a group discussion about the requirements for this project and the distribute the tasks to each members, then followed by designs and implementation of codes. While we are coding, we used Gitkraken to update our team members about the latest version of the code. All members are able to review the codes after the latest version of the codes are pushed. To communicate with each other, we used asana for distribute works among the team members. There was weekly meeting scheduled for all team members, to update each other about the progress of the tasks that were assigned to them by asana. Plus, google drive and google doc were used to complete the project management plan and user guide. The benefit to use google doc is that all members can edit the file at the same time. Edited history can be reviewed by all members. Team leader reviewed the progress of the team regularly, to ensure everyone was on track. Gitkraken was mainly used as the storage of the code. Gitkraken was used to allow all members working simultaneously through “push” and “pull” feature.

Communications Management

Type of communication used upon completion :

- WhatsApp and Asana is mainly used
- Convenient and everyone uses it
- Everyone replies within a day.

Reason :

WhatsApp is the main platform used in our group, a WhatsApp group has been set up and all members are in the group, the group is for members to discuss with each other relate to the project. when the project was at the starting stage, members just have to reply within a day. however, as the project progress to the final stage, members are expected to reply within an hour.

Asana is the secondary platform used in our group; Asana will send daily emails to help members about the timeline. By sending email, members are aware about the progress of the project, so that every member are on track.

There will be a meeting every week on Thursday, every member should attend and report about the progress of the assignment. Team leader are requested to ensure all members are doing their job and on track.

Risk Management

Risk factors	Likeliness	How to prevent
Bugs that are in the skeleton code that require updates	Moderately likely	check email regularly so that all messages from lecturer are received
Conflicts when codes are pushed onto GitKraken	Moderately likely	- pull the most recent version before coding new features - reach teammates to discuss how to resolve conflicts
Members did not reply on time	Very likely	check WhatsApp regularly
Bugs that are in the code	Very likely	- use black box testing and white box testing regularly - reach team members so that members can help each other out
Fail to finish the assigned task on time	Moderately likely	members can help each other out if one of the members is stuck on the particular task

Overview of Application Layout

Main page :

This page is known as index page. This page display the overview default crops and location added the added locations and crop by user. On the header, there's 2 button for user to select, the "Add crop" button and the "Add location" button. User is allow to click into location and redirect to view location page or to delete crop.

Add Crop Page:

This page allows user to add and input data for desired crops. Layouts of text field input that allow user to input data is shown. Text field consist of crop name, minimum and maximum temperature within safe temperature range, low yield offset, season and tolerance. A button "STORE IN MAIN PAGE" is shown and user will be redirect back to main page if clicked.

Add Location Page:

This page allows user to add desired location. Layouts of text field input that allow user to input data is shown. Text field consist of nickname, which is optional, city and country. A map is shown. A button "SEARCH FOR LOCATION!" is shown and clicking the button will add a marker and the name of the location to the map. A button "ADD LOCATION" is shown, after clicking "SEARCH FOR LOCATION!". This will store the location and bring user back to the main page.

View Location Page:

This page shows all data of locations and crops selected based on a date. The name of the location is shown on the header. A delete button is also shown to delete the location. The body contain its nickname if available and a map of the location with a marker. User is allowed to key in their desired date and search for its data. The information is then shown along with predictions for the crop based on the weather. Information includes, current temperature, maximum and minimum temperature, maximum and minimum safe range temperature, crop name, the season.