CROPBOOK

USER GUIDE

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TEAM 152

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Contents

Introduction and Purpose

The CropBook App is an App that can utilise existing location mapping and weather forecasting services, to assist with their decisions in growing sustainable crops. It contains few different pages for different functionality that might be hard to understand by new users.

This document exist is to guide the user on how to use the CropBook App by showing the screenshots of the application to user and explain to them what each page does and how they interact.

App Features

Feature 1: Adding Crop Page

The application contains an Add Crop page which allows the user to enter their desired crop data like the name of the crop, its' tolerance value, etc.

Feature 2: Adding Location Page

The application contains an Add Location page which allows user to enter the country and city of their desired location. There is a search option which displays the location of the address the user has entered to allow user to check and recognised it as the desired location. The user is also able to add a nickname to the location.

Feature 3: Saving Location or Crop

The user can save a location or crop by tapping on the save button.

Feature 4: Delete Location or Crop

The user can delete a location or crop by tapping on it.

Feature 5: Location and Crop List display

The application displays the previously saved locations and crops into a list for the user to view.

Feature 6: Forecast information

The user can select a date from today to the last 12 months and view its' forecast information. This includes minimum, maximum temperature, and the weather for that day.

Feature 7: Determine if crop is in season

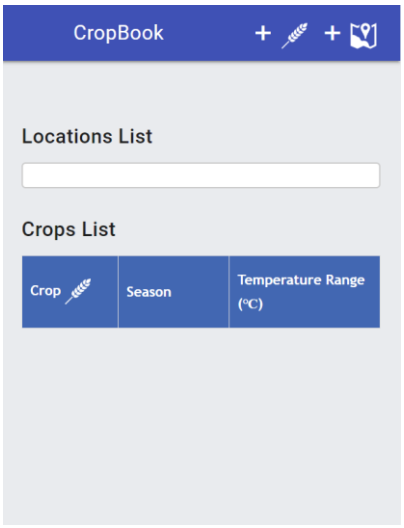
The application can determine if a crop is in season and calculate its' yield or survivability.

Feature 8: Crop yield and survival

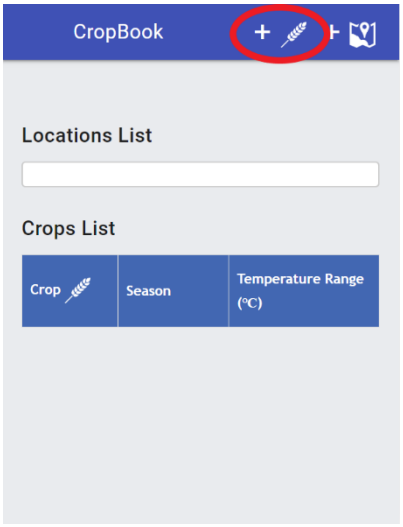
The application can calculate the survival of the crop which have 3 different outcomes, "High Yield", "Low Yield but will Survive" and "The crop will perish in XX days".

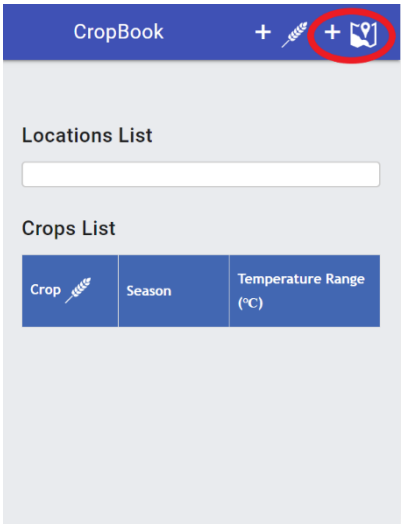
Instructions for Use

Initial state of the application



The figure above shows what the application looks like when the user first opens it. This is the main page of the CropBook application prior to entering any data.

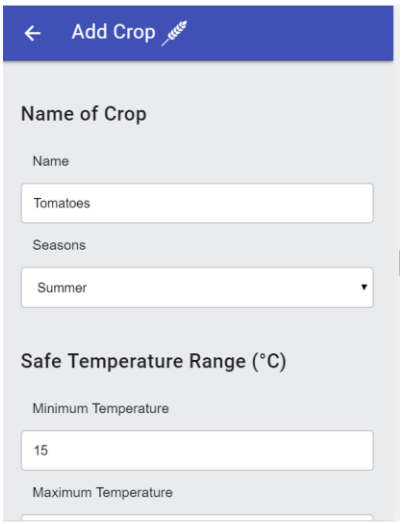


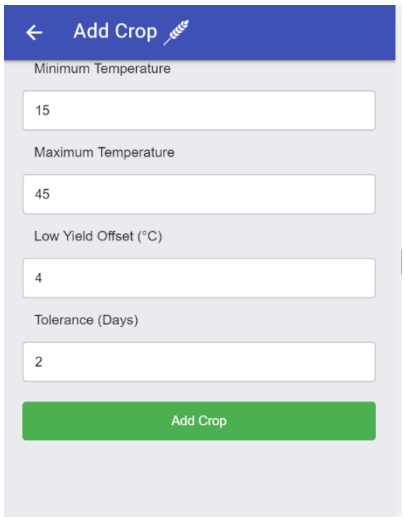


The two figures above show an add crop and add location button (highlighted in red) that redirects user to the add crop page and add location page respectively when clicked.

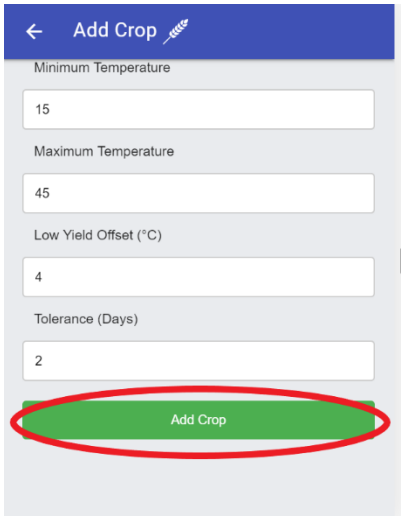
This is where the user may perform actions of adding their desired crops/ locations.

Add Crop Page

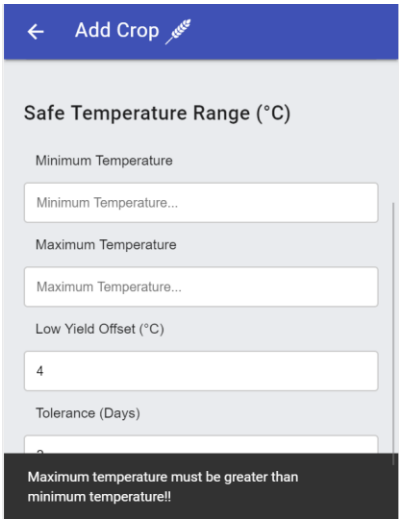




In the add crop page, the user can key in the desired data of their crop into the application, like the name of the crop, its' tolerance value, etc. (Please note that Seasons is set to Spring by default).



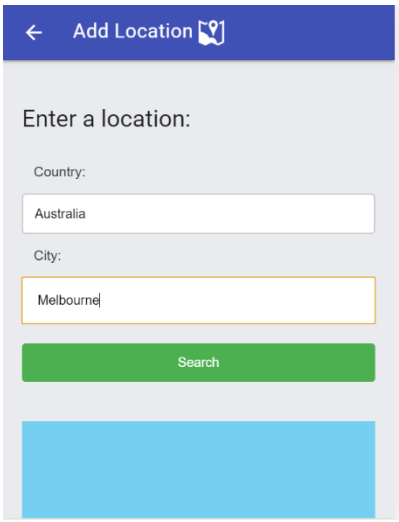
Once the user has finished keying in the values for their crop, they may click the "Add Crop" button highlighted in red to save the crop. This also returns the user back to the main page if successful.

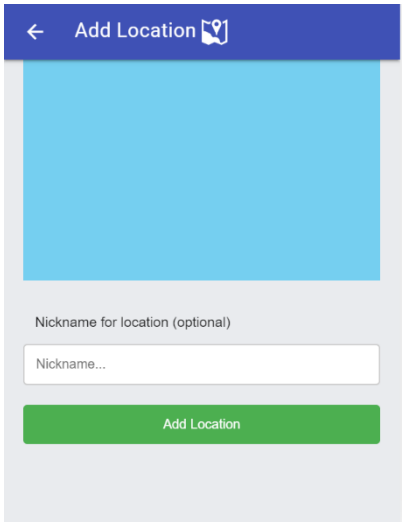


An error showing up when trying to press the Add Crop button? Do no worry. This is because the user has keyed in the wrong info. An example would include having a higher Minimum Temperature than Maximum Temperature (This doesn't make sense).

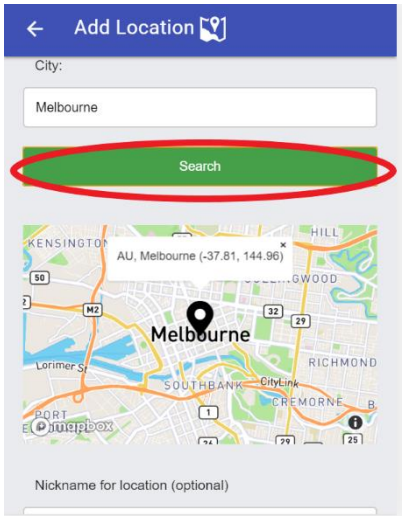
Just follow the instructions displayed on the screen and re-enter the corrected information.

Add Location Page

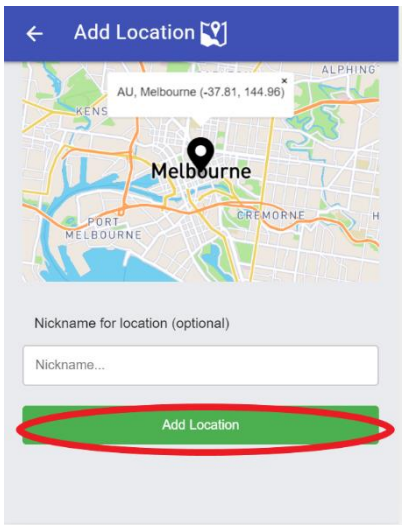




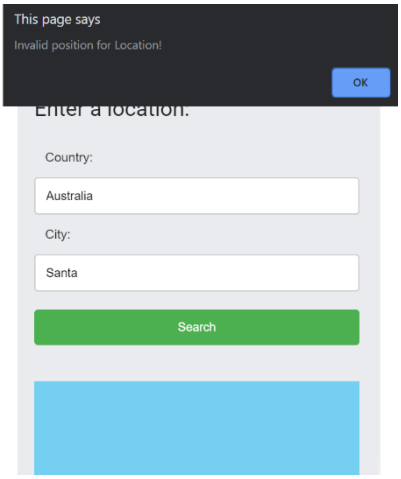
In the add location page, the user can key in their desired location into the application by giving the country and city. A nickname is also optional to give to the location.



The search button displays the location of the information the user has entered. This is to allow the user to confirm the location before saving.

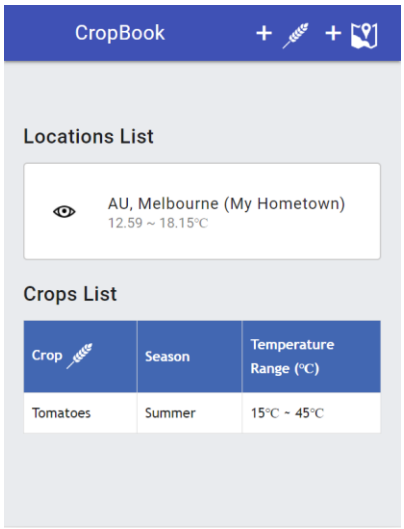


The “Add Location” button works similarly to the Add Crop button. It saves the user entered location and returns the user back to the main page.

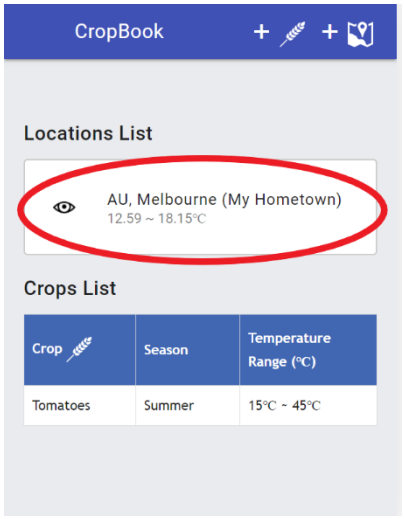


If the user enters an incorrect location, an error will be shown. Any result returned by the Geocoding API that is less accurate than city level will result in an error.

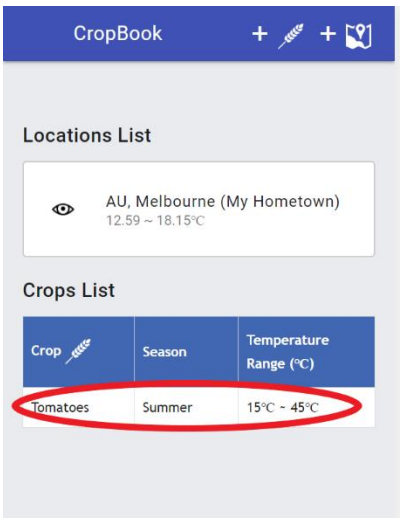
Main Page

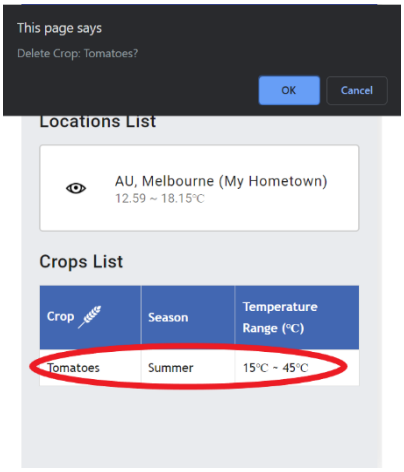


The crops and locations saved previously will be updated and displayed on the main page accordingly.



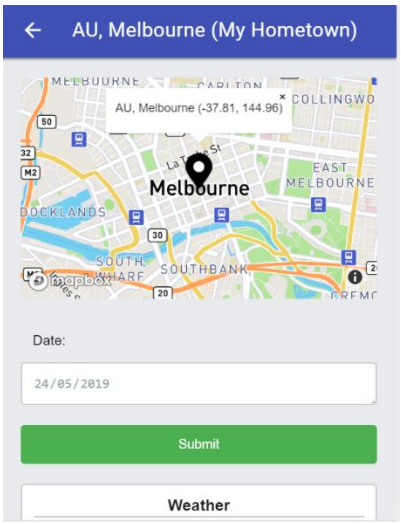
When clicking on the "AU, Melbourne" location in the location list, the user will be directed to the view location page of that location that was clicked.

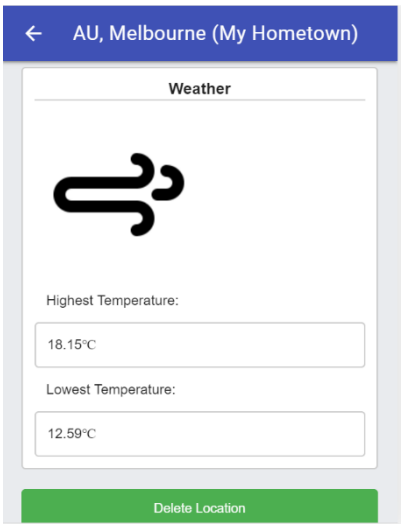




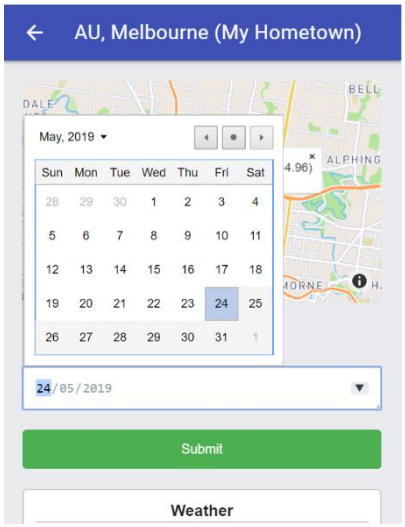
However, when clicking on the "Tomatoes" crop in the crops list, a delete option will be displayed, and the user is able to choose to whether to delete the crop that was clicked. This is to prevent user from accidentally tapping and deleting the crop.

View Location Page





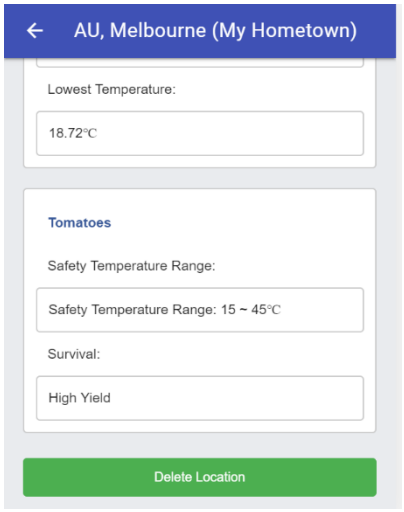
The view location page displays various information. This includes a map of the location, a calendar in which the user can select a date starting from today until the last 12 months, and weather information of the day selected from calendar.



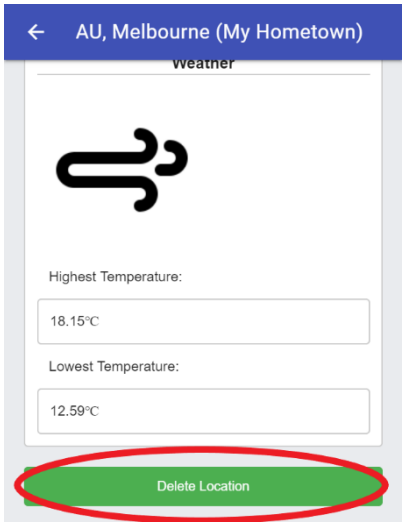
The user can select a date from the calendar. This page also displays the crops that are in season. Each selected date has a season associated with it as follows:

Months	Season
September, October, November	Spring
December, January, February	Summer
March, April, May	Autumn
June, July, August	Winter

Please note that the seasons used are the seasons of Australian and may not apply everywhere in the world.



Finally, the application will display the crops which are in season only. It also calculated the survival of the crop which have 3 different outcomes, “High Yield”, “Low Yield but will Survive” and “The crop will perish in XX days”.



There is also a delete location button which will delete the location selected, works similarly to deleting a crop. A delete option will be displayed, and the user is able to choose to whether to delete the location.

Known Bugs, Limitations and Common Questions

Known Bugs

Main page location illogical display

- This is due to the asynchronous request made from Dark Sky API taking too much time to return the relevant data before other codes have been executed asynchronously. This issue is most likely to occur during the start of a new day where multiple API requests are made simultaneously on the main page.

- One solution to this is to only use the application under good internet connections. Some users might have also tried to delete some data from local storage which may have also caused this issue.

Limitations

MapQuest Geolocation API accuracy

- The MapQuest geolocation API used to determine the coordinates of a location specified only by its' country and name may not contain enough information. As a result, some locations were unable to be found using this API.

- One solution to this limitation is to approximate the desired location to a nearby city that can be found using MapQuest Geolocation API.

Dark Sky API results

- Dark Sky API did not contain the forecast information of a few locations at some dates. For example, Dark Sky API did not contain any forecast information of "AU, Victoria Harbor" before May 2019.

- There is no suitable solution for this limitation as this issue is mainly due to Dark Sky API.

Common Questions

Will this CropBook application work for locations outside of Australia?

- In theory, it will work. MapQuest Geolocation and Dark Sky API usage is not limited to Australia. However, the logic within the code assumes the seasons are in accordance with the seasons of Australia and may not be the same worldwide.