



CS551 Advance Software Engineering

SECOND INCREMENT REPORT

Farmers Ville

Group#11

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Project Proposal

Project Title: Farmers Ville

Group number: 11

Group Members:

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2. Manoj Prabhakar Ejjirothu (10)
3. Sudheer Kumar Nagaruri (37)
4. Pratap Rao Kadari (20)

Project Goal: To develop an app which helps farmer in the entire cycle of cultivation and marketing the crop.

Significance: This project would be helpful to Farmer in cultivating a crop in most effective way. It helps the farmer in assessment of suitable conditions for harvesting a crop based on the weather forecast. It's a complaisant for the farmer to know the current prices of crops and trending technologies in the field of cultivation.

Objectives:

1. To aid the farmers in improving the cultivation of crops by suggesting weather conditions, fertilizers and agriculture related articles.
2. Create a unique platform where the farmer can market his crop without any mediator.
3. Notifying the farmer about the current market prices and trends.

System Features:

1. **Marketing:** This app helps the farmers to sell his crop directly to the consumer.
2. **Market Locations:** This app will provide nearest market locations where farmer can sell his products.
3. **Market prices:** This app provides market prices of all agricultural products.
4. **News:** This app provides current agricultural news.
5. **Notification:** Notification of Availability of the products and feedback on the products sold
6. **Ratings :** Ratings can be given to all the products available for sale and for the products sold as well.
7. **Latest Trends and Technologies:** This app has the access to USDAs latest journals on Agriculture which have latest cultivation methods being used around the world.
8. **Suggestions:** This app guides farmers in selecting the Fertilizers and pesticides for particular crop.
9. **Weather Reports:** This app provides latest weather forecast updates to farmer based on his location, which helps the farmer in planning harvesting.

Bibliography:

- Farming Assistant Web Service - <http://nevonprojects.com/farming-assistant-web-service/>
- “Market Locations” by Foursquare API
- “Market Prices” by Agricharts API
- “Weather” by Open Weather API
- “News” by Agricharts API
- “Latest Journals” by USDA PubAg API

Second Increment Report

As a part of the second increment we have implemented market places nearby farmer based on his location, which are used to sell his products and Buyer and Seller modules. Any data posted in seller module is stored in Mongo DB cloud. Later this data is retrieved in buyer module. Account specific module is not yet implemented.

Features:

1. **Marketing:** Marketing has two features – Selling and Buying. Selling helps the farmer to sell his products directly to the consumer without any mediator. Farmer can just post his product details like variety, quantity, images etc through his login. Buying helps the farmer/consumer to browse available list of products. If he is interested in any of the products, he can contact directly seller with the contact information provided.
2. **Market Locations:** This feature helps the farmer in showing nearby markets list based on his current location to sell his products. This feature is implemented using Four Square API which shows the nearby farmer market locations available.
3. **Weather Forecast:** Weather forecast gives the weather forecast details of farmer's current location for coming 5 days with data every 3 hrs. Icons and description of weather is shown. This information helps farmer in planning his crop activities like harvesting, seeding etc., efficiently.
4. **Latest trends and technologies:** USDA has the latest journals on agriculture cultivation and also provides methods to increase the productivity. This app has access to USDA journals and thereby provides information to the farmers. With the information gained farmers could adopt new methods. . It also informs farmers about the fertilizer's that has to be used for a specific crop. It provides information about the upcoming technologies in the field of agriculture.
5. **Suggestions:** This application also provides suggestions to farmers regarding which crop has to be cultivated for certain climatic conditions which would increase the productivity and also informs them about the fertilizers and pesticides for specific crop. It also suggests about the pesticides that have to be avoided that could harm the crop.
6. **Market price:** In this feature we are using "Agricharts API" and we will show the current market prices of crops. Market prices of a crop will change every day based on various factors and it's difficult for a farmer to search/enquire about market prices daily. So with a single click, farmer can fix the affordable price for his crop and sell it in the market. He can also decide to sell or not on that day based on his total expenditure at the time of cultivation and gain the profit.

7. **News:** We are taking “Agricharts API” for this features’ implementation. We will populate the all agricultural related news. Farmer can get the information about business, technology and latest trends etc. Using this information farmer can predict the availability and price of a particular crop in the near future.

Service Description:

1. **Weather:** Weather forecast information is displayed using API provided by <http://openweathermap.org/>. API gives information of weather for coming 5 days with data for every 3 hours.
2. **Market Places:** Market locations are displayed using Four Square API. This API has option to search places based on category. We are using farmer markets category to get market places.
3. **Market Prices:** Current Agricultural products market prices are displayed using Agri Charts API.
4. **Agriculture News:** Daily trending agriculture news is displayed using Agri Chart API. New specific to agricultural products like corn or wheat can be retrieved.
5. **Latest Journals:** USDA PubAg API supports the integration of apps for accessing and searching a database of agricultural publications. The database contains over 41,000 full-text journal articles by USDA staff and includes over a million citations

GitHub URL

<https://github.com/nagakrishna/ASE-Project.git>

Challenges Faced during 2nd Increment:

- How to store image to Mongo DB cloud and retrieve it.
- API provided Agricharts (News & Market Prices) are not for free. Found an alternative for news API. (Alchemy News API)
- We are still researching on alternative to get market prices. Also researched on Walmart product API, but fresh products like vegetables prices are not provided
- How to implement suggestions based on products cultivated by farmer –whether to hardcode or use API source.

Total Feature Implemented so far:

- Weather Forecast
- Market Places Location Details
- Login and Register Pages
- Buyer and Seller Module

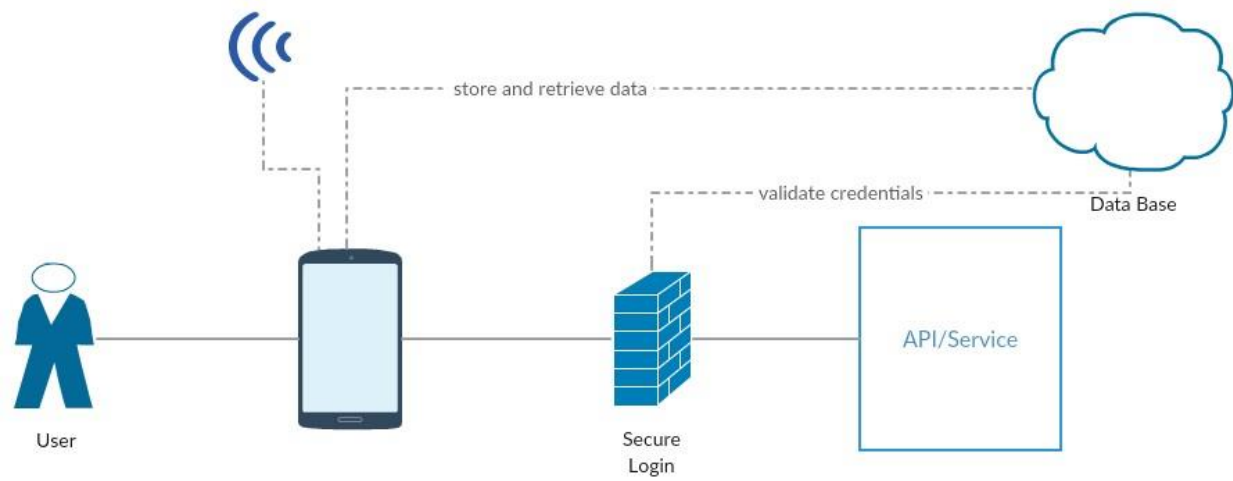
Features to be implemented:

- Suggestions
- News
- Market Prices
- Account Module
- Setting Module

Improvements:

- UI improvements on all modules

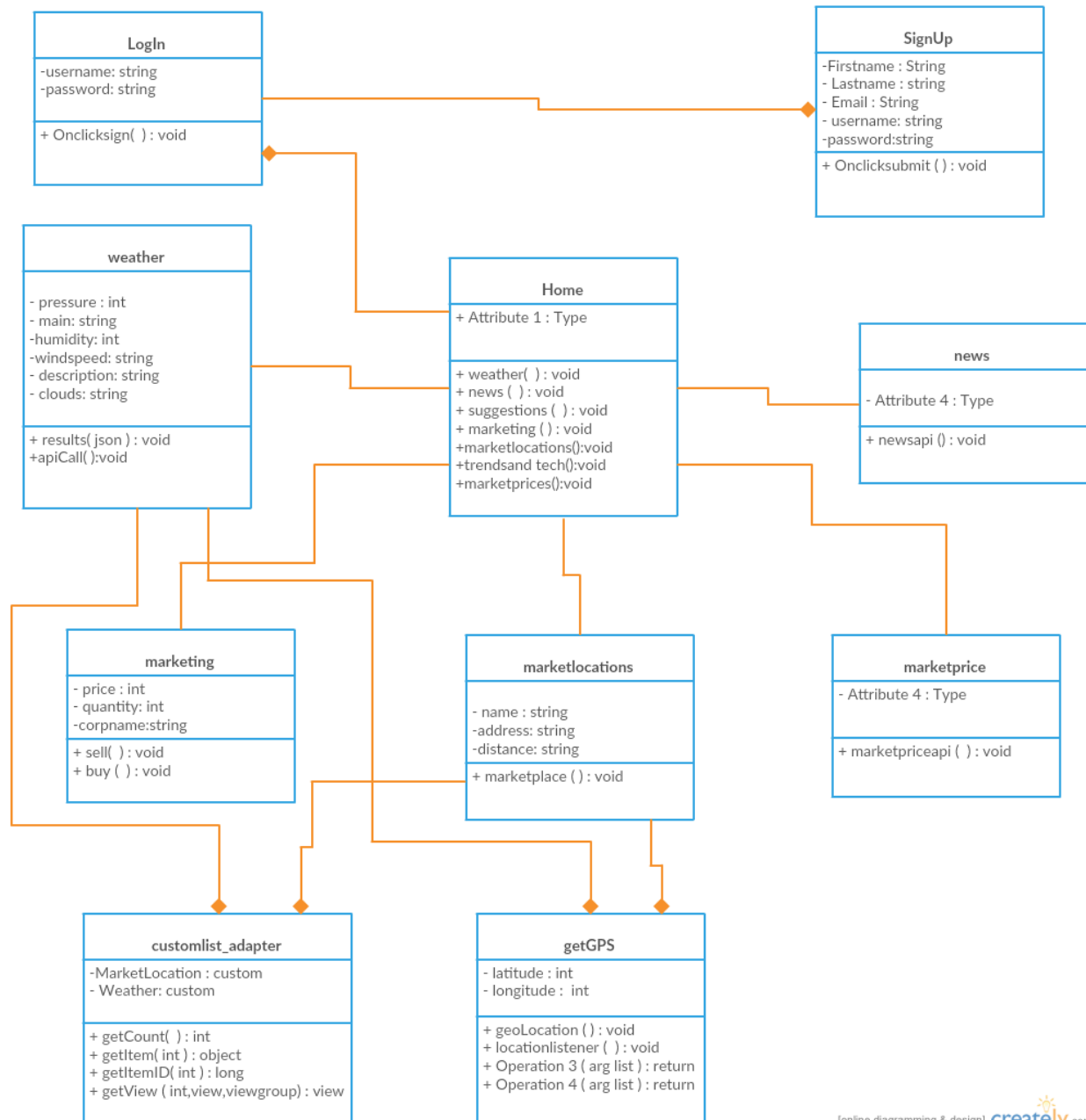
Architecture Diagram



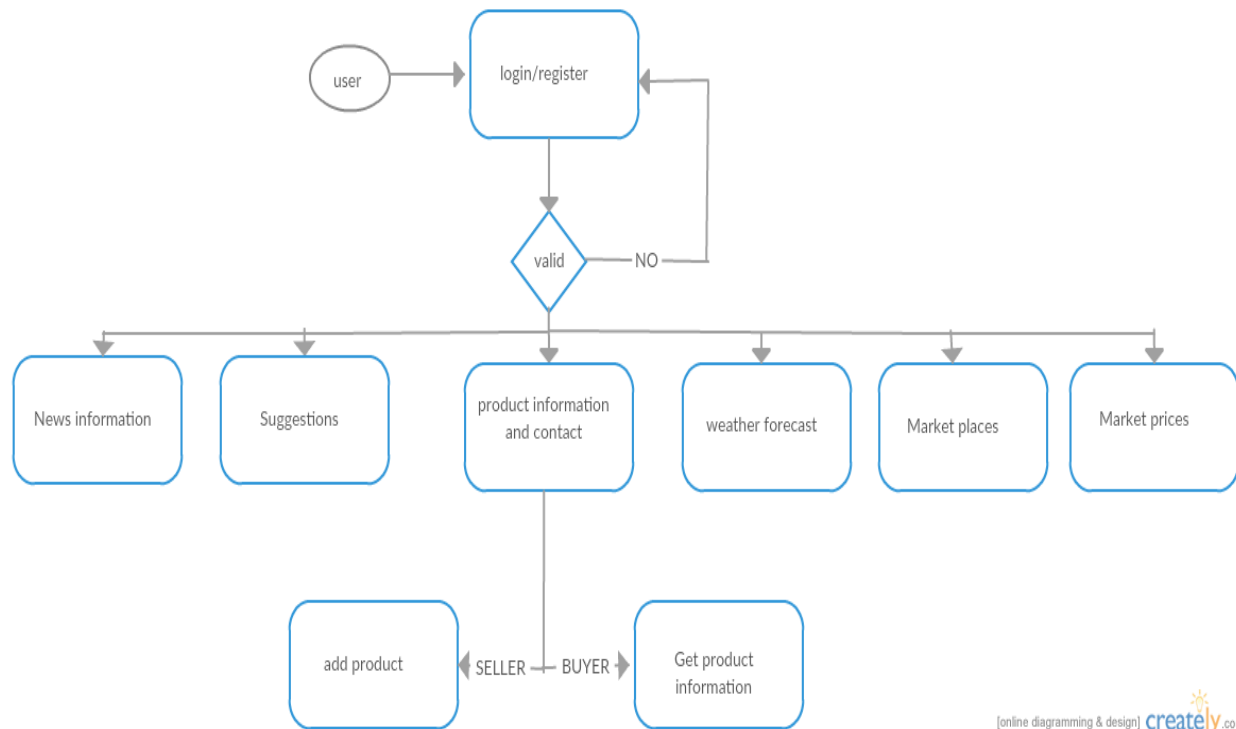
Use Case Diagram



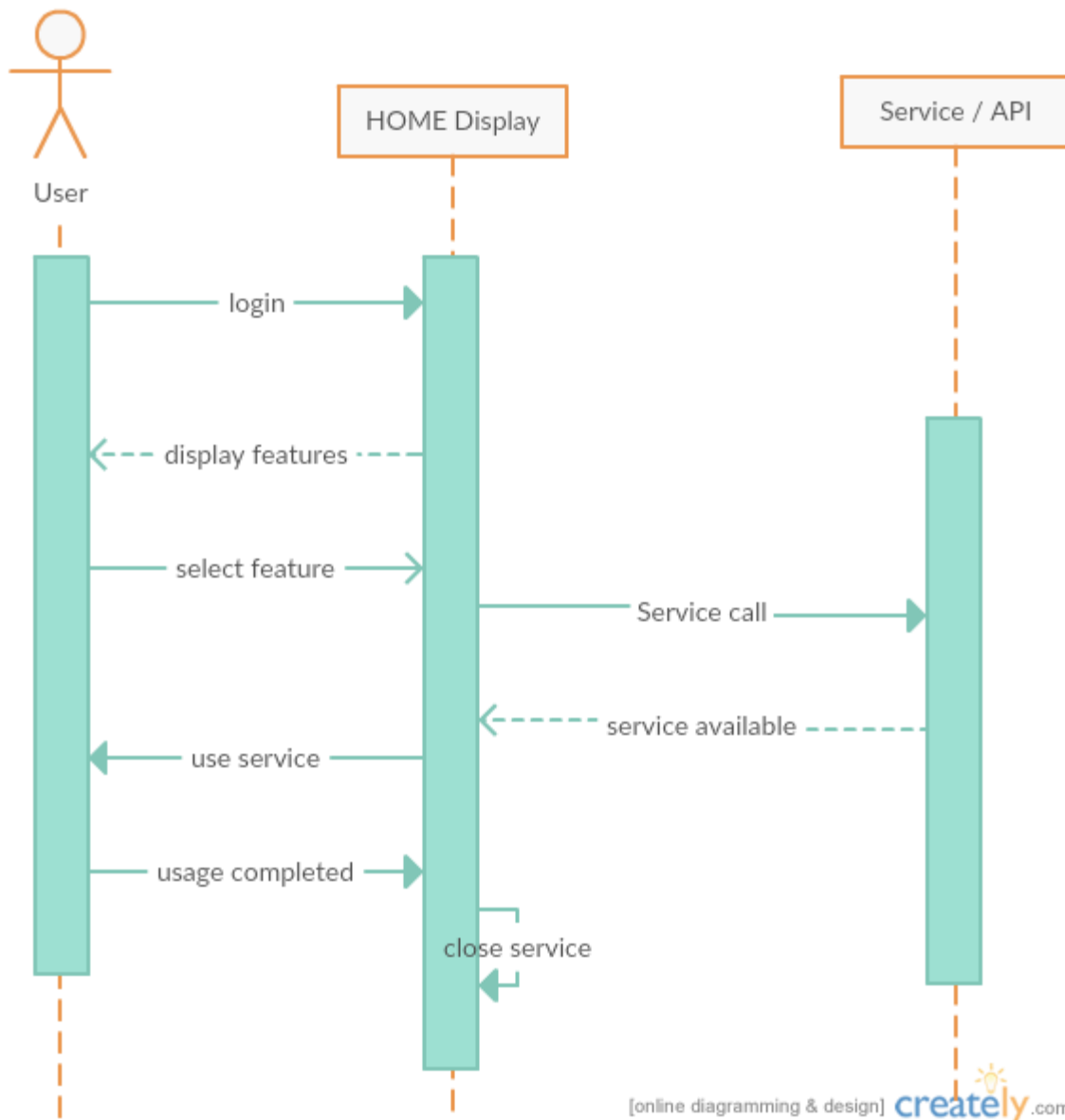
Class Diagram:



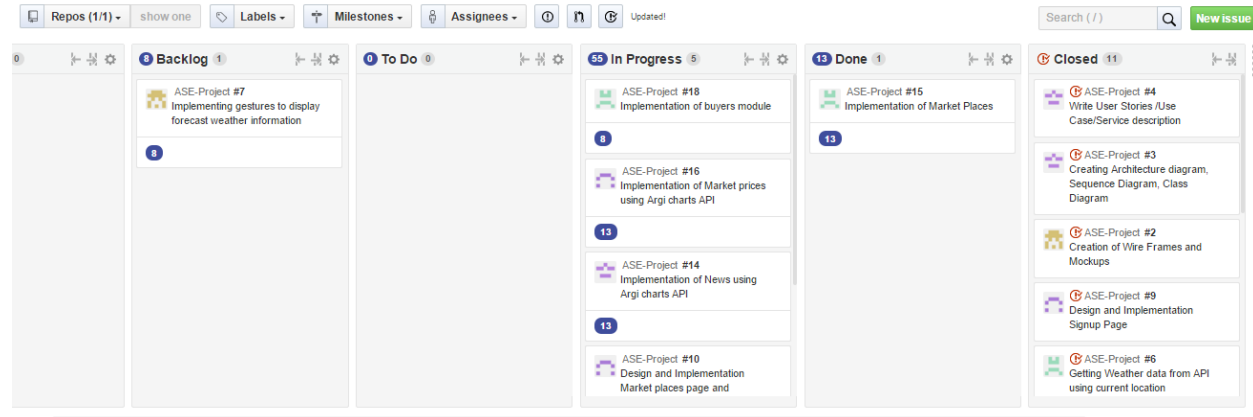
Activity Diagram



Sequence Diagram



Issues Tool Bar

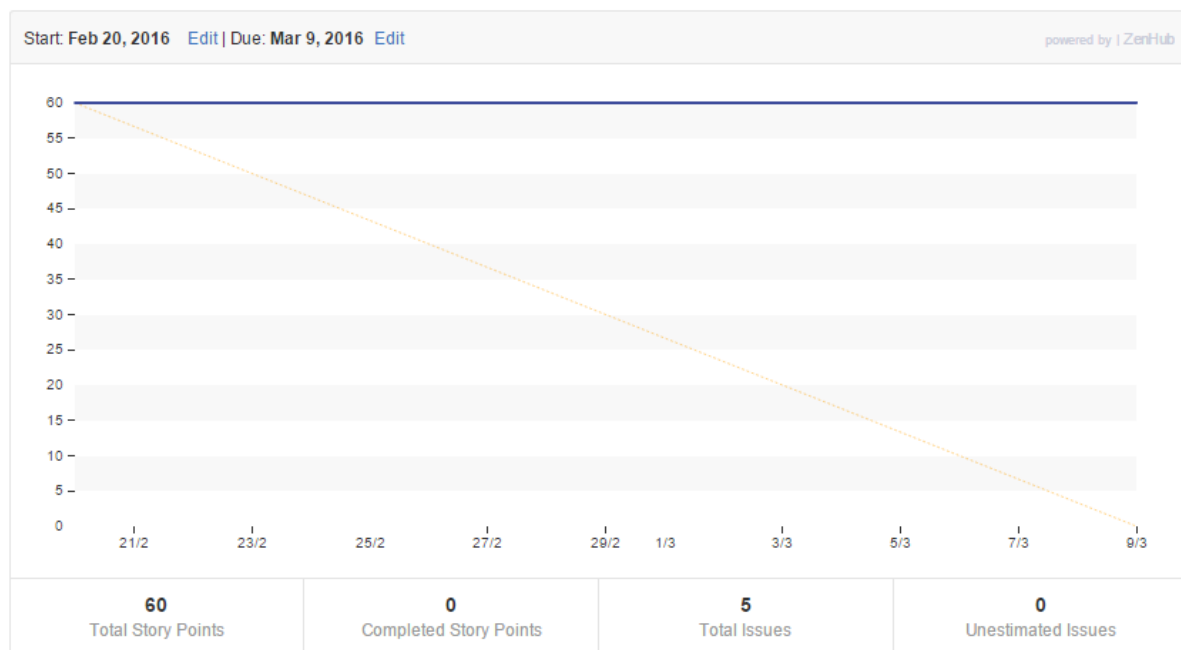


Tasks have been assigned to each of us and we had regularly updated the status of each task assigned to us. We have completed most of the tasks assigned to us for the second increment. Milestone is created for second increment.

Burn Down Graph

Second Increment

Implementation of Market Prices, News, Suggestions, Market Places, Buyer modules



The burn down chart for the tasks assigned and the completed tasks. The first increment has to be completed by 02/19 . By the end of the task completion we got the above burn down chart

Wire Frames

Login Page



The wireframe depicts a mobile application login screen. At the top, a dark grey status bar contains icons for signal strength, battery level, and the time '4.00'. Below this is a white header bar with the text 'FarmersVille' on the left and a pencil icon and a three-dot menu icon on the right. The main content area is white and contains two text input fields. The first field is labeled 'Username' and the second is labeled 'Password'. Both labels are positioned to the left of their respective textfields. Below the password field are two rectangular buttons. The top button is labeled 'SignIn' and the bottom button is labeled 'SignUp'. The entire wireframe is enclosed in a thin grey border.

4.00

FarmersVille

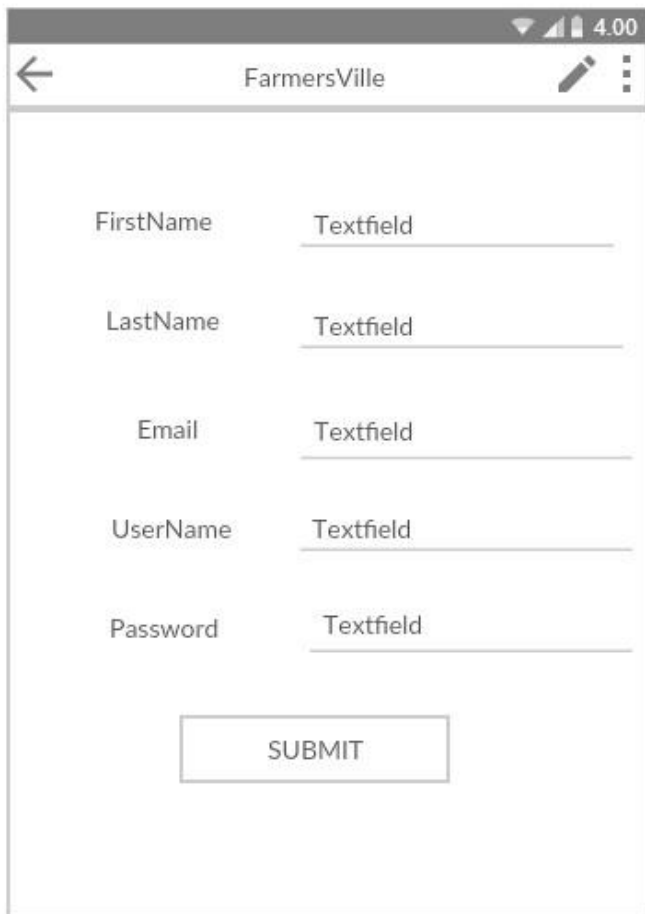
Username Textfield

Password Textfield

SignIn

SignUp

Sign Up Page



A mobile application interface for a sign-up page. The top status bar shows a Wi-Fi icon, signal strength bars, and the time 4:00. Below this is a header bar with a back arrow on the left, the text "FarmersVille" in the center, and a pencil icon and a three-dot menu icon on the right. The main content area contains five rows of labels and text fields: "FirstName" with a "Textfield" label, "LastName" with a "Textfield" label, "Email" with a "Textfield" label, "UserName" with a "Textfield" label, and "Password" with a "Textfield" label. At the bottom of the form is a rectangular button labeled "SUBMIT".

4.00

← FarmersVille

FirstName Textfield

LastName Textfield

Email Textfield

UserName Textfield

Password Textfield

SUBMIT

Market Trade Page

4.00

← MarketTrade

SELLER	BUYER
<div>Product</div> <div>Quantity</div> <div>Description</div> <div>Crop Image</div> <div>POST</div>	

Application Home Page



Weather Page

Weather

Date

Temp

Humidity

Date

Temp

Humidity

Date

Temp

Humidity

Market Locations Page

Marketlocations

Name

Address

Distance

Name

Address

Distance

Buyer Page

← MarketTrade

SELLER	BUYER
Product	
Quantity	
Description	

Mock Ups

Login Page



Sign Up Page

My Application

First Name Last Name

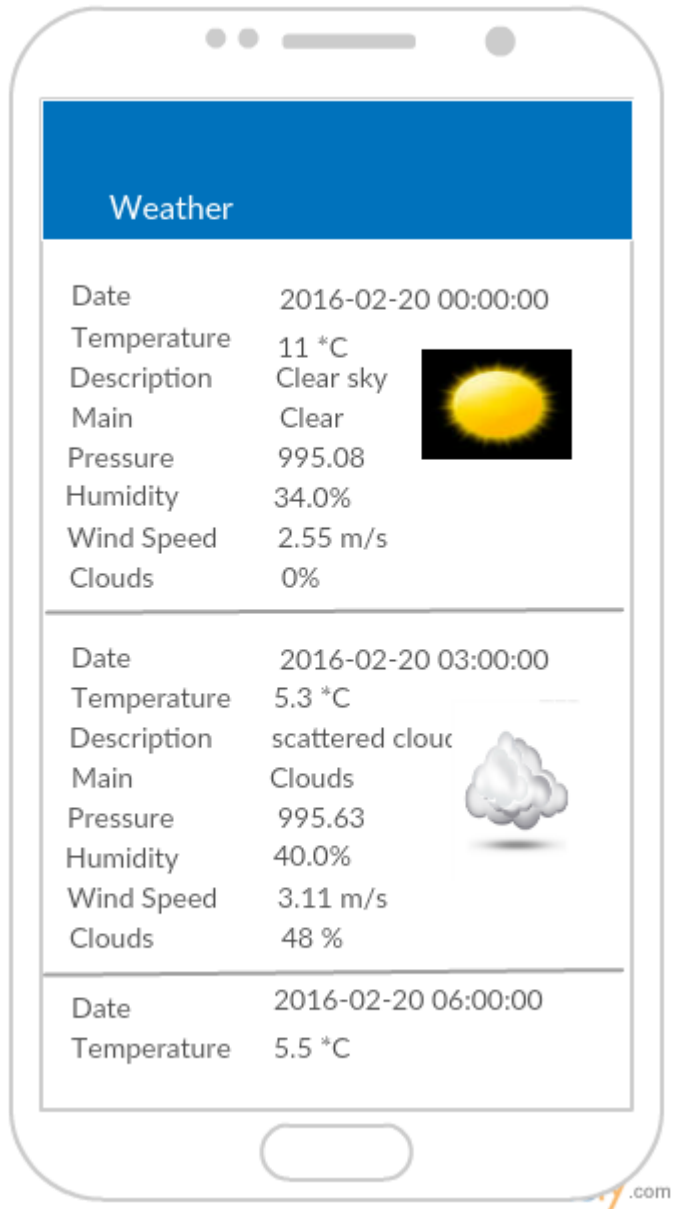
Address

Email

Login SIGN UP

.com

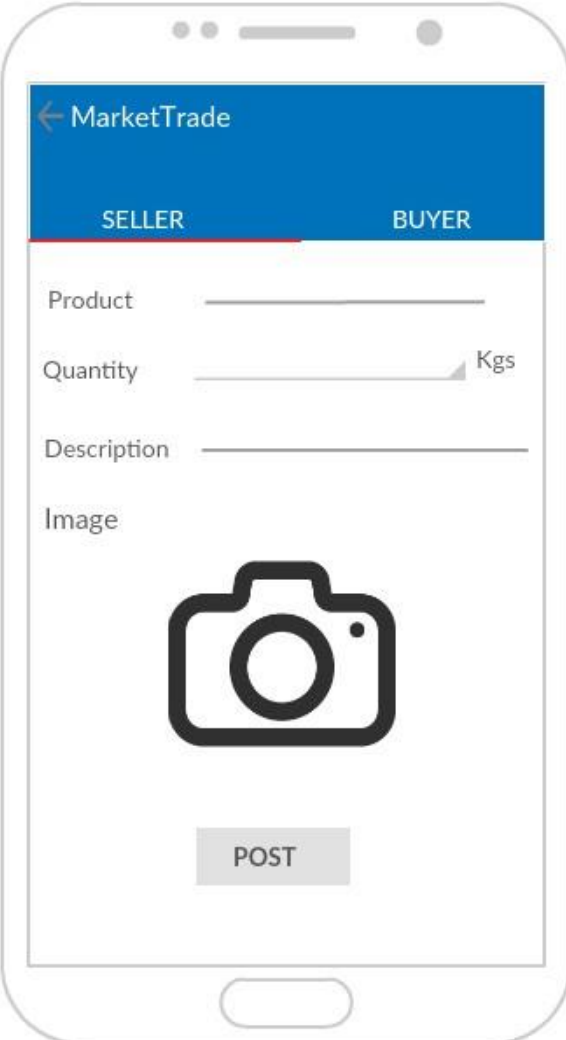
Weather Page



Home Screen Page



Market Trade Page



A mobile application interface for a market trade page. The screen is framed by a light gray border representing a smartphone. At the top, a blue header bar contains a white back arrow and the text "MarketTrade". Below the header, a white bar with a blue underline contains two tabs: "SELLER" and "BUYER". The main content area is white and contains the following elements from top to bottom: a "Product" label followed by a text input field; a "Quantity" label followed by a text input field and a "Kgs" unit label; a "Description" label followed by a text input field; an "Image" label followed by a large black camera icon; and a gray rectangular button with the text "POST".

← MarketTrade


SELLER BUYER

Product

Quantity Kgs

Description

Image



POST

Market Locations

MarketLocations	
Name:	Independence Farmers Market
Address	Independence,MO,64050, United states
Distance	9.56 miles
Name:	Liberty Farmers Market
Address	Liberty,MO 64068, United States
Distance	16.96 miles
Name:	Olathe Farmer's Market
Address	200 W Santa Fe St Poplar, Olathe, KS 66061,United State
Distance	16.71 miles
Name:	black bob farmer's Market
Address	14570 W 151st Ter,Olathe, 66062, United States
Distance	15.39 miles

Buyer Page

SELLER BUYER

Product: _____

Quantity: _____

Description: _____

User Stories

As a	I want to	So that
User	sell and buy crop	I can do marketing without any mediator and gain more profit
	check near market locations	I can directly go and sell the product
	check current market prices	I can set the crop price at affordable levels
	read the present agricultural news	I can get awareness of market trends and predict the particular crop business
	latest trends and technologies	I can implement the latest methods and increase the productivity
	get the suggestions	I can apply those techniques to my cultivation and reduce the loss
	weather forecast	I will plan the harvestation effectively

Test Cases

Testcase Name	Test Description	Expected Result	Pass/Fail
Login	Enter invalid userid and valid password	invalid login error message should be displayed	Pass
	Enter valid userid and invalid password	invalid login error message should be displayed	Pass
	Enter valid userid and valid password	Application should be redirected to home page	Pass
Sign Up	Enter emailid with * symbol	invalid emaid should be displayed	Pass
	Enter password with only numbers	please check password instructions should be displayed	Pass
	Enter firstname with numbers	invalid first name should be displayed	Pass
Weather feature	click on the "weather button"	the weather forecast page should be populated	Pass
Marketing Feature	click on the "BUY & SELL" button	the market trade page should be populated	Pass
MarketLocations	click on the locations button	near by market locations should be populated	Pass

Final Screen Shots

Login page



Signup Page



The image shows a mobile application interface for a signup page. At the top, there is a blue header bar with the text "Farmers Ville" on the left and a three-dot menu icon on the right. Below the header, the background is a photograph of a farmer in a white shirt and blue shorts, guiding two white oxen in a field. The oxen are harnessed together and are pulling a plow. The farmer is standing to the right of the oxen, holding the reins. The field is brown and appears to be recently plowed. In the background, there are green trees and a clear sky. Overlaid on the image are four text input fields: "First Name" (with a red underline), "Last Name", "Address", "Email", and "Password". A white "SIGN UP" button is positioned in the center of the image, overlapping the oxen. At the bottom of the screen, there is a black navigation bar with three white icons: a back arrow, a circle, and a square.

8:01

Farmers Ville

First Name Last Name

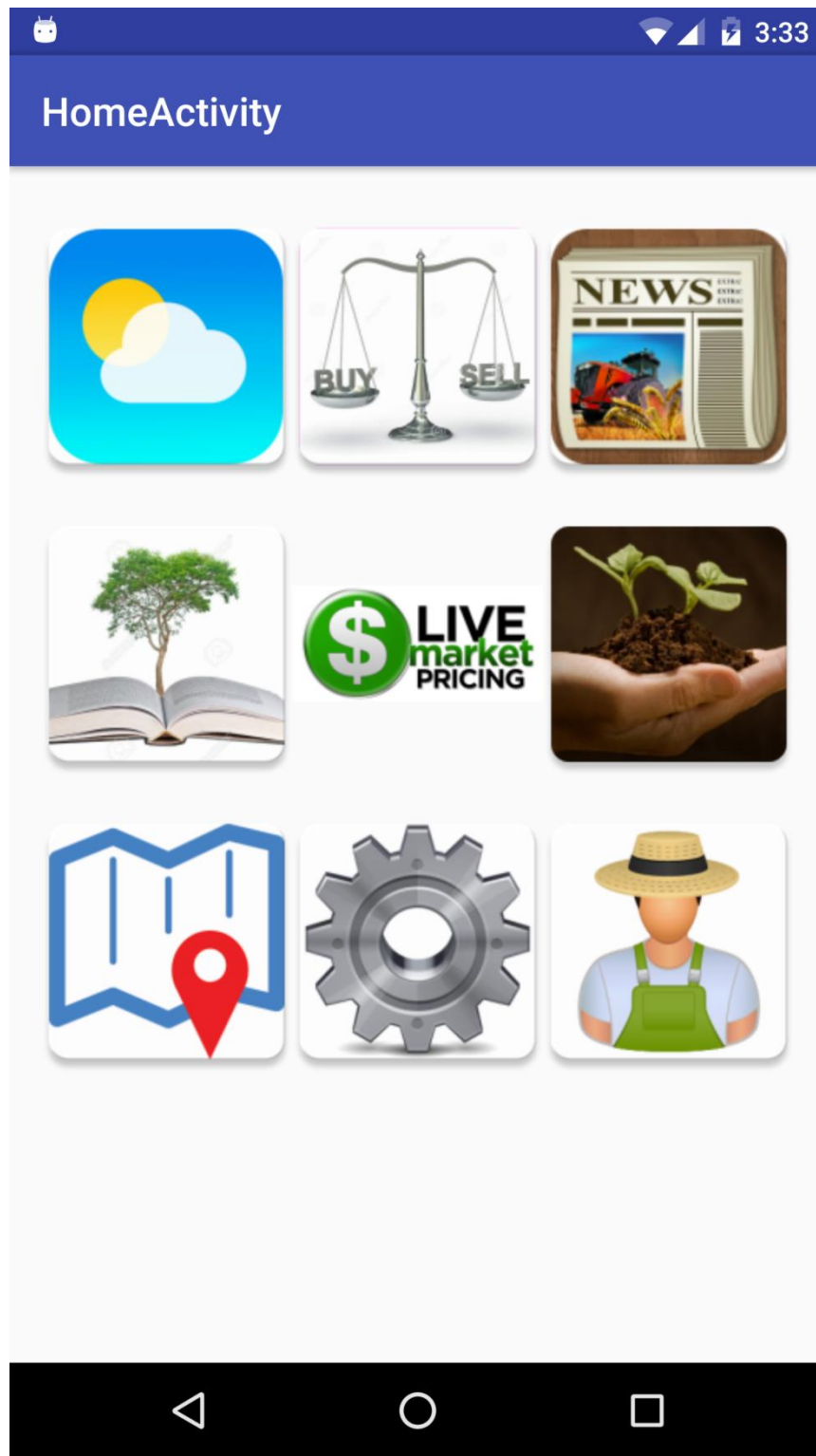
Address

Email



Password

SIGN UP

Home Screen




Weather Page

 6:00

 **Weather**




Date	2016-02-20 00:00:00
Temperature	11 °C
Description	clear sky
Main	Clear
Pressure	995.08
Humidity	34.0 %
Wind Speed	2.55 m/s
Clouds	0 %






Date	2016-02-20 03:00:00
Temperature	5.3 °C
Description	scattered clouds
Main	Clouds
Pressure	995.63
Humidity	40.0 %
Wind Speed	3.11 m/s
Clouds	48 %



Date	2016-02-20 06:00:00
Temperature	5.5 °C
Description	broken clouds
Main	Clouds



Market Page

 3:33

← MarketTrade

SELLER

BUYER

Product


Quantity

Kgs

▼

Description

Image




POST

Market Places Page







MarketLocations	
Name:	Independence Farmers Market
Address	Independence, MO 64050,United States
Distance	9.56 miles
Name:	Liberty Farmers Market
Address	Liberty, MO 64068,United States
Distance	16.96 miles
Name:	Olathe Farmer's Market
Address	200 W Santa Fe St Poplar,Olathe, KS 66061,United States
Distance	16.71 miles
Name:	black bob farmer's market
Address	14570 W 151st Ter,Olathe, KS 66062,United States
Distance	15.39 miles
Name:	Spring hill farmers market
Address	Johnson County, KS,United States
Distance	24.35 miles

Data stored in Mongo DB

All Documents

Display mode: ☒ list ☐ table ([edit table view](#)) 

records / page 10 [1 - 8 of 8]

<pre>{ "_id": { "\$oid": "56e348aee4b0ced84db301fa" }, "Product": "corn", "Quantity": "3 kg", "Description": "super" }</pre>	 
<pre>{ "_id": { "\$oid": "56e35480e4b06f19d4b92882" }, "Product": "wheat", "Quantity": "5 kg", "Description": "excellent" }</pre>	 
<pre>{ "_id": { "\$oid": "56e366f2e4b06f19d4b9c0d5" }, "Product": "Maize", "Quantity": "2 kgs", "Description": "2nd grade" }</pre>	 
<pre>{ "_id": { "\$oid": "56e3672ee4b06f19d4b9c2dc" }, "Product": "Apple", "Quantity": "15 dozens", }</pre>	