

**CS551 Advance Software Engineering  
Final Project Report**

# **FARMERS VILLE**

**Team #11**

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1. Introduction:

Until now, there are very few apps developed which helps farmer in cultivating his crop. Our app supports farmer in entire cycle of cultivation of crop and also in marketing the crop. App helps the farmer in assessment of suitable conditions for harvesting the crop based on weather forecast, also complaisant to farmer to know the current prices of crops and many other features.

2. Install App:

Download the app from <https://github.com/nagakrishna/ASE-Project/tree/master/APK> then install on android device.

If you encounter below error.

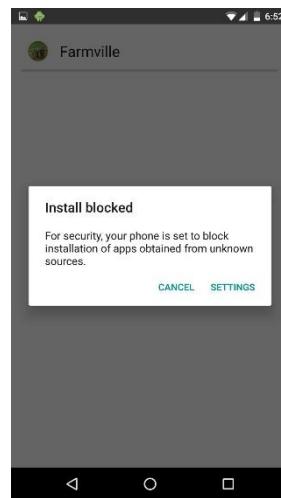


Figure 1: Installation Blocked

Follow below steps

Go to Settings -> Security -> Unknown sources

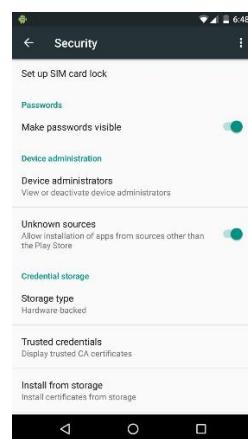


Figure 2: Allow Installation from unknown sources

### 3. Application Features:

#### 1. Registration

Fill the name, email, password and contact number and press Register button to signup to the application.

#### 2. Login:

Enter correct email and password then press login button to login to the application. Once user enter correct credentials, user will be redirected to home page.

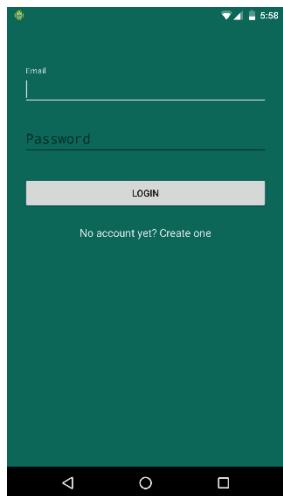


Figure 3: Login Screen

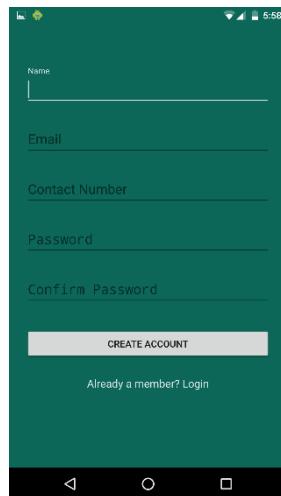


Figure 4: Registration Screen

#### 3. Home Page:

Home screen consist a navigation activity, which shows the details of user. Navigation menu consists of below options.

- a. Home
- b. Conversations
- c. My Posts
- d. About
- e. Share
- f. Logout

Apart from navigation menu, home screen consists of below menu options

Weather	Seller/Buyer	News
Journals	Live Market Prices	Suggestions
Market Locations	Settings	Account



Figure 5: Home Screen

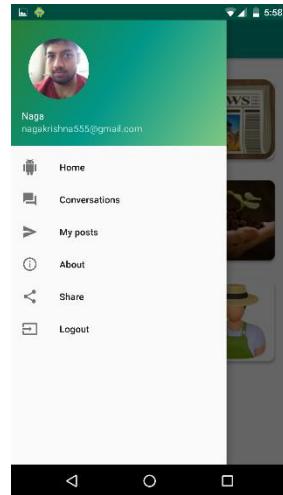


Figure 6: Navigation Menu

#### 4. Weather

Weather forecast for coming five days is shown for below details.

- a. Temperature
- b. Temperature Max
- c. Temperature Min
- d. Description
- e. Pressure
- f. Humidity
- g. Wind Speed
- h. Clouds



Figure 7: Weather

##### 5. Seller/Buyer:

User can post product details which he want to sell. Also can buy the products from other Seller.

Seller: Fill the below details shown the screen:

- a. Product Details
- b. Quantity
- c. Description
- d. Take the picture of the product by clicking the image which open camera application.

Then click on the post button, all the details will be saved.

Now slide to left or click on Buyer tab at top. This will redirect to Buyer Activity.

Buyer: A list of products available to buy from different sellers registered on the application are shown.

Click on any product, below details of the seller will be loaded.

- a. Name
- b. Contact Number
- c. Address

Click on contact number, phone call will be placed with the current number.

Click on maps, address of the seller will be shown on google maps.

Click on 'chat with username', a conversation will be initiated with the seller

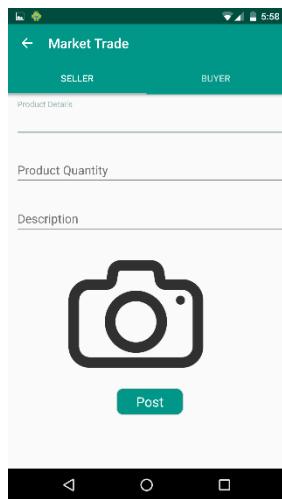


Figure 8: Seller Module

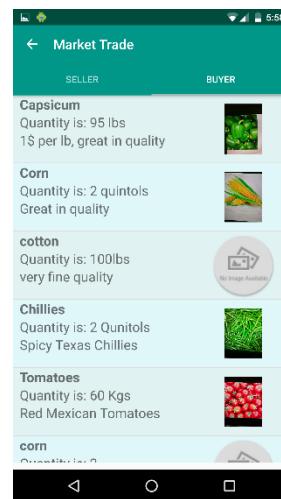


Figure 9: Buyer Module

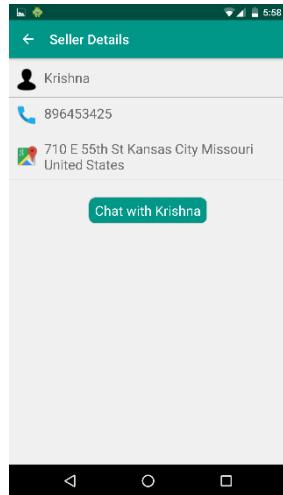


Figure 10: Seller Details

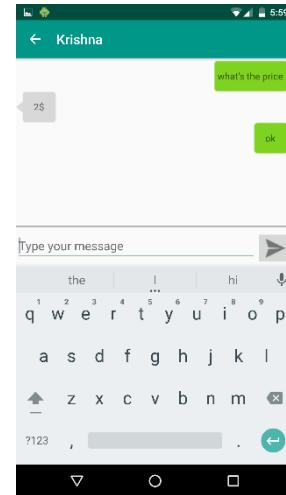


Figure 11: Chat with Seller

## 6. News

Latest agriculture news are displayed in list view with below details.

- Title
- Article
- URL of full article

Click on the URL, full article will be loaded in the browser.

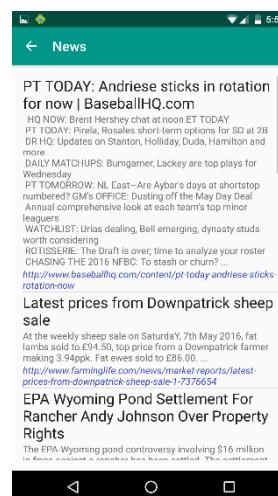


Figure 12: News

## 7. Journals

Latest journals related to agriculture are shown in list view with below details.

- Title of Journal
- Authors
- Vol no.

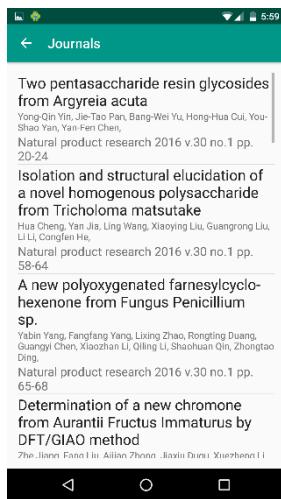


Figure 13: Journals

## 8. Live market prices

Latest market prices of the products are available. Select a crop from the dropdown and click on GetPrice. Below details of crop are displayed.

- Vegetable – name of vegetable
- Form – type like frozen, fresh or canned
- Average price/pound – price in \$
- Average price/cup – price in \$
- Last updated – date of last updated

Notifications are sent on price change.

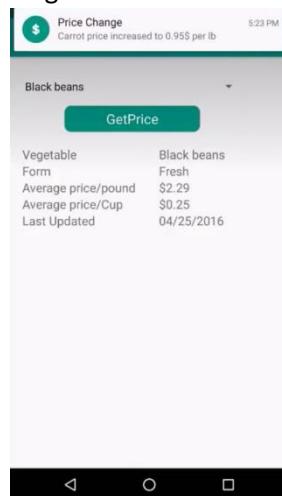


Figure 14: Live Market Prices

## 9. Suggestions

Select the crop from the dropdown and click Search Crop. Below details will be shown

- a. Fertilizers – Suggested fertilizer for crop is shown, click on the fertilizer, details of the fertilizer will be shown in browser.
- b. Insecticides - Suggested Insecticide for crop is shown, click on the Insecticide, details of the Insecticide will be shown in browser
- c. Temperature – This the ideal temperature where crop can be cultivated
- d. Suggestion – Compares current temperature with ideal temperature range and predicts weather this is right time to cultivate crop.

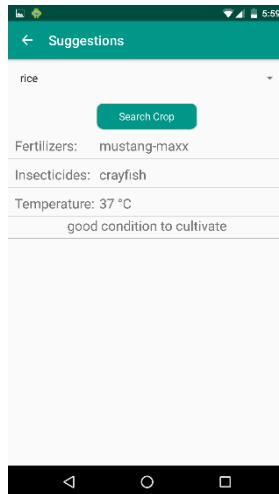


Figure 15: Suggestions

## 10. Market Locations:

All nearby market locations are shown along with below details in list view:

- a. Market Name
- b. Market Address
- c. Distance from current location

Click on the market name, address of market will be loaded in google maps.



Figure 16: Market Locations

## 11. Account

User can manage his profile here. Below options are shown

- a. Change Name
- b. Change Email
- c. Change Password
- d. Change Address
- e. Change Profile Picture
- f. Change Address

Click on the corresponding option to update any of the profile details.

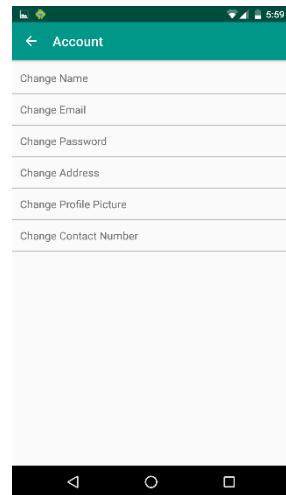


Figure 17: Account

## 12. Navigation Menu:

Provides below features

- Home – redirects user to home page
  - Conversations – All previous conversations with sellers are shown here.
  - My Posts – Can view all previous posts posted by user. A list view with below details will be shown:
    - Product
    - Quantity
    - Description
- Select any item by clicking, bubble on right will be highlighted. Then user can either delete or edit the item using option provided at bottom of screen.
- Edit: All the details can be updated
  - Delete: Currently selected item will be deleted.
  - About – Application features and technologies used to build the application are listed.
  - Share – User and recommend this application to friends, github url containing APK will be shared with users.
  - Logout – On clicking logout, user can logout from application.

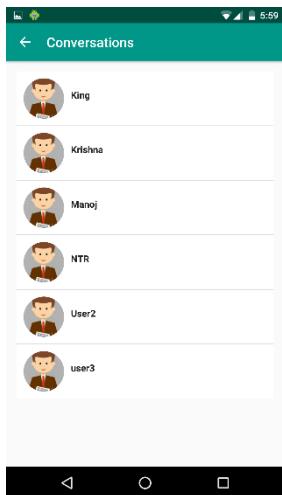


Figure 18: Conversations

Product	Cauliflower		<input type="radio"/>
Quantity	200 flowers		
Description	Great California cauliflower		
Product	Cotton		<input type="radio"/>
Quantity	40 Kgs		
Description	Good, super grade		
Product	Egg Plant		<input type="radio"/>
Quantity	500 pieces		
Description	Fresh		
Product	cotton		<input type="radio"/>
Quantity	5 quintal		
Description	good		
Product	egg plant		<input type="radio"/>
Quantity	6		
Description	good		
Product	carrot		<input type="radio"/>
Quantity	3		
Description	good		
<b>Edit</b>		<b>Delete</b>	

Figure 19: My Posts

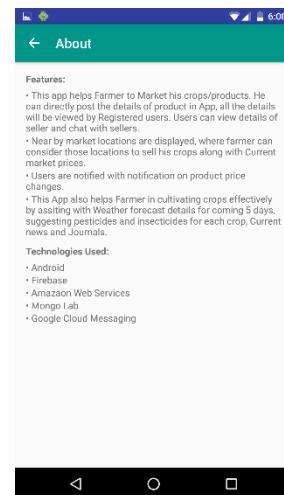


Figure 20: About

## 4. Error recognition and Handling

For Android devices 6.0 and above, if you find unfortunately application has stopped, make sure that all permissions are granted to application.

To do that manually:

Go to: Settings -> Apps -> Farmville -> Permissions

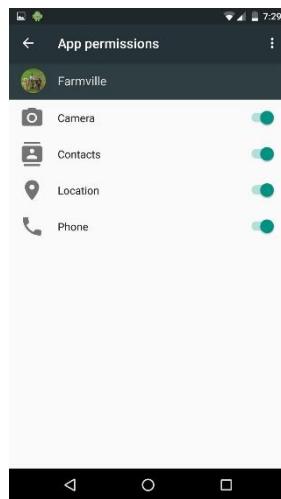


Figure 21: App Permissions

At present this are done manually, in next release this app requests permissions at runtime.

##### 5. Known bugs and Deficiencies:

All the below bugs will be fixed by next release.

1. While user creating a post, if user click image to take new picture and suddenly if backbutton is pressed without taking new picture App stops unfortunately.

At present this is only one bug, if you find any please feel free to report bugs to [nagakrishna555@gmail.com](mailto:nagakrishna555@gmail.com).

### **Project Management Report:**

From the beginning of our project, we are using Zen hub to track all our issues and tasks. We have created four milestones to complete our project. For every increment tasks are assigned to individuals and efforts are tracked. Below are screen shots of Task board and Burndown chart for each Increment.

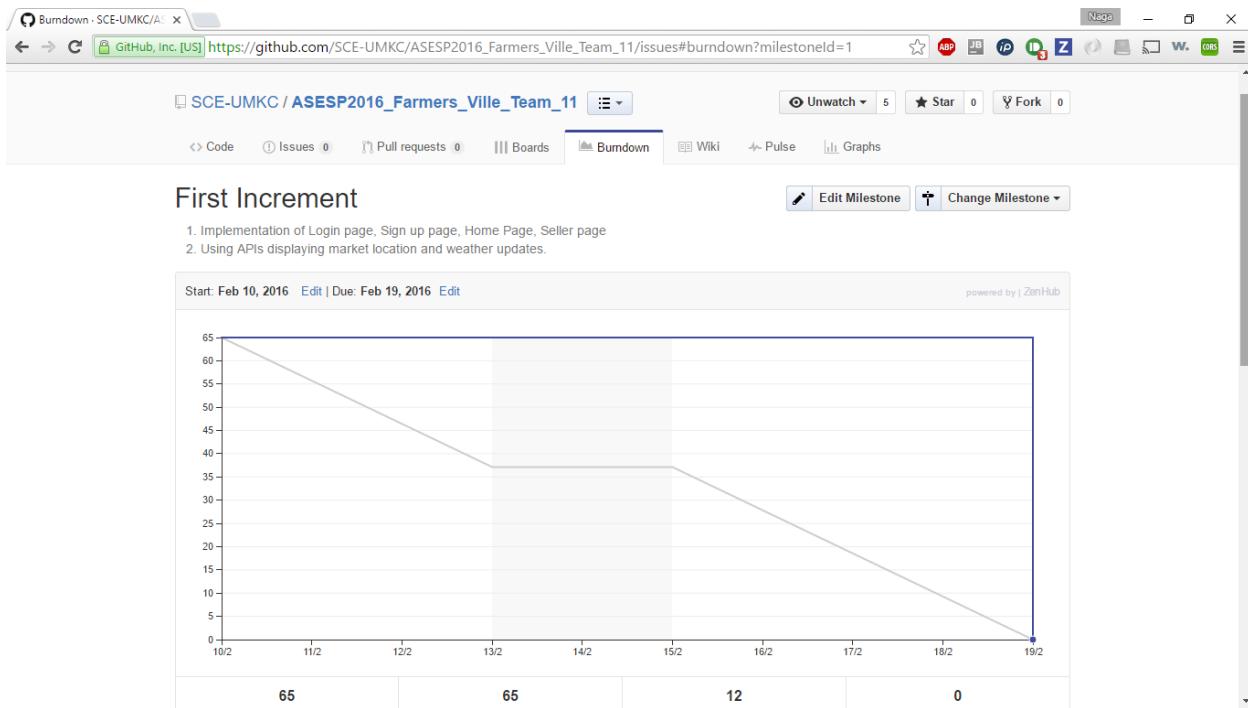
#### 1. **Increment 1:**

- a. Task Board:

Screenshot of a GitHub project board titled "nagakrishna / ASE-Project". The board has five columns: "New Issues (0)", "Backlog (0)", "To Do (2)", "In Progress (2)", "Done (9)", and "Closed (0)".

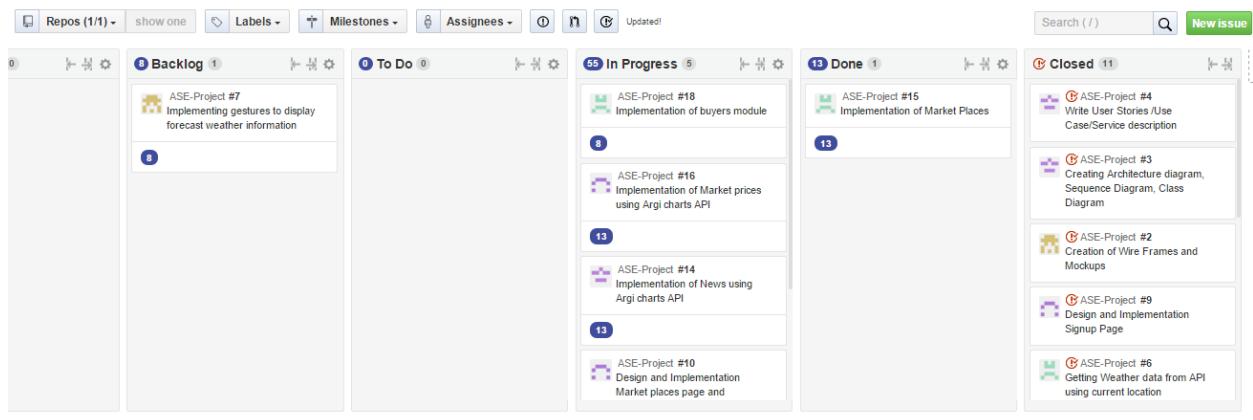
- To Do:**
  - ASE-Project #2 Creation of Wire Frames and Mockups
  - ASE-Project #4 Write User Stories/Use Case/Service description
- In Progress:**
  - ASE-Project #7 Implementing gestures to display forecast weather information
  - ASE-Project #3 Creating Architecture diagram, Sequence Diagram, Class Diagram
- Done:**
  - ASE-Project #9 Design and Implementation Signup Page
  - ASE-Project #1 Getting more done in GitHub with ZenHub
  - ASE-Project #6 Getting Weather data from API using current location
  - help wanted
  - ASE-Project #11 Implementation of Home page using Tabs layout
  - A CF Driven #8

### b. Burndown chart:



## 2. Second Increment:

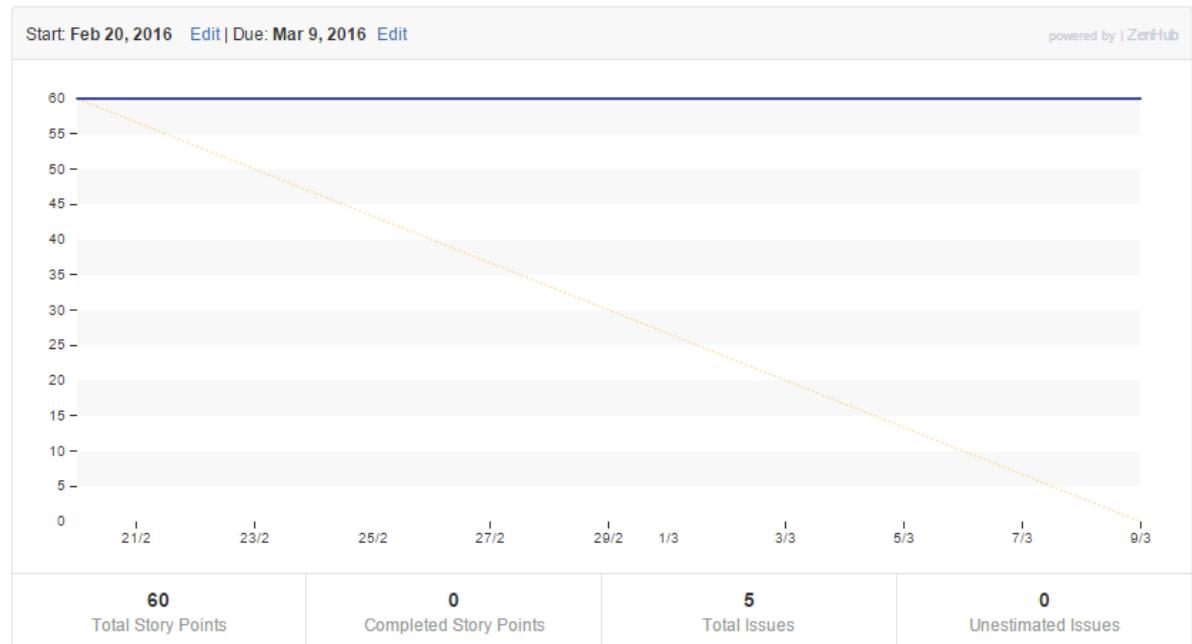
### a. Task Board:



### b. Burndown chart:

#### Second Increment

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



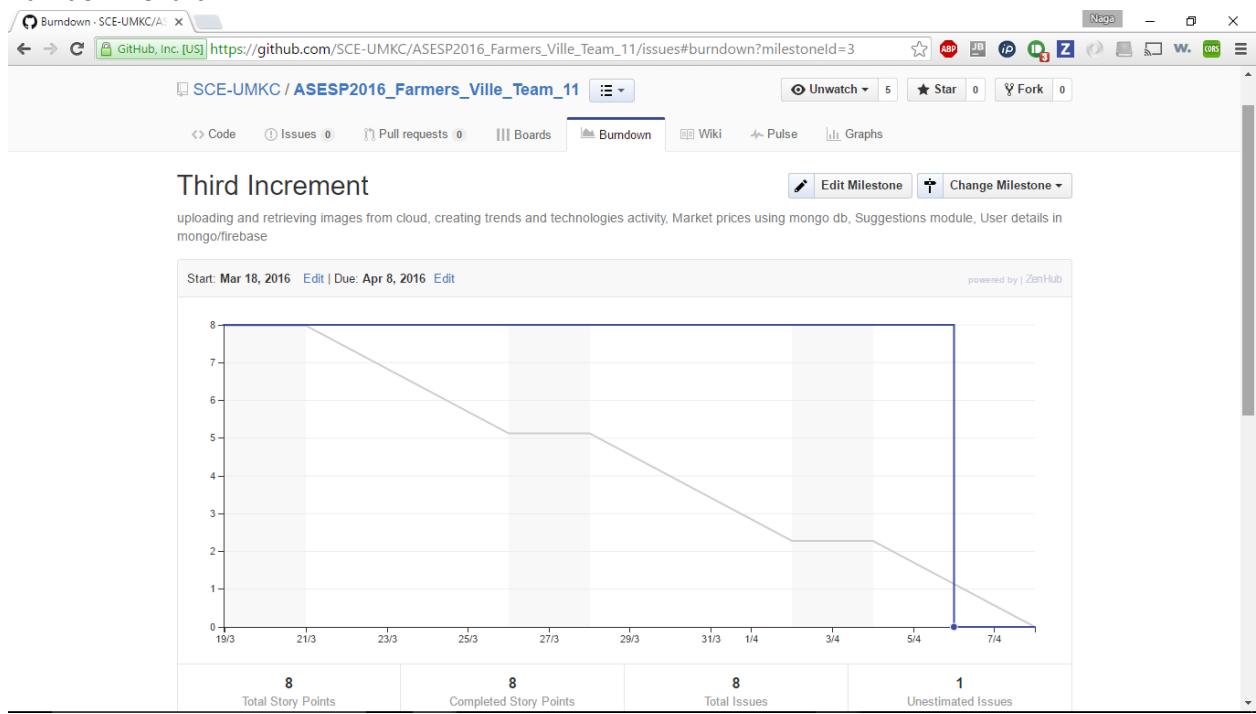
### 3. Third Increment:

#### a. Task Board:

The screenshot shows a GitHub Task Board titled "Boards - nagakrishna/ASE-Project - Chromium". The board has five columns: "New Issues", "Backlog", "To Do", "In Progress", and "Done". The "In Progress" column contains the following items:

- ASE-Project #20: Create and design trends and technologies module with data from trusted source.
- ASE-Project #23: Creating market prices module with static data from mongo db.
- ASE-Project #21: Adding hyperlink to the url in new module and working on it to look attractively.
- ASE-Project #22: Uploading users details in cloud (mongo/firebase) and login, registration pages.
- ASE-Project #24: Creating Account module.

#### b. Burndown Chart:



#### 4. Fourth Increment:

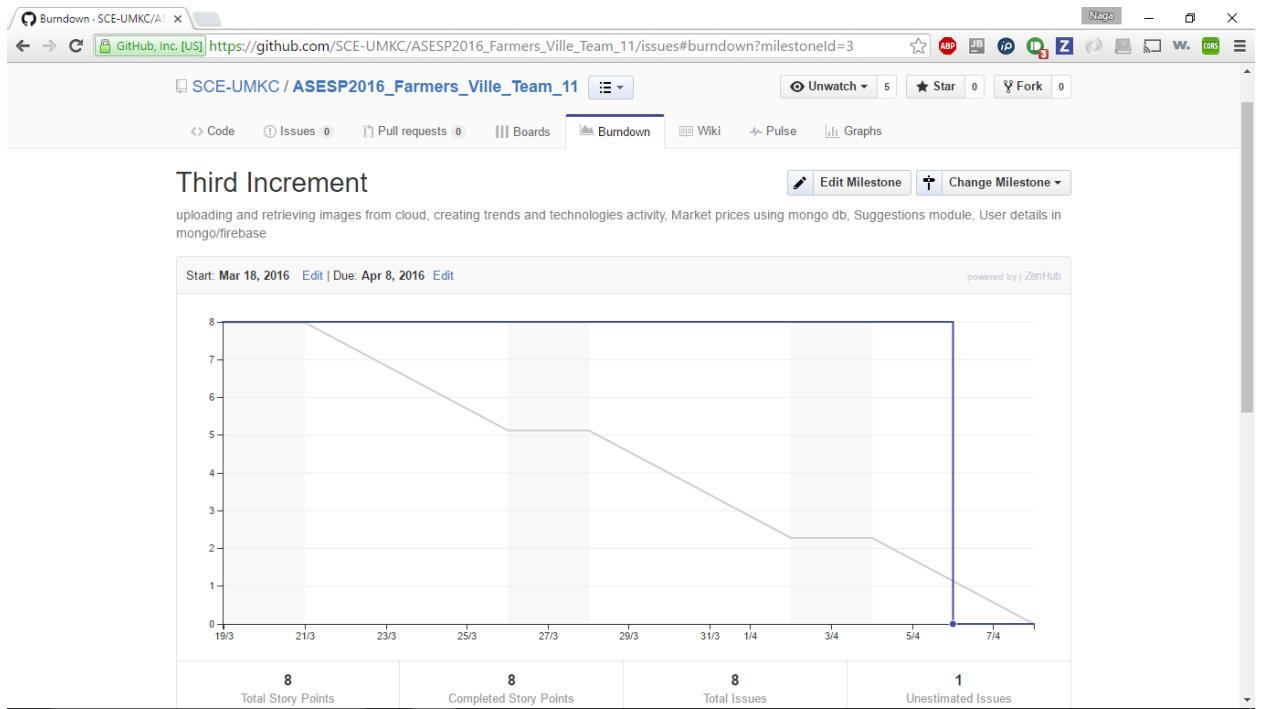
##### a. Task Board:

SCE-UMKC / ASESP2016\_Farmers\_Ville\_Team\_11

To Do (0)    In Progress (0)    Done (0)    Closed (31)

- ASESP2016\_Farmers\_Ville\_Team, Implementation of Market prices using Argi charts API
- ASESP2016\_Farmers\_Ville\_Team, Create and design trends and technologies module with data f...
- ASESP2016\_Farmers\_Ville\_Team, Adding hyperlink to the url in new module and working on ui ...
- ASESP2016\_Farmers\_Ville\_Team, Creating market prices module with static data form mongo db

##### b. Burndown Chart:



## **Project Evaluation**

We have implemented almost all the key features which we have specified in the project proposal. Although, some features are modified and additional features are implemented. Some modules like market prices, implemented using the data from the USDA, as the API provided by them was not free of cost. We have implemented the push notifications for this module but this feature added to the buyer seller module could be add on to the application. We also implemented chat between sellers and buyers using Firebase which is not in proposal. Apart from these our project satisfied all the specifications mentioned. Agile process was very much handy during the course of this application development. We were able to adapt to the additional features which were added in the development of various modules. We were able to update the application according to the inputs from the professor and the TA's. Even though we had to implement some additional features in between, we stood by our plan and implemented all the features according to the plans. We had initially divided the modules of the application among ourselves and completed the respective tasks according to the deadlines.

## **Individual Contribution to Project:**

Vadlamudi Naga Krishna: 25%

- Login and Registration – Mongo, AWS
- Buyer and Seller Modules
- Editing and Deleting Seller Posts
- Conversation between seller and buyer using Firebase
- Market Locations
- Weather
- Managing user profile

Ejjirothu Manoj Prabhakar: 25%

- Market Prices
- Pushing notifications using Google Cloud Messaging

Sudheer: 25%

- Agriculture News
- Agriculture Journals

Pratap: 25%

- Suggestions

# Project Proposal

Project Title: Farmers Ville

Group Number: 11

Group members

- NagaKrishna Vadlamudi(56)
- Manoj Prabhakar Ejjirothu(10)
- Sudheer Kumar Nagaruri(37)
- 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

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

## System Features

- **Marketing:** This app helps the farmers to sell his crop directly to the consumer.

- **Market Locations:** This app will provide nearest market locations where farmer can sell his products.
- **Market prices:** This app provides market prices of all agricultural products.
- **News:** This app provides current agricultural news.
- **Latest Trends and Technologies:** This app have the access to USDAs latest journals on Agriculture which have latest cultivation methods being used around the world.
- **Suggestions:** This app guides farmers in selecting the Fertilizers and pesticides for particular crop.
- **Weather Reports:** This app provides latest weather forecast updates to farmer based on his location, which helps the farmer in planning harvesting.

#### **Related Apps:**

- “Agri App” <https://play.google.com/store/apps/details?id=com.criyagen&hl=en>
- “IFFCO Kisan- Agriculture App” -  
<https://play.google.com/store/apps/details?id=com.IFFCOKisan>

## **Bibliography:**

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

## **Backup Project:**

An Application which helps to meet with friends on the go. Based on the location of the friends, advises to meet at a place which is mean from both the locations. It provides places for Dining, shopping etc., based on location with check in and check out features. Integrating with social media like Facebook, Twitter and Google +. This provides a unique way in suggesting meet up with friends while travelling.

## **Project Plan**

- As a part of first increment we have will implement the simple modules of our application, the weather module and locating nearby market places . Research about the available API's to implement the modules like live market prices, live news, Journal reports and current trends in agriculture field. Tasks of all the member to be created in Zenhub with deadlines for every module.
- As a part of the second increment we will work on the storing and retrieving of data from the application to the Database. We shall develop the Java services for the communication with the mongodb. Storing and retrieving of images also to be implemented in the second increment.
- As a part of the third increment, we will work on the sign in and registration pages, Buyer and seller modules , current trends and technologies, live market prices and the pesticides module. We will also added the call service for the customer contact number and locating the address of the customer on the Google maps as an addition feature of the customer account.
- For the final increment we will implement the chat application between the customers, push notifications for the market prices. Integrate the hyperlinks to the pesticides module. Integrate all the modules to the home application. Deploy the backend java services in the Amazon web services. UI of all the modules have to be designed for a unified look of the overall application. Regression testing of the application for the bugs.



**CS551 Advance Software Engineering**

**FIRST INCREMENT REPORT**

**Farmers Ville**

**Group#11**

**Naga Krishna Vadlamudi(56)**

**Manoj Prabhakar Ejjirothu(10)**

**Sudheer Nagaruri(37)**

**Pratap Kadari(20)**

# Project Proposal

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**Group number: 11**

**Group Members:**

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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

# First Increment Report

As a part of the first increment we have implemented the login page and the register page of the application. The user would be able to login with a unique id. If he is not a registered user, then a register page for the user to sign up for the application is provided. The user shall provide his details like name address email id contact number. Once the user Sign up's he is redirected to the login page. We have implemented the Weather forecast updates service as well for the increment. The user would be able to get the current location weather forecast updates. We have used the open weather API which gives forecast for coming 5 days with data every 3 hours. Also Implemented seller page for marketing.

## 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 former 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.

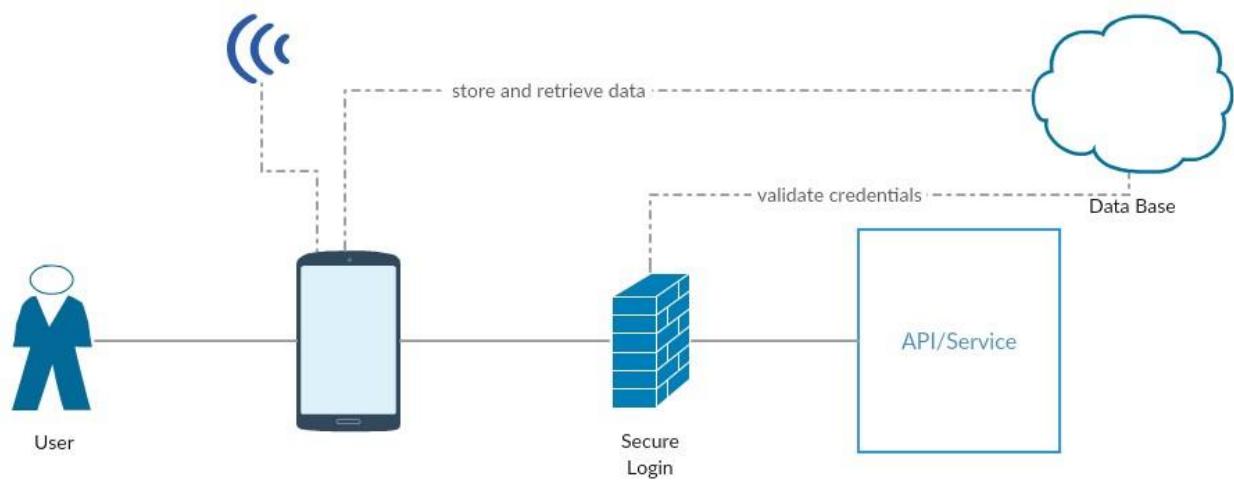
#### **Service Description:**

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. News 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>

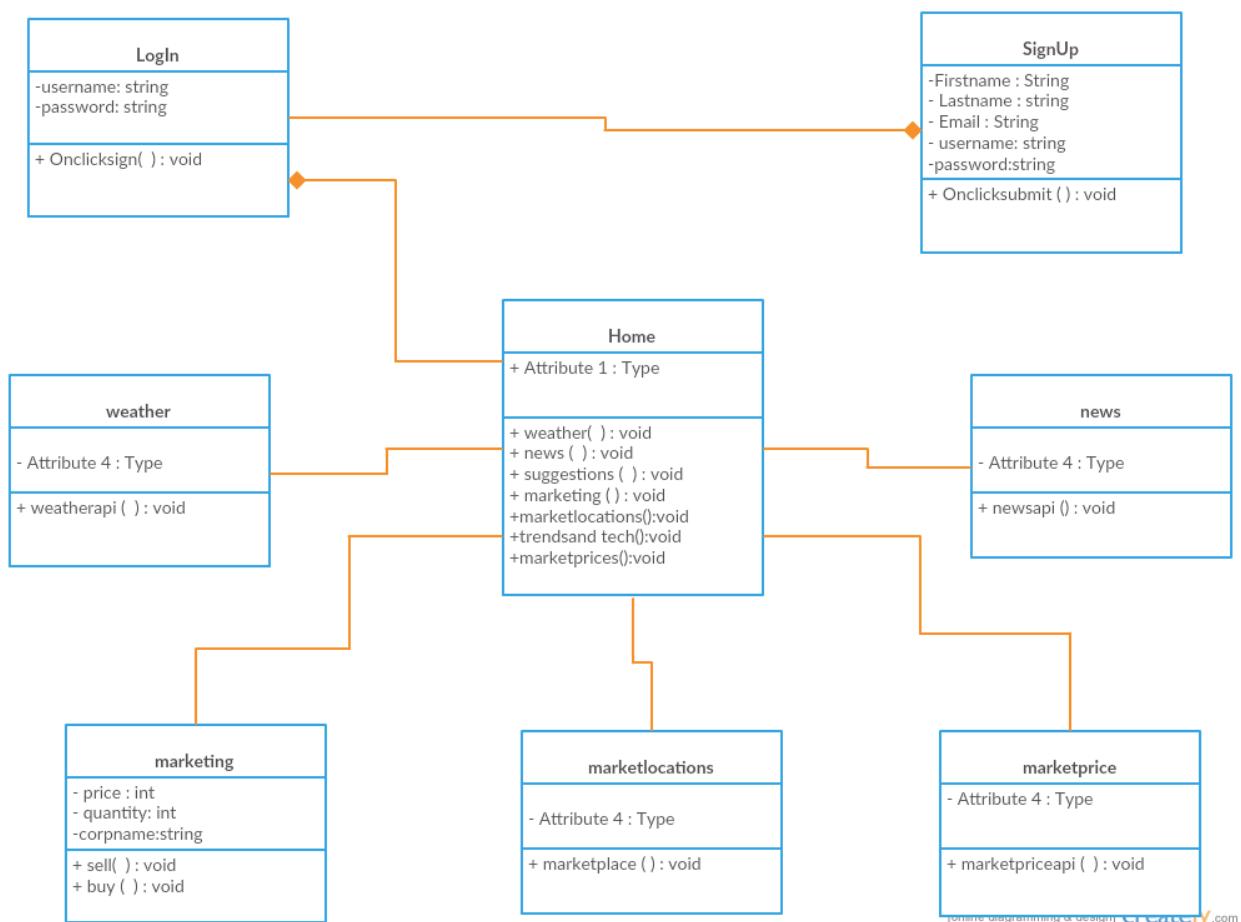
## Architecture Diagram



## Use Case Diagram

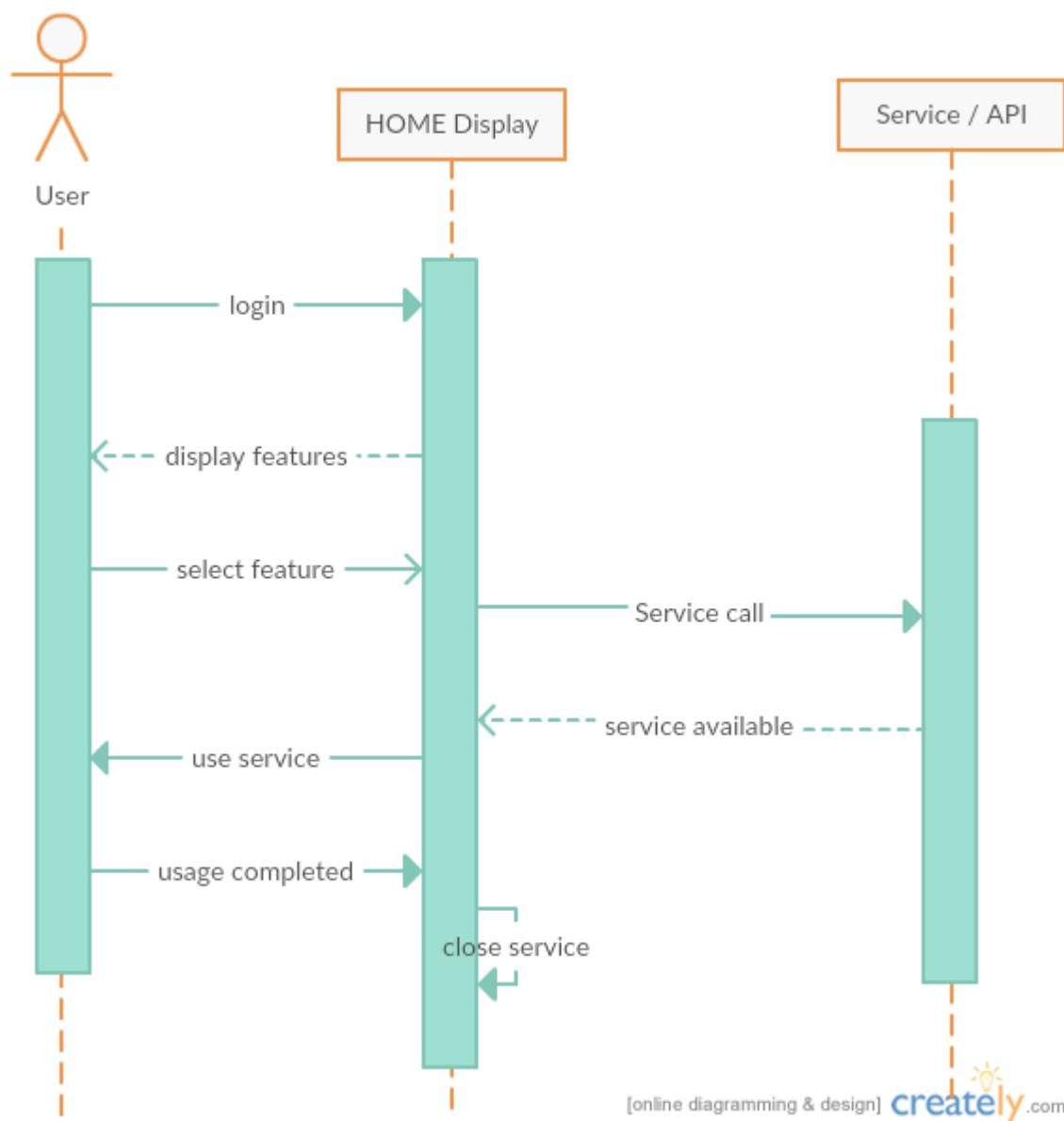


## Class Diagram:



[online diagramming & design] .com

### Sequence Diagram



## Issues Tool Bar

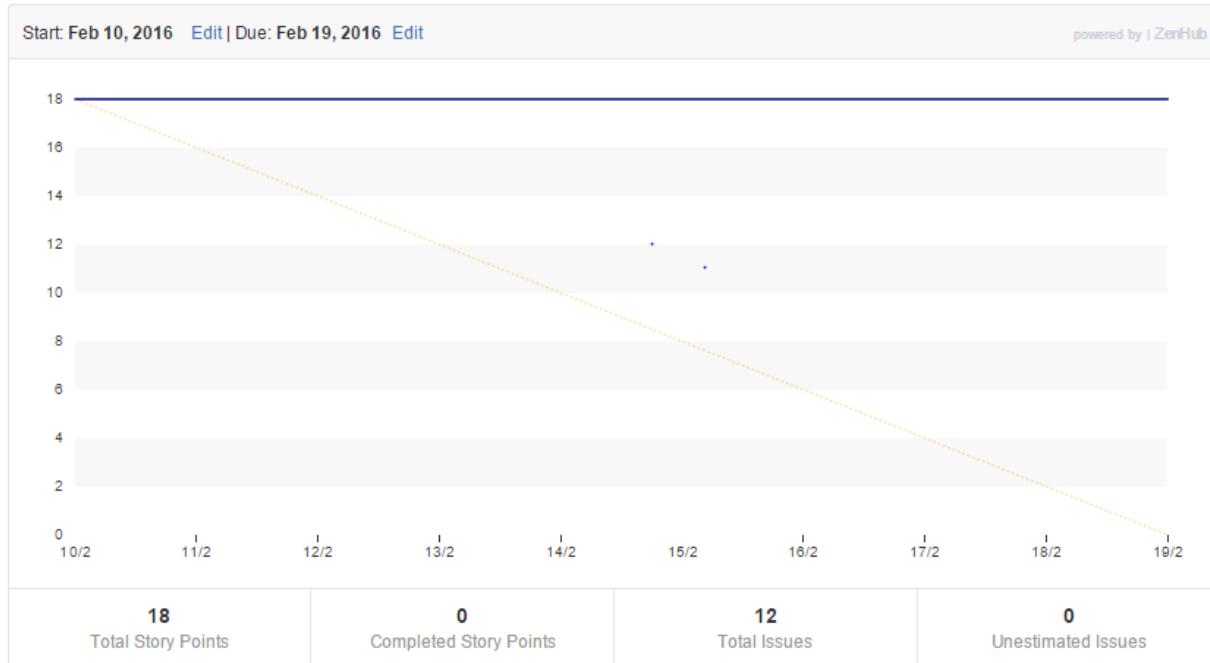
The screenshot shows the GitHub Issues tool bar for the ASE-Project repository. The top navigation bar includes links for Code, Issues (13), Pull requests (0), Boards, Burndown, Wiki, Pulse, and Graphs. Below the navigation bar, there are several filter and search options: Repos (1/1), show one, Labels, Milestones, Assignees, and a search bar with a 'New issue' button.

The main area displays five columns of tasks:

- New Issues (0)**: Empty column.
- Backlog (0)**: Empty column.
- To Do (2)**: Contains two items:
  - ASE-Project #2: Creation of Wire Frames and Mockups (Status: To Do, Assigned to 1 person)
  - ASE-Project #4: Write User Stories / Use Case/Service description (Status: To Do, Assigned to 1 person)
- In Progress (2)**: Contains two items:
  - ASE-Project #7: Implementing gestures to display forecast weather information (Status: In Progress, Assigned to 1 person)
  - ASE-Project #3: Creating Architecture diagram, Sequence Diagram, Class Diagram (Status: In Progress, Assigned to 1 person)
- Done (9)**: Contains nine items:
  - ASE-Project #9: Design and Implementation Signup Page (Status: Done, Assigned to 1 person)
  - ASE-Project #1: Getting more done in GitHub with ZenHub (Status: Done, Assigned to 1 person)
  - ASE-Project #6: Getting Weather data from API using current location (Status: Done, Assigned to 1 person)
  - help wanted (Status: Done, Assigned to 1 person)
  - ASE-Project #11: Implementation of Home page using Tabs layout (Status: Done, Assigned to 1 person)
  - ASE-Project #8 (Status: Done, Assigned to 1 person)
  - ASE-Project #10 (Status: Done, Assigned to 1 person)
  - ASE-Project #12 (Status: Done, Assigned to 1 person)
  - ASE-Project #13 (Status: Done, Assigned to 1 person)
- Closed (0)**: Empty column.

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 first increment. We have created the mile stone for the first implement only.

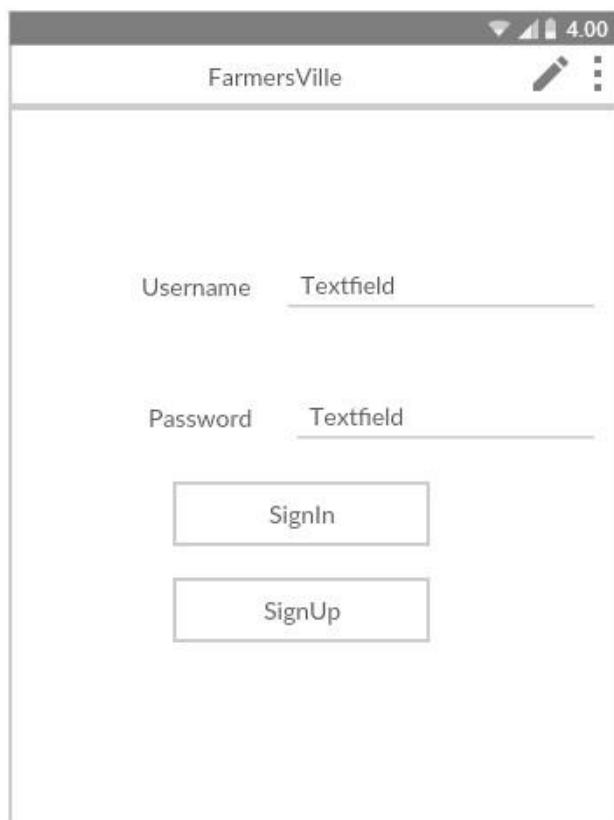
## Burn Down Graph



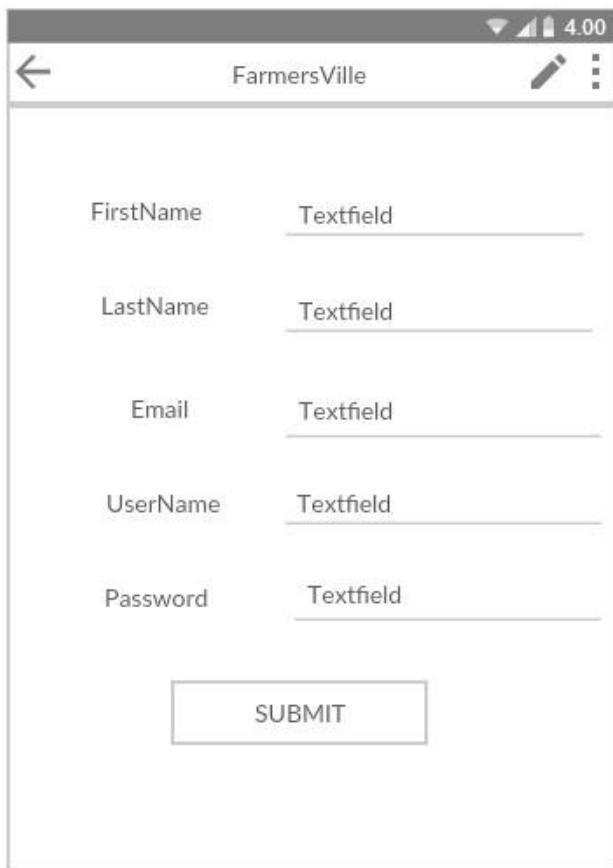
The burn down chart for the tasks assigned and the completed tasks. The first increment has to be completed by 02/19 . By the end of the task completion we got the above burn down chart

## Wire Frames

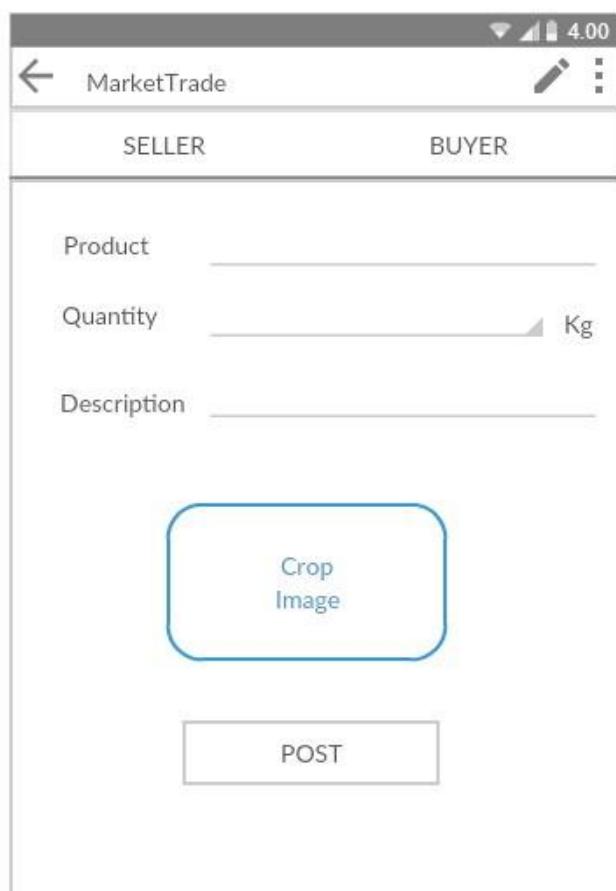
### Login Page



## Sign Up Page



## Market Trade Page



### Application Home Page



## Weather Page

4.00

← Weather

Date \_\_\_\_\_

Temp \_\_\_\_\_

Humidity \_\_\_\_\_

Date \_\_\_\_\_

Temp \_\_\_\_\_

Humidity \_\_\_\_\_

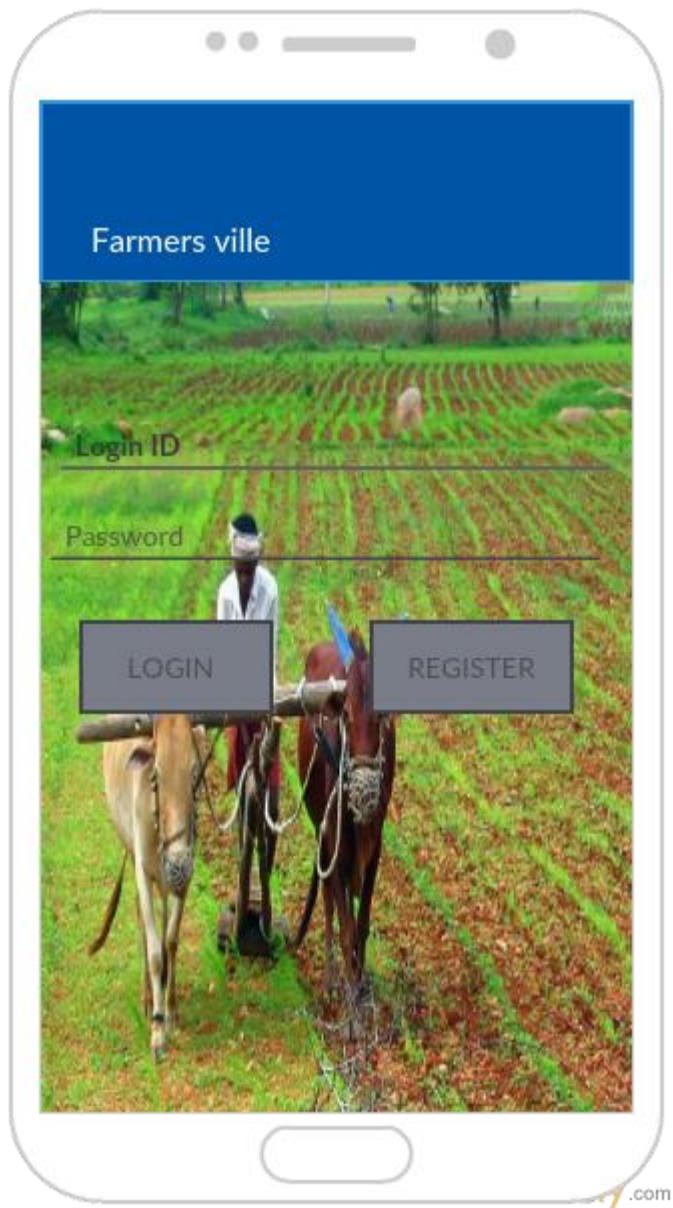
Date \_\_\_\_\_

Temp \_\_\_\_\_

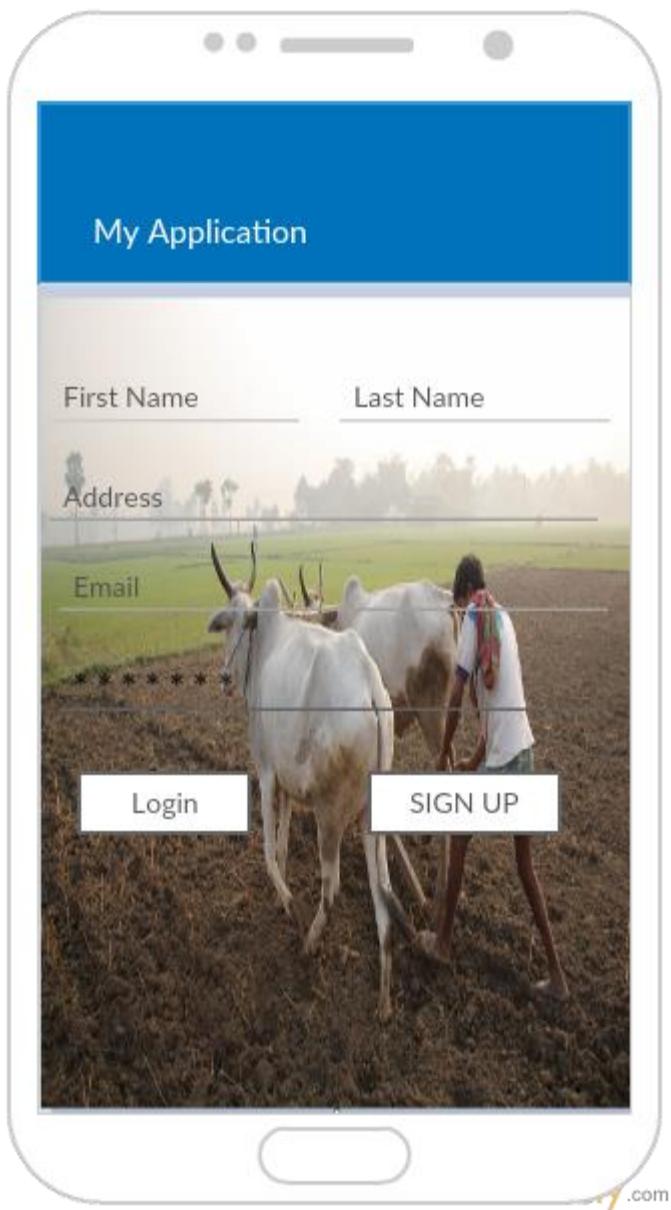
Humidity \_\_\_\_\_

## Mock Ups

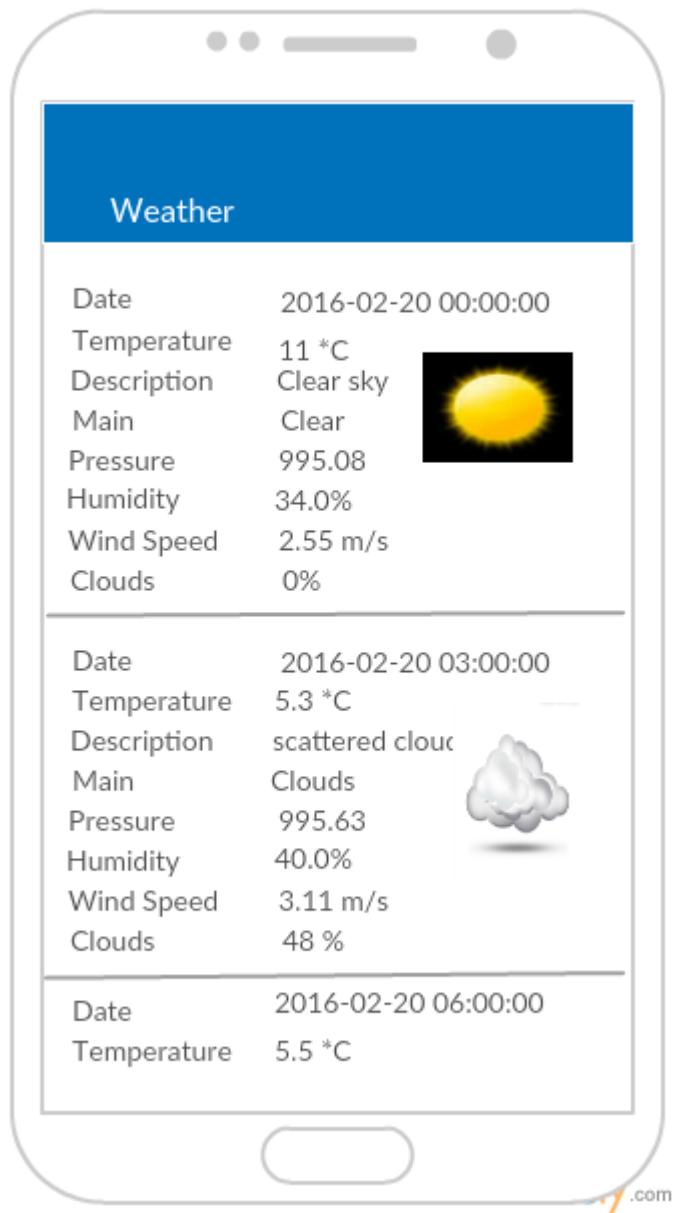
### Login Page



**Sign Up Page**



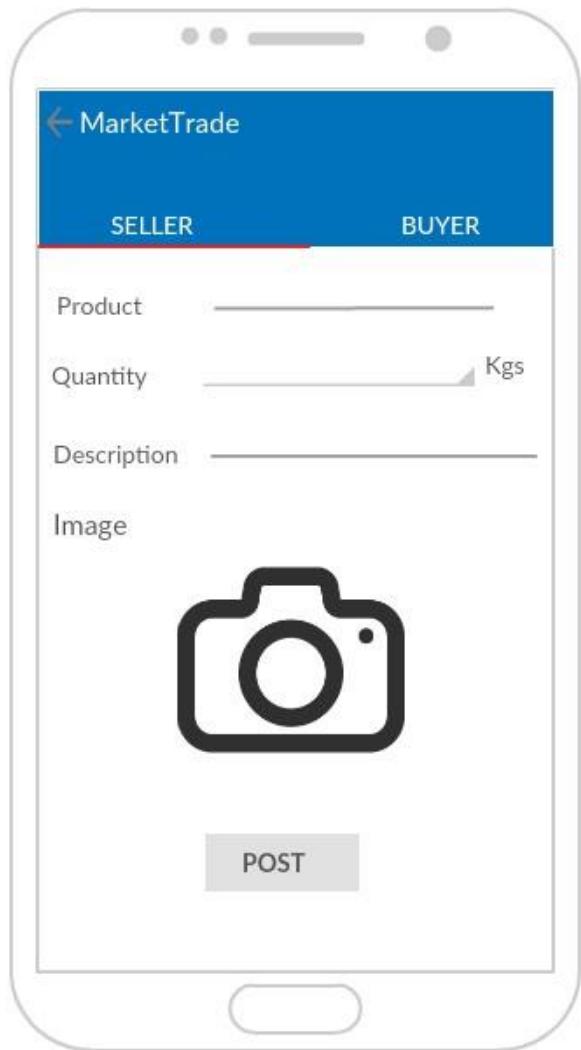
## Weather Page



## Home Screen Page



## Market Trade Page



## 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

Test case 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 email 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

## Final Screen Shots

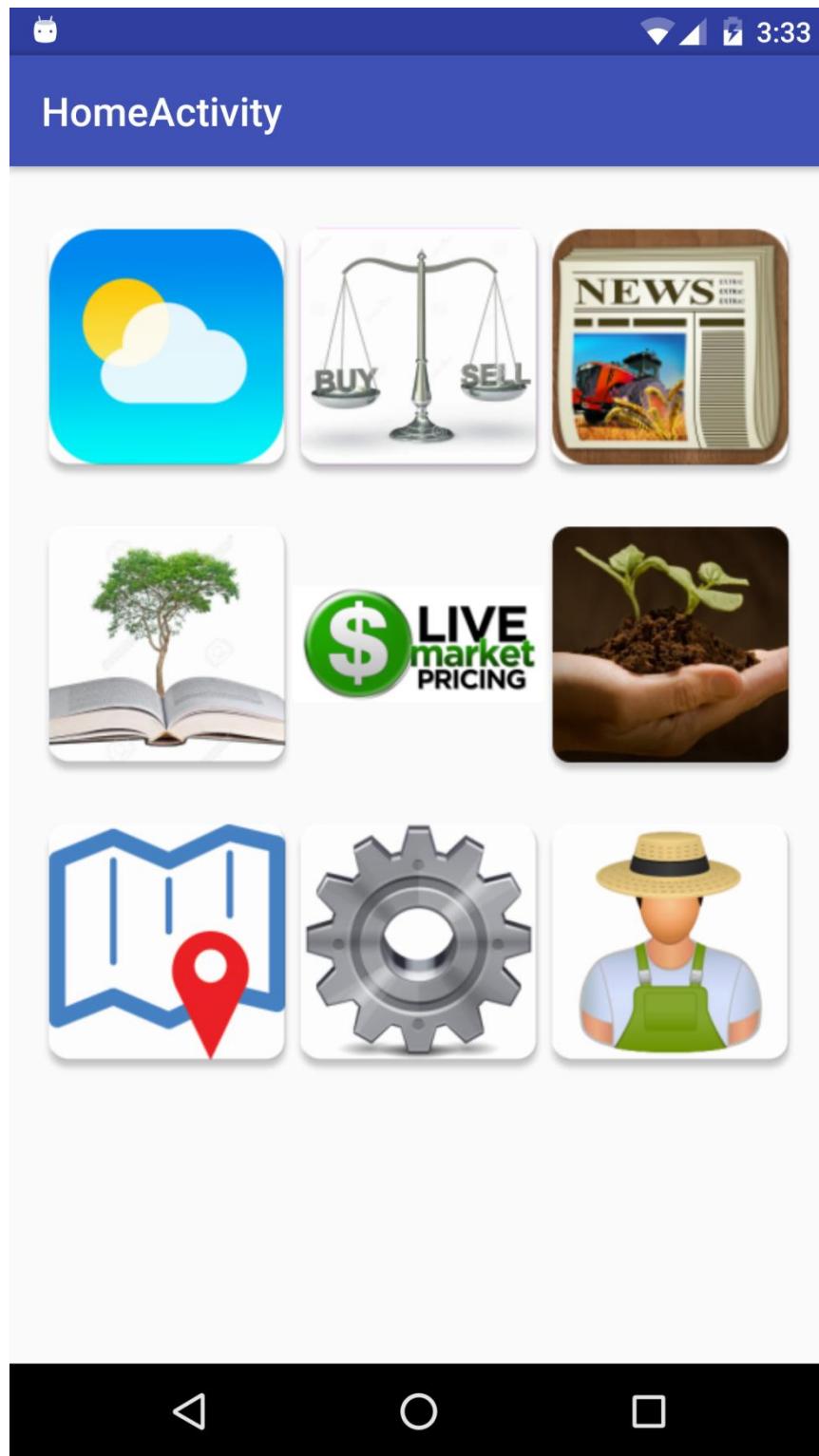
### Loginpage



## Signup Page



## Home Screen



## Weather Page

ActionBar icons: battery, signal, network, 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 %



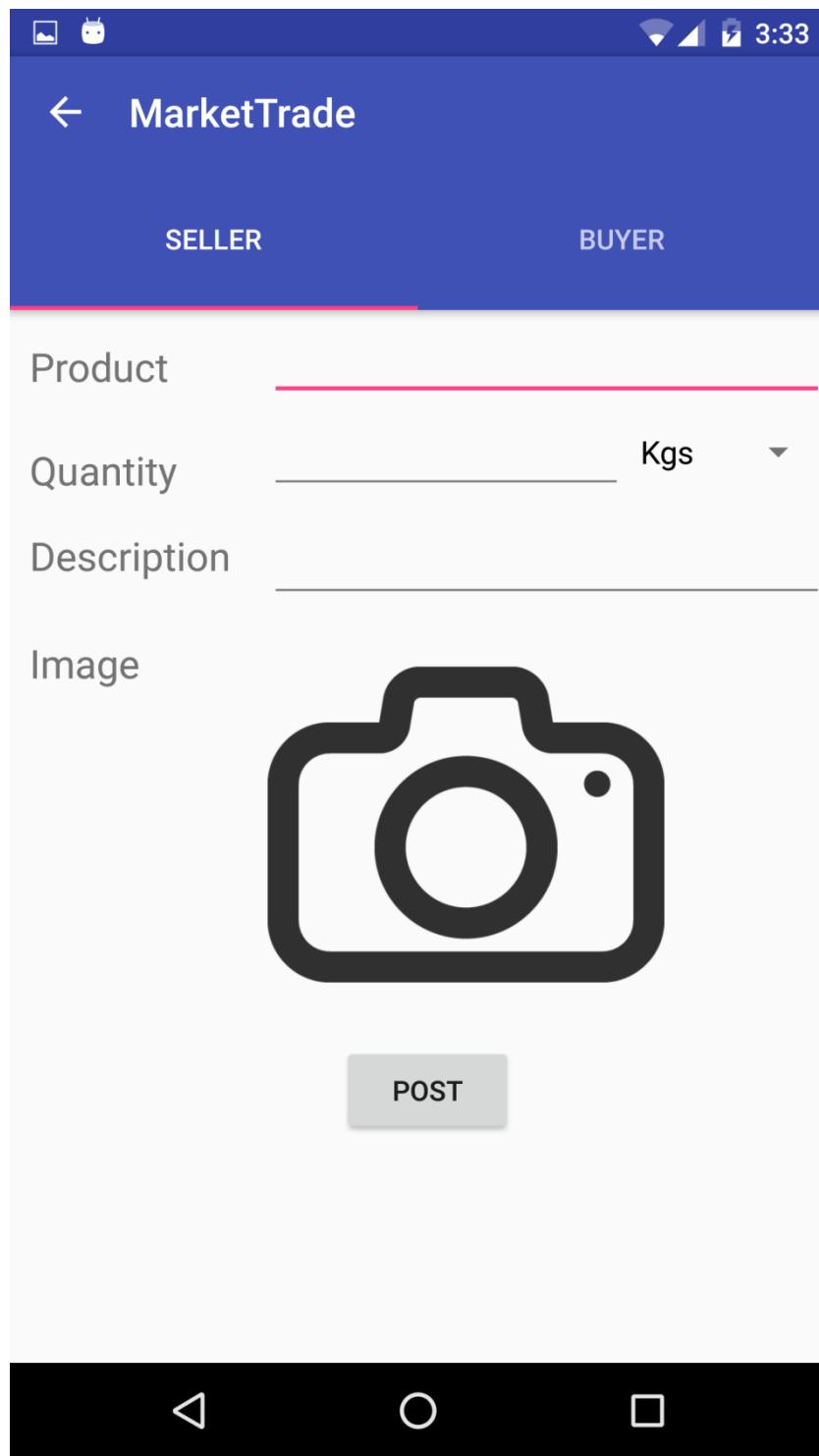
---

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



Bottom navigation bar: back, home, recent apps

## Market Page





**CS551 Advance Software Engineering**

**SECOND INCREMENT REPORT**

**Farmers Ville**

**Group#11**

**Naga Krishna Vadlamudi (56)**

**Manoj Prabhakar Ejjirothu (10)**

**Sudheer Nagaruri (37)**

**Pratap Kadari (20)**

# Project Proposal

**Project Title: Farmers Ville**

**Group number: 11**

**Group Members:**

5. Naga Krishna Vadlamudi (56)
6. Manoj Prabhakar Ejjirothu (10)
7. Sudheer Kumar Nagaruri (37)
8. 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:**

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

**System Features:**

10. **Marketing:** This app helps the farmers to sell his crop directly to the consumer.
11. **Market Locations:** This app will provide nearest market locations where farmer can sell his products.
12. **Market prices:** This app provides market prices of all agricultural products.
13. **News:** This app provides current agricultural news.
14. **Notification:** Notification of Availability of the products and feedback on the products sold
15. **Ratings :** Ratings can be given to all the products available for sale and for the products sold as well.
16. **Latest Trends and Technologies:** This app has the access to USDA's latest journals on Agriculture which have latest cultivation methods being used around the world.
17. **Suggestions:** This app guides farmers in selecting the Fertilizers and pesticides for particular crop.
18. **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 is seller module is stored in Mongo DB cloud. Later this data is retrieved in buyer module. Account specific module is not yet implemented. Along with this added agriculture news from Alchemy new API and Suggestion using trusted source.

### **Features:**

- 8. 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.
- 9. 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.
- 10. 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.
- 11. 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.
- 12. 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.
- 13. 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 former 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.

**14. 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:**

6. **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.
7. **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.
8. **Market Prices:** Current Agricultural products market prices are displayed using Agri Charts API.
9. **Agriculture News:** Daily trending agriculture news is displayed using Agri Chart API. News specific to agricultural products like corn or wheat can be retrieved.
10. **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 2<sup>nd</sup> 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
- Suggestions
- News

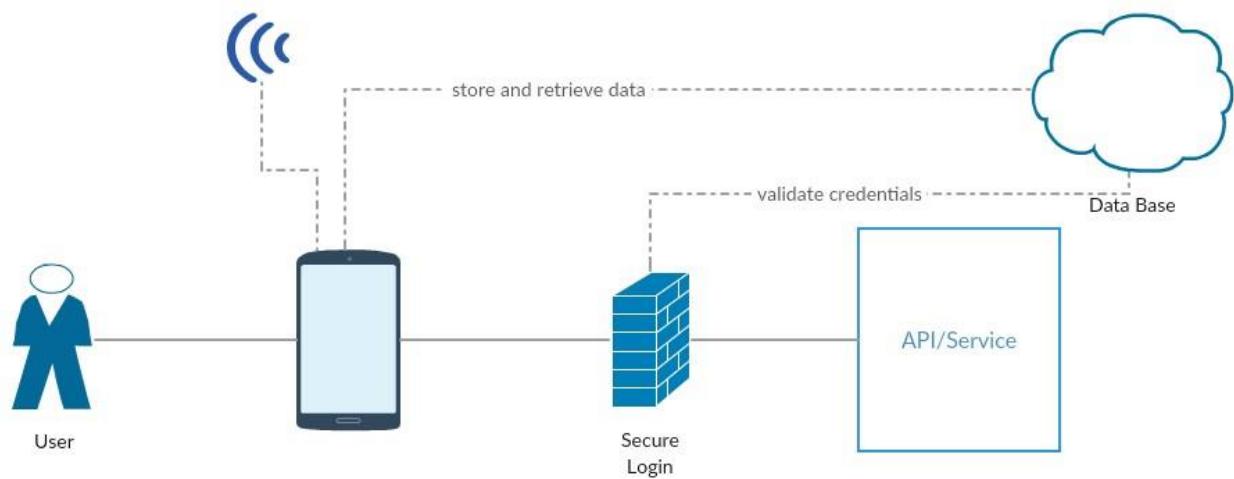
### **Features to be implemented:**

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

### **Improvements:**

- UI improvements on all modules

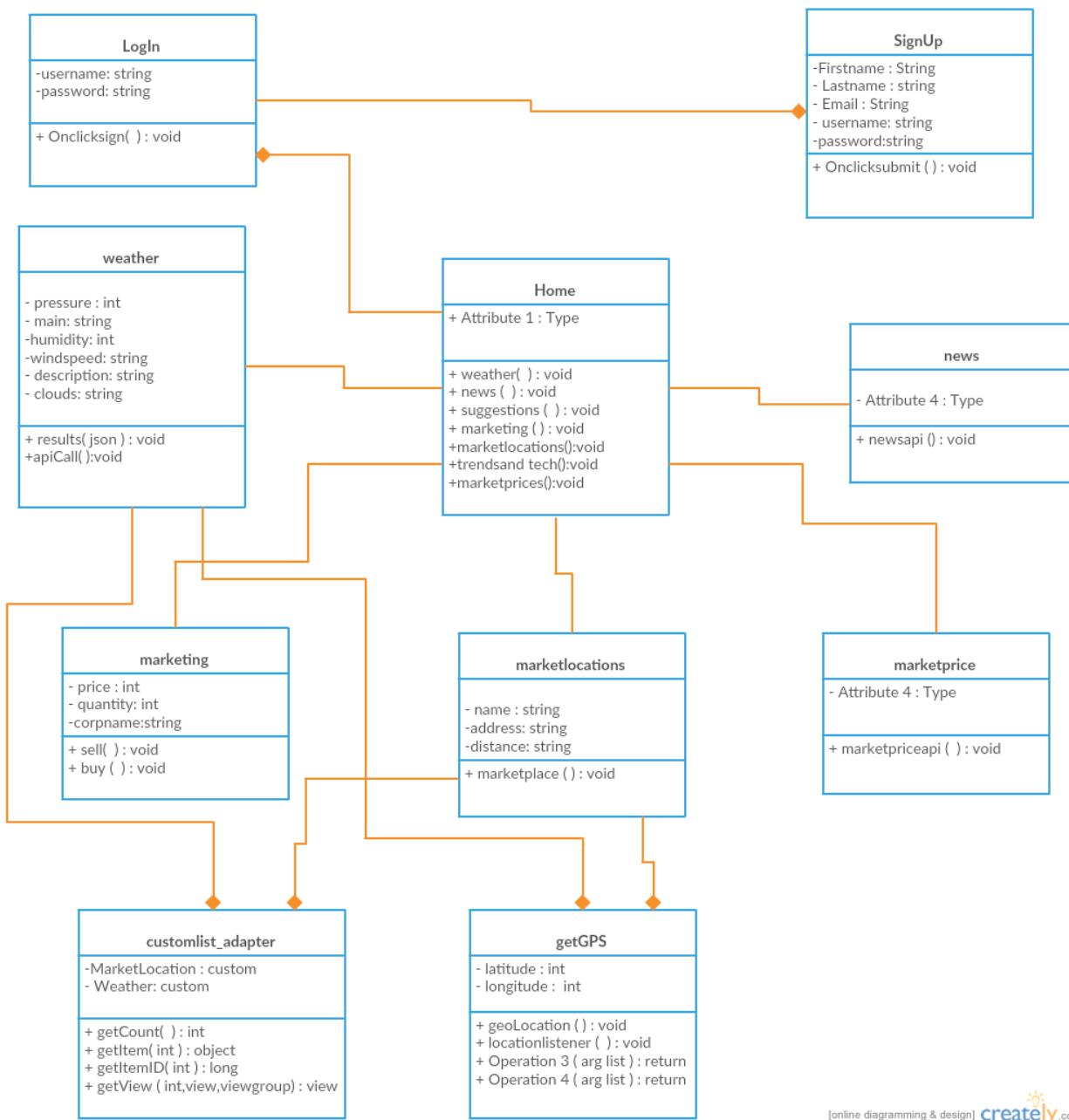
## Architecture Diagram



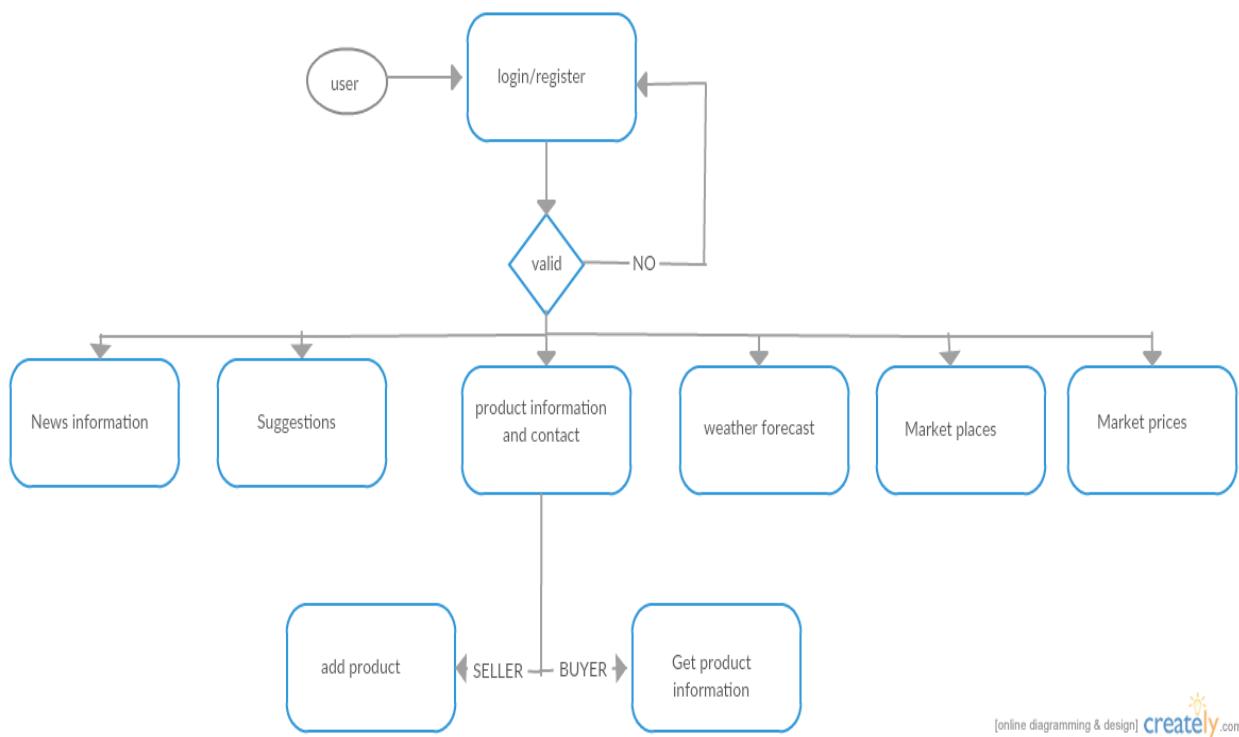
## Use Case Diagram



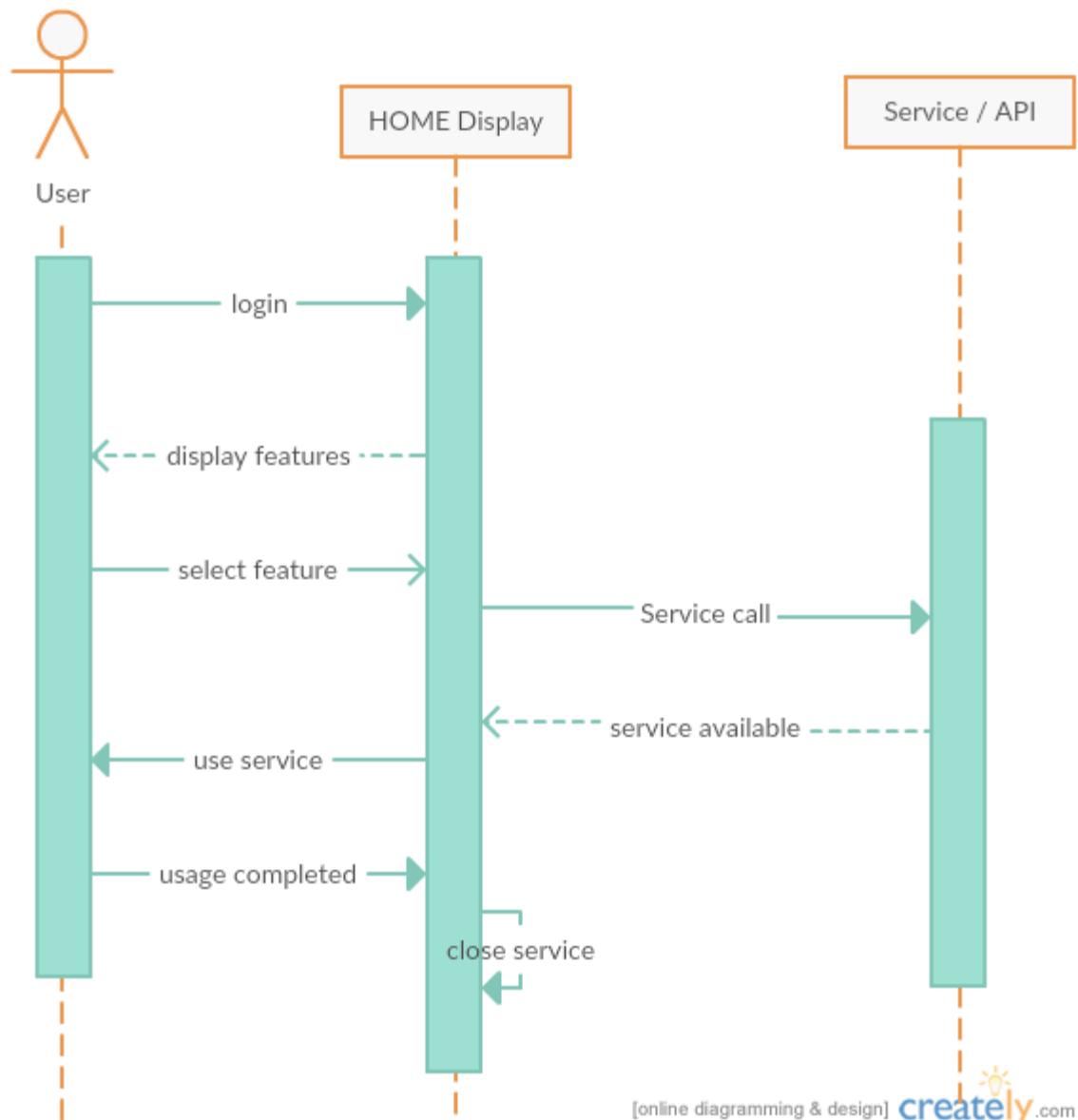
## Class Diagram:



## Activity Diagram



## Sequence Diagram



## Issues Tool Bar

The Issues Tool Bar displays five columns of tasks:

- Backlog:** 1 item (ASE-Project #7: Implementing gestures to display forecast weather information)
- To Do:** 0 items
- In Progress:** 5 items
  - ASE-Project #18: Implementation of buyers module
  - ASE-Project #16: Implementation of Market prices using Argi charts API
  - ASE-Project #14: Implementation of News using Argi charts API
  - ASE-Project #10: Design and Implementation Market places page and
- Done:** 13 items
  - ASE-Project #15: Implementation of Market Places
- Closed:** 11 items
  - ASE-Project #4: Write User Stories/Use Case/Service description
  - ASE-Project #3: Creating Architecture diagram, Sequence Diagram, Class Diagram
  - ASE-Project #2: Creation of Wire Frames and Mockups
  - ASE-Project #9: Design and Implementation Signup Page
  - ASE-Project #6: Getting Weather data from API using current location

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

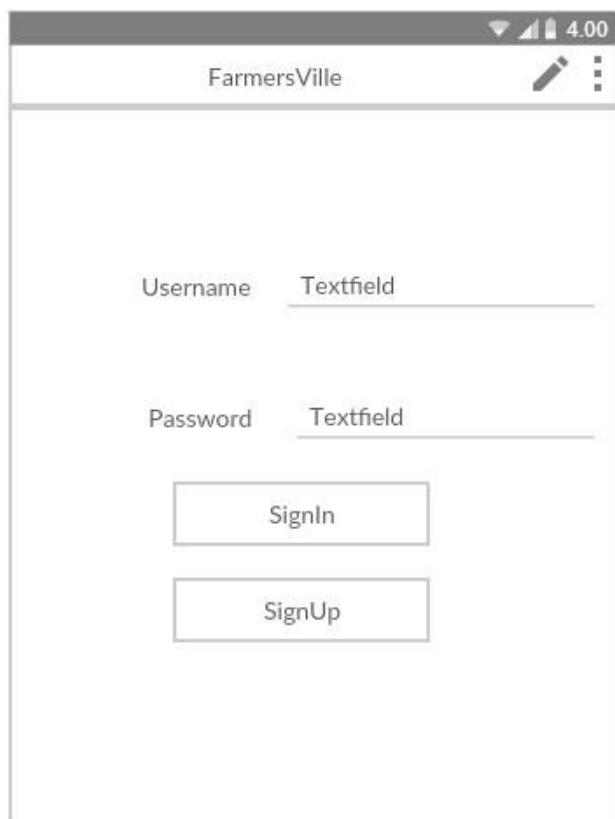
Implementation of Market Prices, News, Suggestions, Market Places, Buyer modules



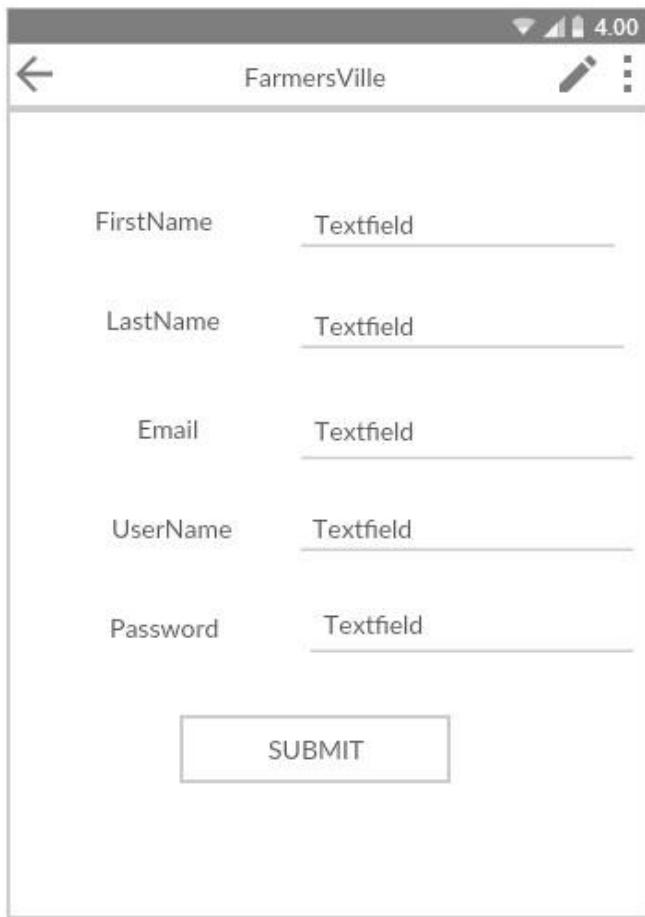
The burn down chart for the tasks assigned and the completed tasks. The first increment has to be completed by 02/19 . By the end of the task completion we got the above burn down chart

## Wire Frames

### Login Page



## **Sign Up Page**



## Market Trade Page



## **Application Home Page**



## Weather Page

The image shows a mobile application interface titled "Weather". At the top, there is a navigation bar with a back arrow, the title "Weather", a pencil icon for editing, and a menu icon. Below the title, there are three separate entries, each consisting of three text input fields: "Date", "Temp", and "Humidity".

Date	
Temp	
Humidity	

  
Date	
Temp	
Humidity	
  
Date	
Temp	
Humidity	

## Market Locations Page

The image shows a wireframe of a mobile application interface. At the top, there is a header bar with a back arrow icon, the title "Marketlocations", and a set of edit icons (a pencil and three vertical dots). Below the header, there are two identical sections, each consisting of three input fields: "Name", "Address", and "Distance". Each field is preceded by its respective label and followed by a horizontal line for input.

[online diagramming & design]  .com

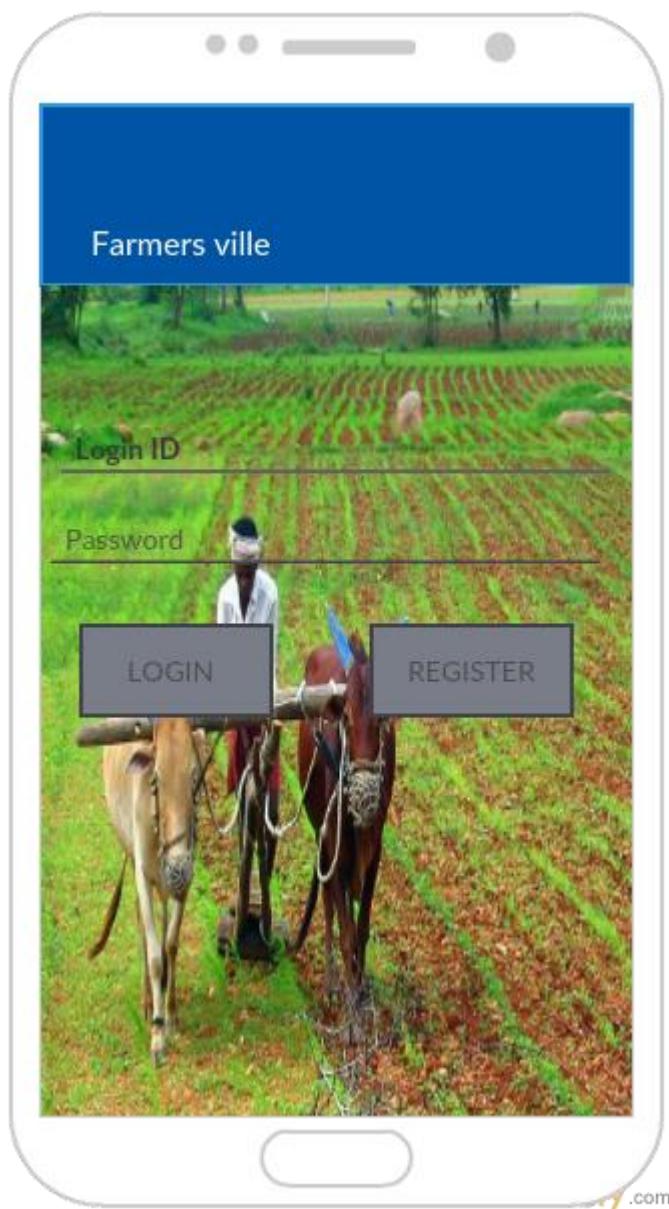
## Buyer Page

The image shows a mobile application interface for 'MarketTrade'. At the top, there is a navigation bar with a back arrow, the app name 'MarketTrade', and edit/pencil and more options icons. Below the navigation bar, the screen is divided into two main sections: 'SELLER' on the left and 'BUYER' on the right. The 'BUYER' section contains three input fields: 'Product' (with a horizontal line for input), 'Quantity' (with a horizontal line for input), and 'Description' (with a horizontal line for input). The background of the screen is white, and the overall design is clean and modern.

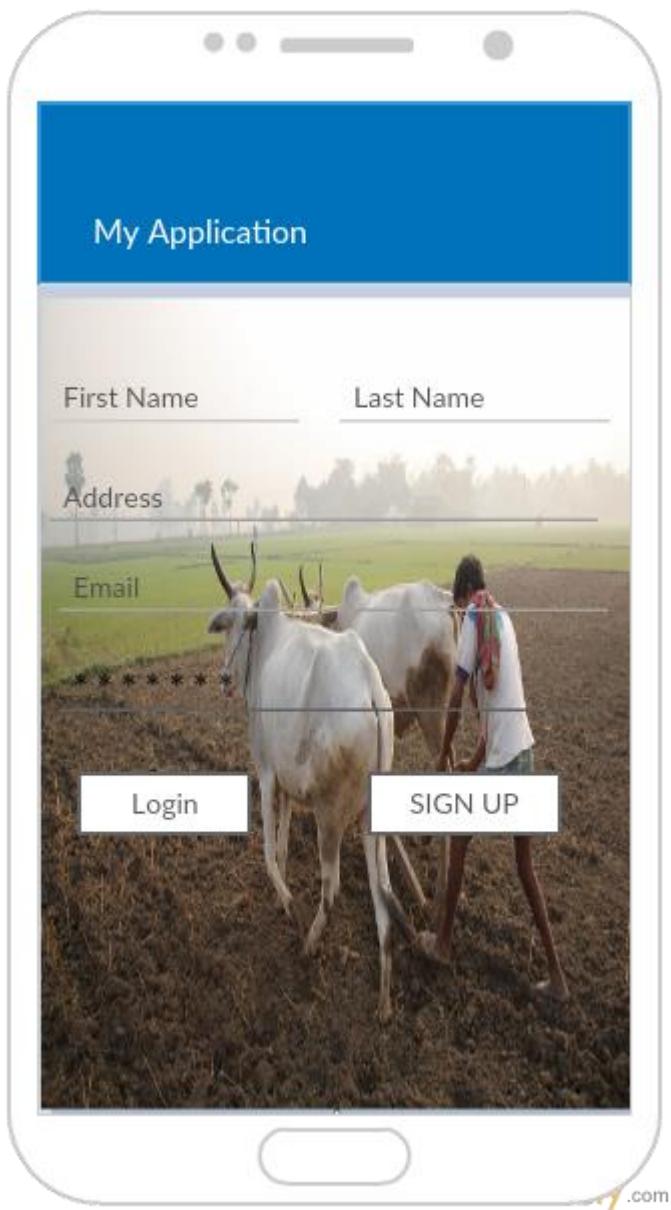
[online diagramming & design] **creately**.com

## **Mock Ups**

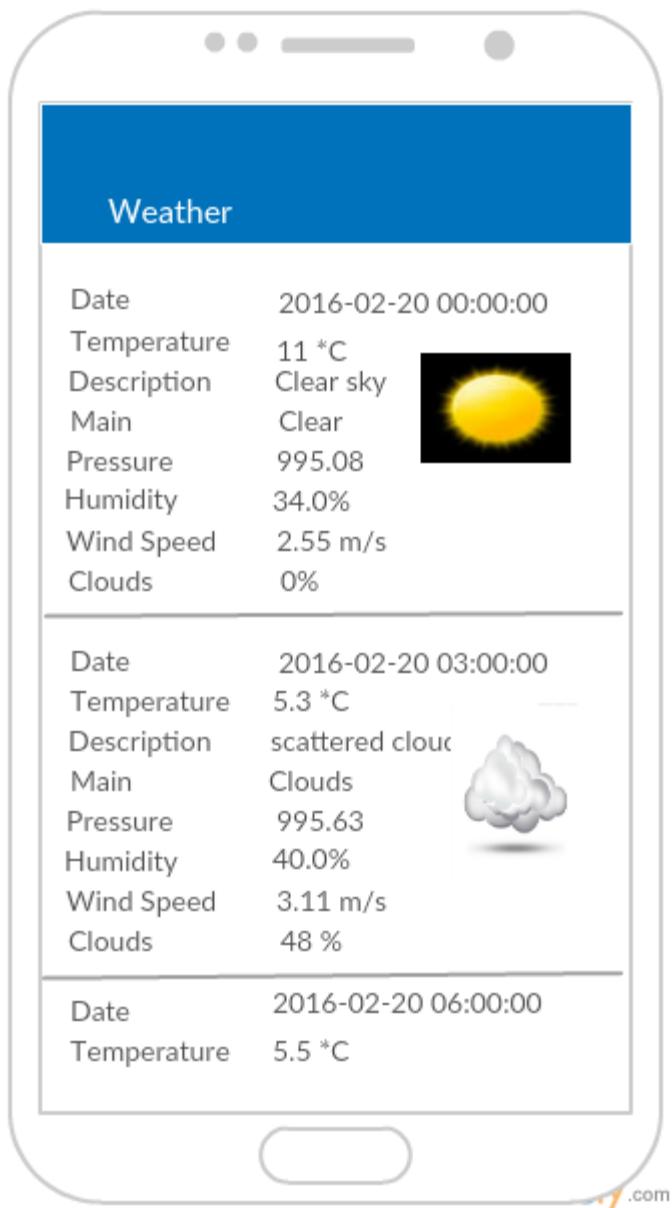
### **Login Page**



## Sign Up Page



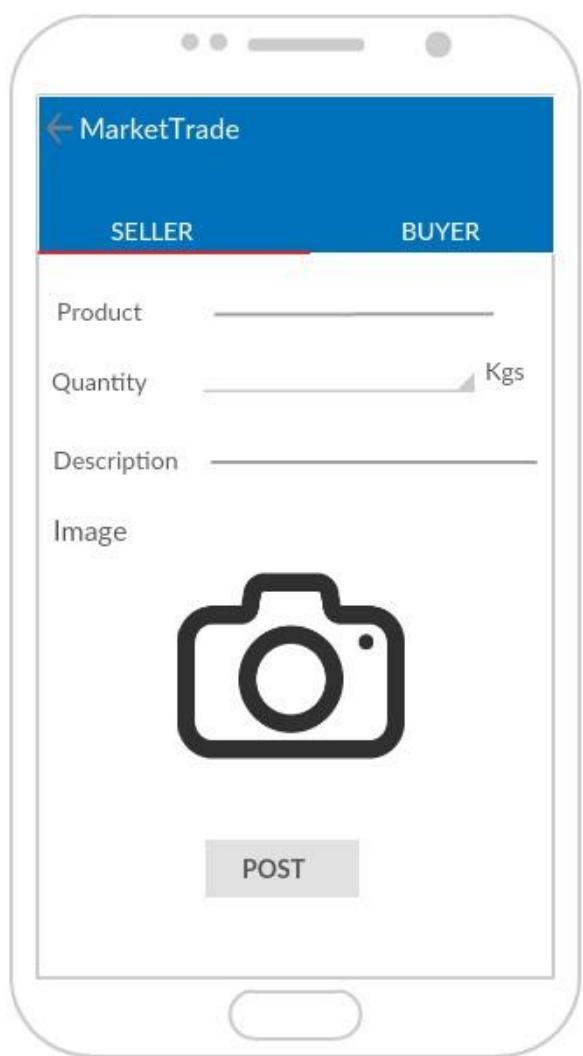
## Weather Page



## Home Screen Page



## Market Trade Page



## Market Locations



A smartphone screen showing a list of market locations. The screen has a blue header bar with the text "MarketLocations". Below the header, there are four entries, each consisting of three rows: Name, Address, and Distance.

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, 66062, United States
Distance	15.39 miles

## **Buyer Page**



## 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

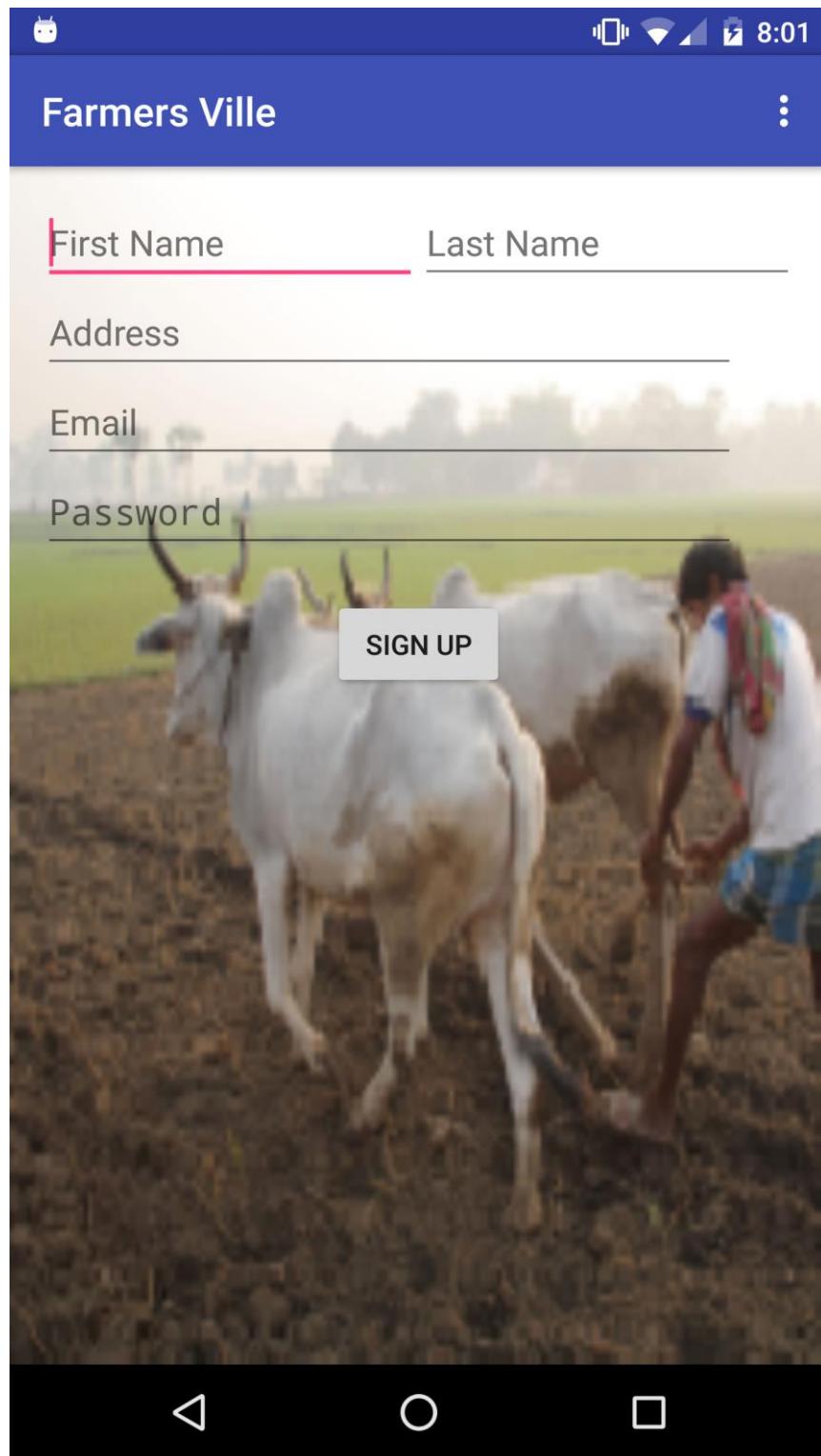
Testcase Name	Test Description	Expexted Result	Pass/Fail
Login	Enter invalid userid and valid password	invalid login error message should be displayed	Pass
	Enter valid userid and invalid password	invalid login error message should be displayed	Pass
	Enter valid userid and valid password	Application 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

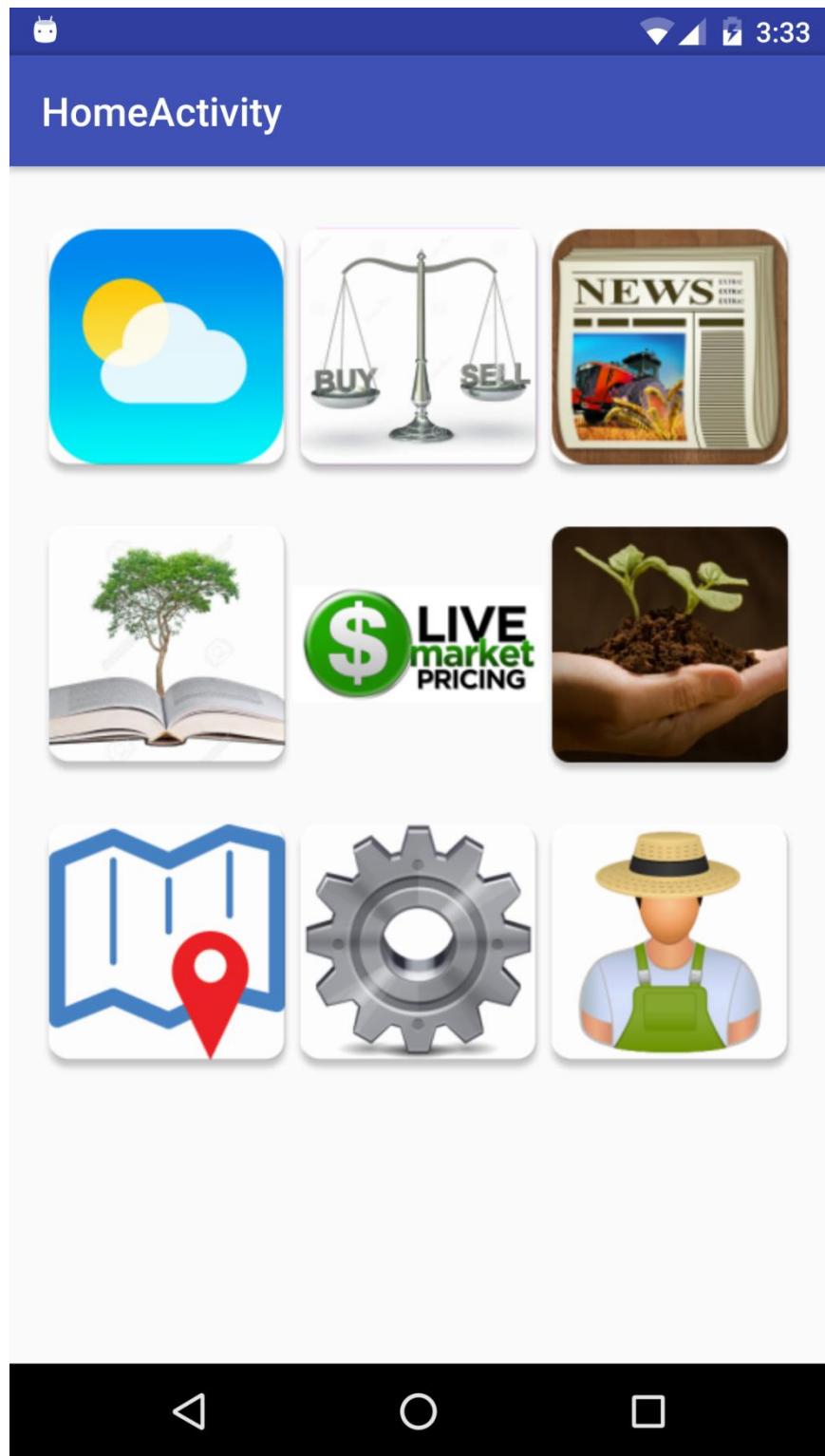
### Login page



## Signup Page



## 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 %

---

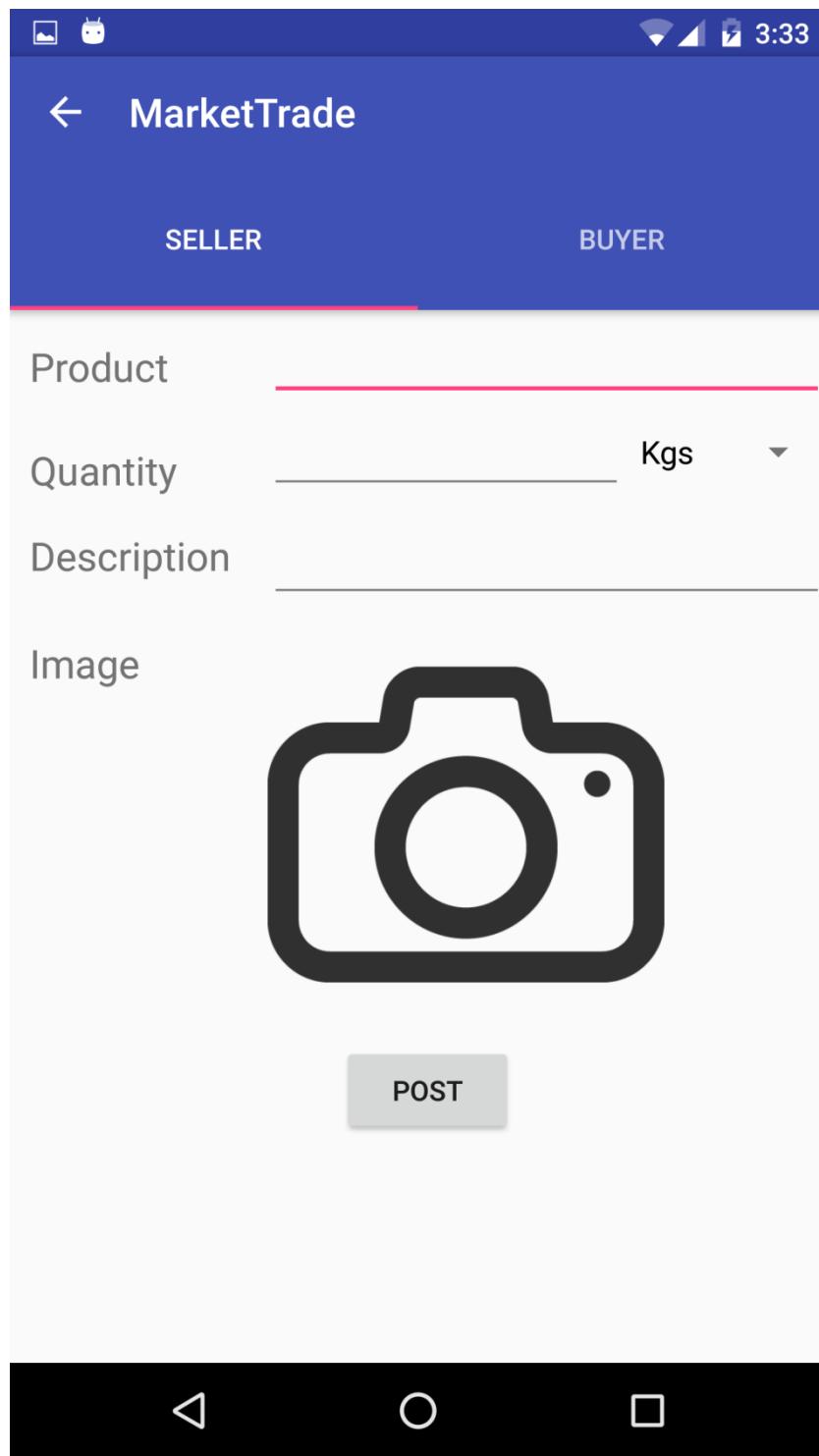
Date	2016-02-20 06:00:00
Temperature	5.5 °C
Description	broken clouds
Main	Clouds



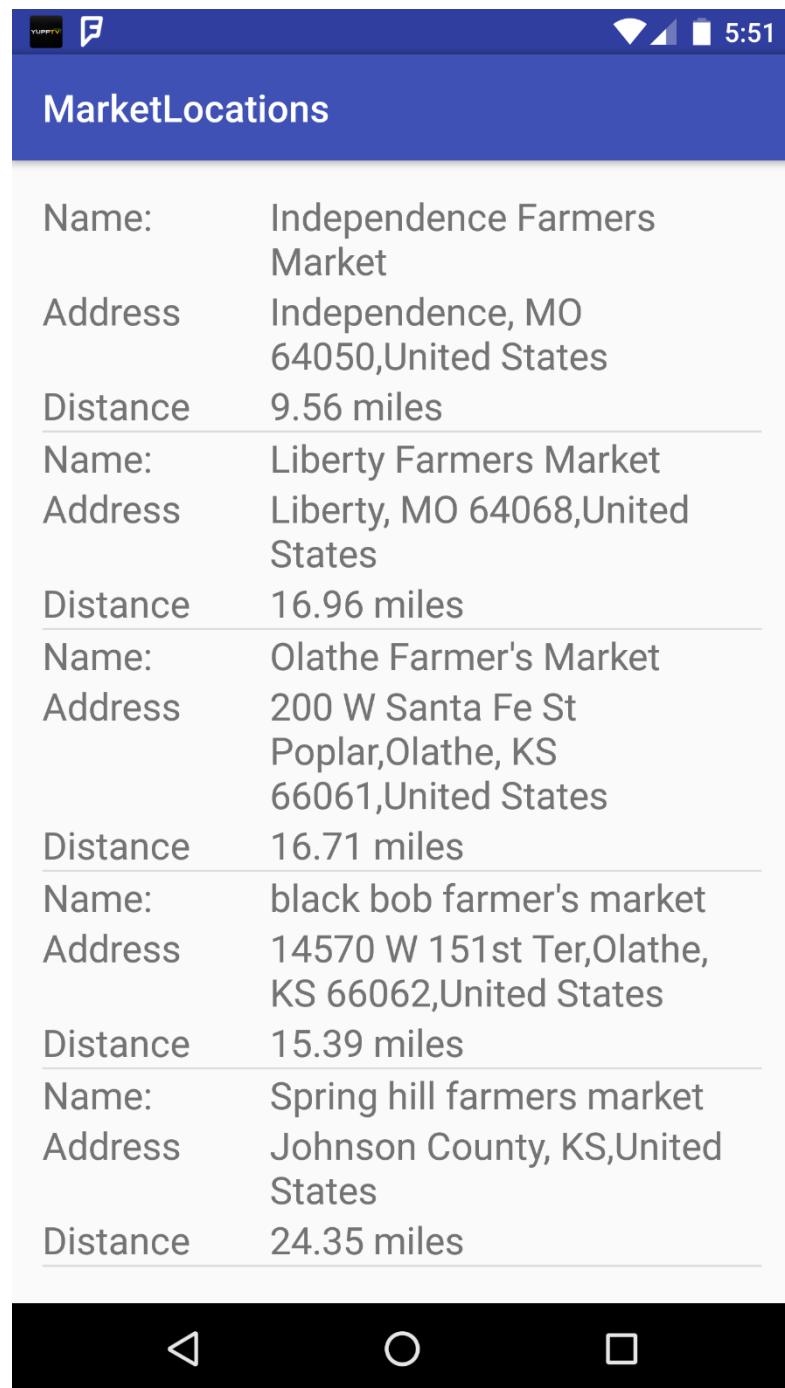




## Market Page



## Market Places Page



The screenshot shows a mobile application interface titled "MarketLocations". The top bar is blue with the title "MarketLocations" in white. Below the title, there is a list of five market entries, each consisting of three rows: Name, Address, and Distance. The entries are separated by horizontal lines. The bottom of the screen features a black navigation bar with three white icons: a triangle pointing left, a circle, and a square.

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: <input checked="" type="radio"/> list <input type="radio"/> table ( <a href="#">edit table view</a> )	<a href="#"></a>
records / page <input type="text" value="10"/> <a href="#"></a>	[1 - 8 of 8]
{ "_id": { "\$oid": "56e348aee4b0ced84db301fa" }, "Product": "corn", "Quantity": "3 kg", "Description": "super"	<a href="#"></a> <a href="#"></a>
{ "_id": { "\$oid": "56e35480e4b06f19d4b92882" }, "Product": "wheat", "Quantity": "5 kg", "Description": "excellant"	<a href="#"></a> <a href="#"></a>
{ "_id": { "\$oid": "56e366f2e4b06f19d4b9c0d5" }, "Product": "Maize", "Quantity": "2 kgs", "Description": "2nd grade"	<a href="#"></a> <a href="#"></a>
{ "_id": { "\$oid": "56e3672ee4b06f19d4b9c2dc" }, "Product": "Apple", "Quantity": "15 dozens",	<a href="#"></a> <a href="#"></a>



**CS551 Advance Software Engineering**

**THIRD INCREMENT REPORT**

**Farmers Ville**

**Group#11**

**Naga Krishna Vadlamudi (56)  
Manoj Prabhakar Ejjirothu (10)  
Sudheer Nagaruri (37)  
Pratap Kadari (20)**

# Project Proposal

**Project Title: Farmers Ville**

**Group number: 11**

**Group Members:**

9. Naga Krishna Vadlamudi (56)
10. Manoj Prabhakar Ejjirothu (10)
11. Sudheer Kumar Nagaruri (37)
12. 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:**

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

**System Features:**

19. **Marketing:** This app helps the farmers to sell his crop directly to the consumer.
20. **Market Locations:** This app will provide nearest market locations where farmer can sell his products.
21. **Market prices:** This app provides market prices of all agricultural products.
22. **News:** This app provides current agricultural news.
23. **Notification:** Notification of Availability of the products and feedback on the products sold
24. **Ratings :** Ratings can be given to all the products available for sale and for the products sold as well.
25. **Latest Trends and Technologies:** This app has the access to USDA's latest journals on Agriculture which have latest cultivation methods being used around the world.
26. **Suggestions:** This app guides farmers in selecting the Fertilizers and pesticides for particular crop.
27. **Weather Reports:** This app provides latest weather forecast updates to farmer based on his location, which helps the farmer in planning harvesting.

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- “Market Prices” by Agricharts API
- “Weather” by Open Weather API
- “News” by Agricharts API
- “Latest Journals” by USDA PubAg API

## Third Increment Report

As a part of the third increment we have implemented storing and retrieving images of crop in mongo db, implemented crop prices and fertilizer suggestion module by storing data in mongo db and retrieving that. Account specific module is not yet implemented.

### Features:

- 15. 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.
- 16. 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.
- 17. 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.
- 18. 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.
- 19. 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.
- 20. 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.
- 21. 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:**

- 11. 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.
- 12. 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.
- 13. Market Prices:** Current Agricultural products market prices are displayed using Agri Charts API.
- 14. Agriculture News:** Daily trending agriculture news is displayed using Agri Chart API. New specific to agricultural products like corn or wheat can be retrieved.
- 15. 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 3rd Increment:**

- API for the market prices ins not available for free, so have to manually store and retrieve the data from mongo DB.
- Integrating of the Account module with the other module is still an issue, we have to still find a solution for that.

### **Total Feature Implemented so far:**

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

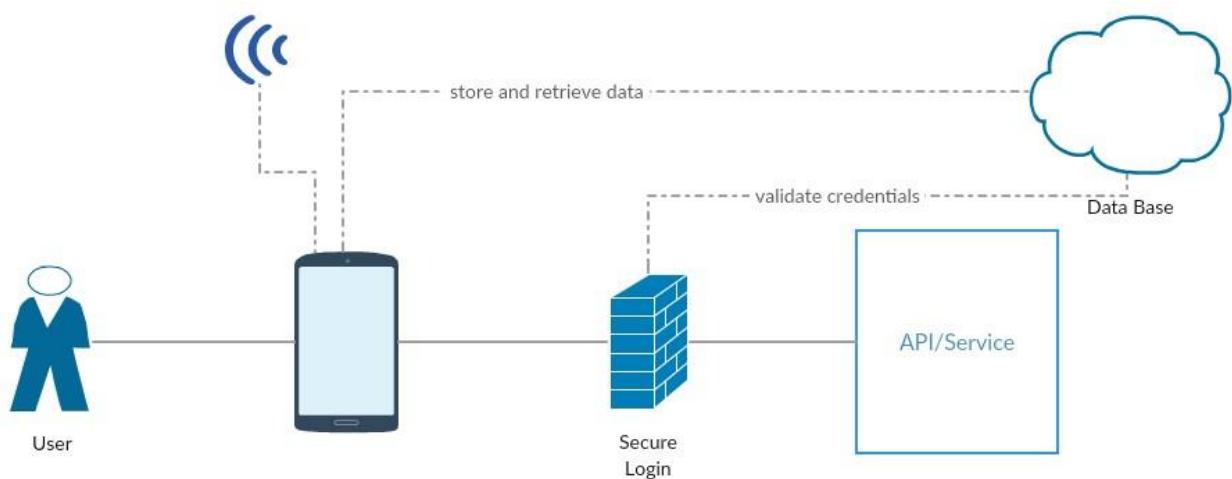
### **Features to be implemented:**

- Account Module
- Setting Module
- Trends and technologies

### **Improvements:**

- UI improvements on all modules

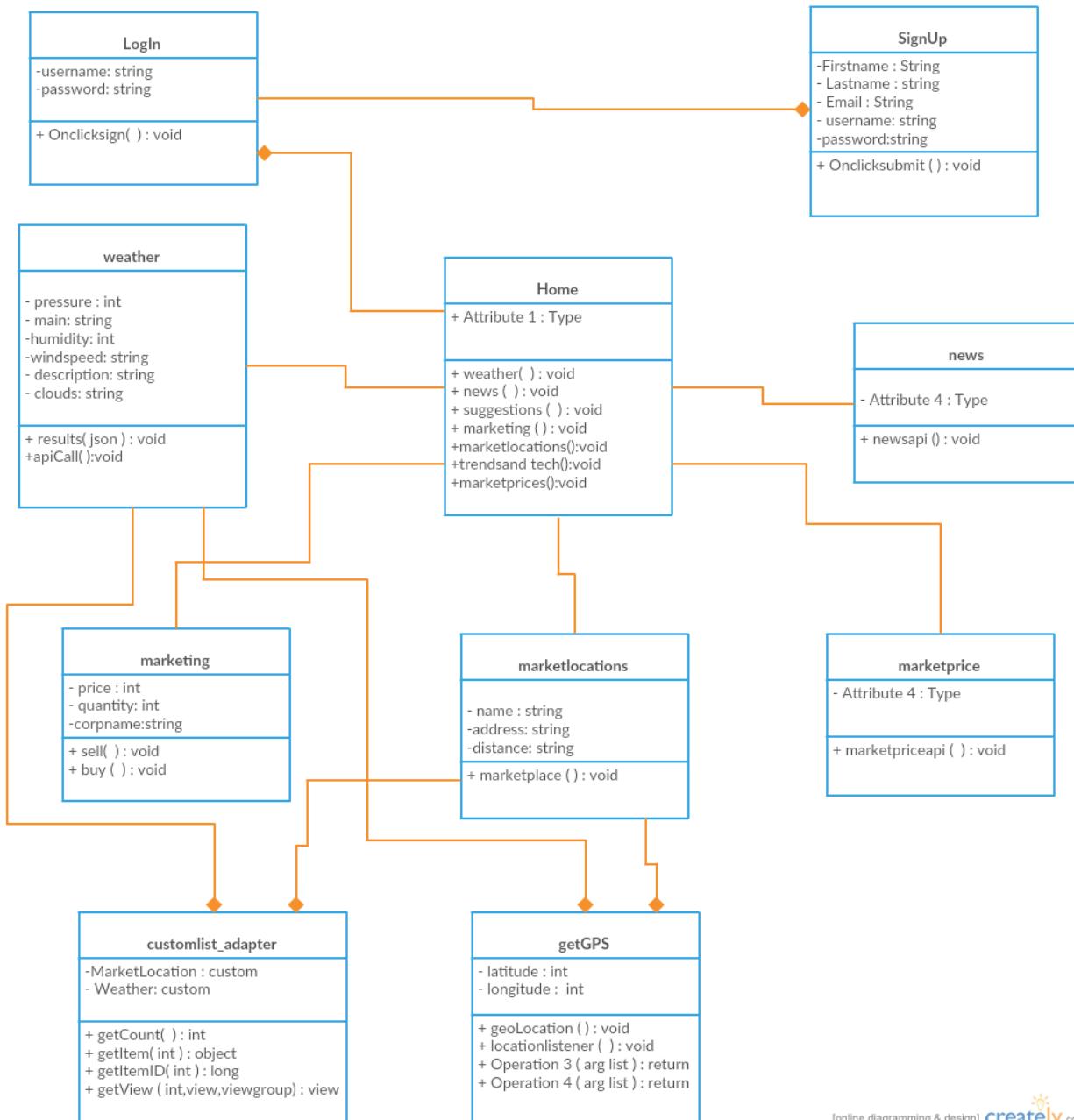
## Architecture Diagram



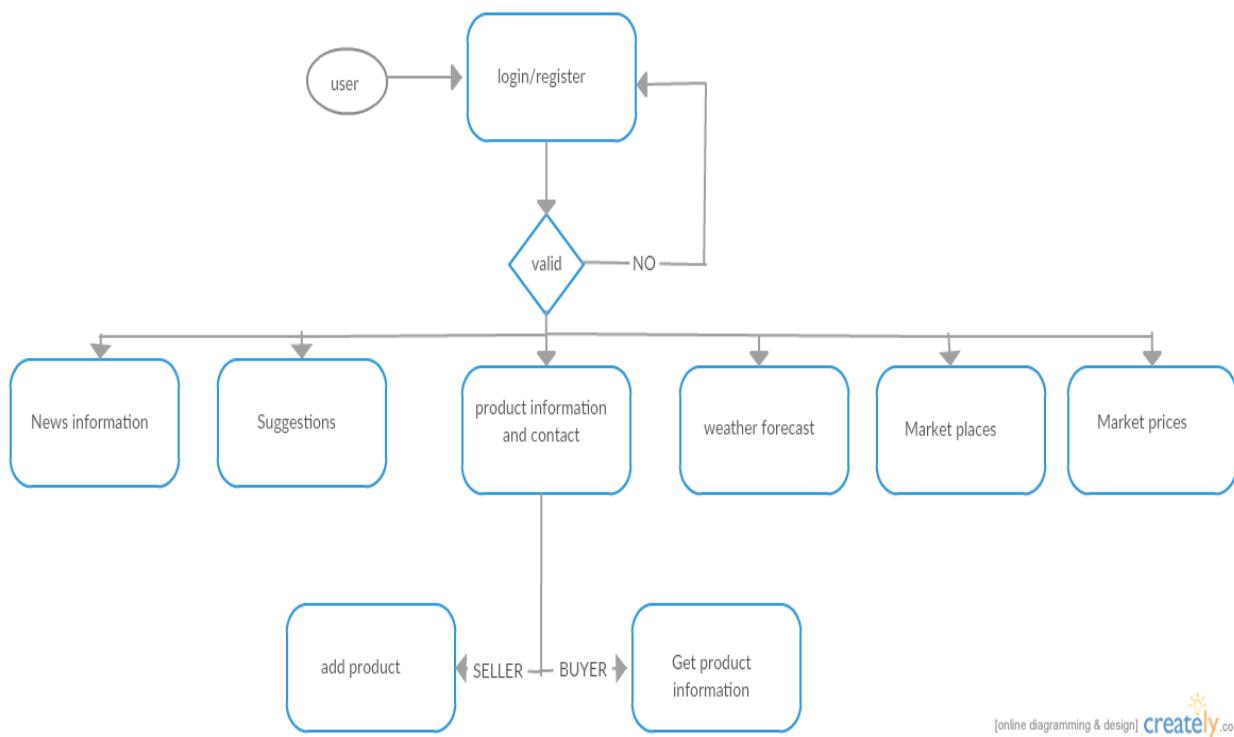
## Use Case Diagram



## Class Diagram:

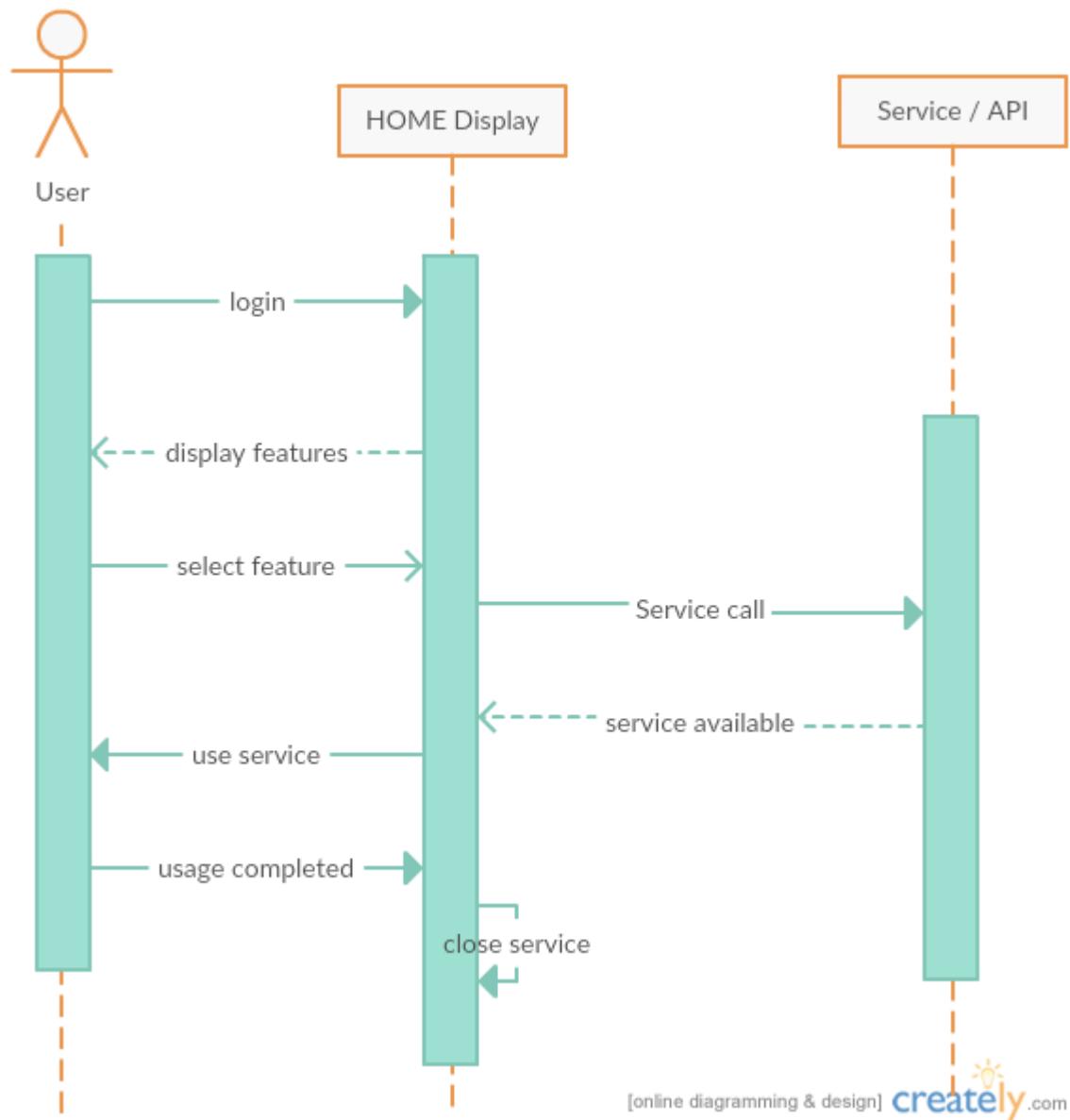


## Activity Diagram



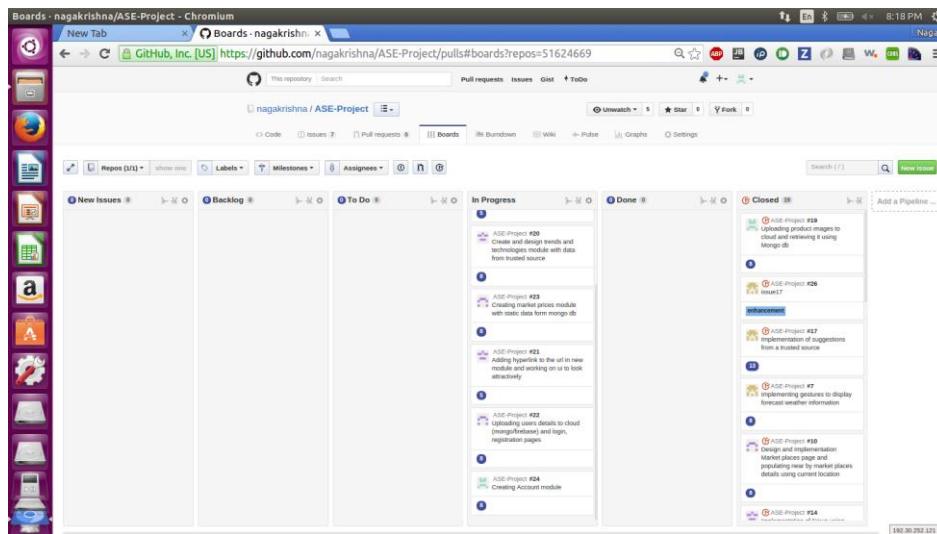
[online diagramming & design] **creately**.com

### 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 third increment. Milestone is created for fourth increment.

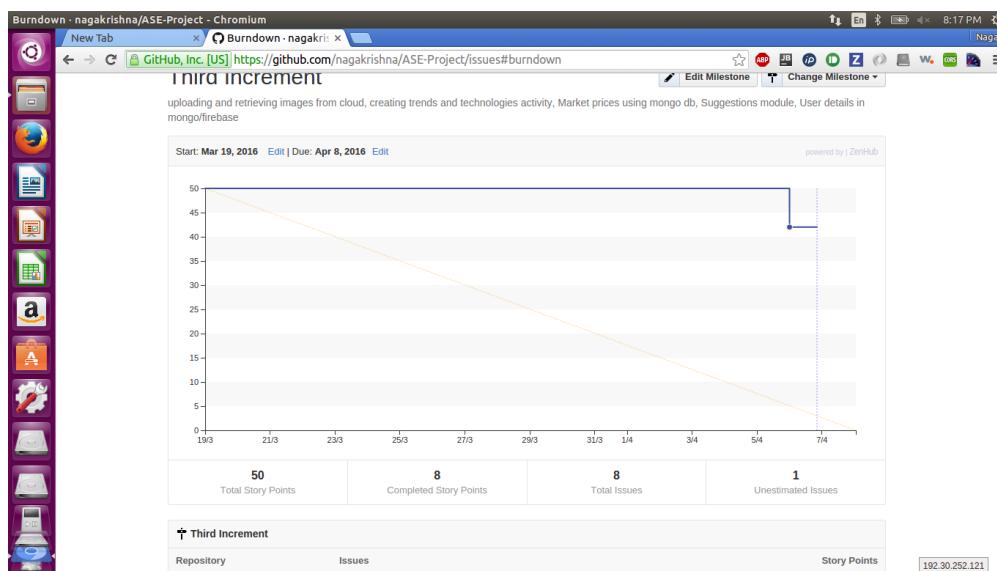


The screenshot shows a GitHub repository board titled "nagakrishna / ASE-Project". The board has five columns: "New Issues", "Backlog", "To Do", "In Progress", and "Done". The "Done" column contains several completed tasks, including:

- ASE-Project #29 Uploading product images to cloud and retrieving it using Mongo db
- ASE-Project #28 market27 enhancement
- ASE-Project #17 Implementation of suggestions from a external source
- ASE-Project #7 Implementing gestures to display forecast weather information
- ASE-Project #10 Creating Market place page and populating near by market places details using current location
- ASE-Project #14 Implementation of Firebase

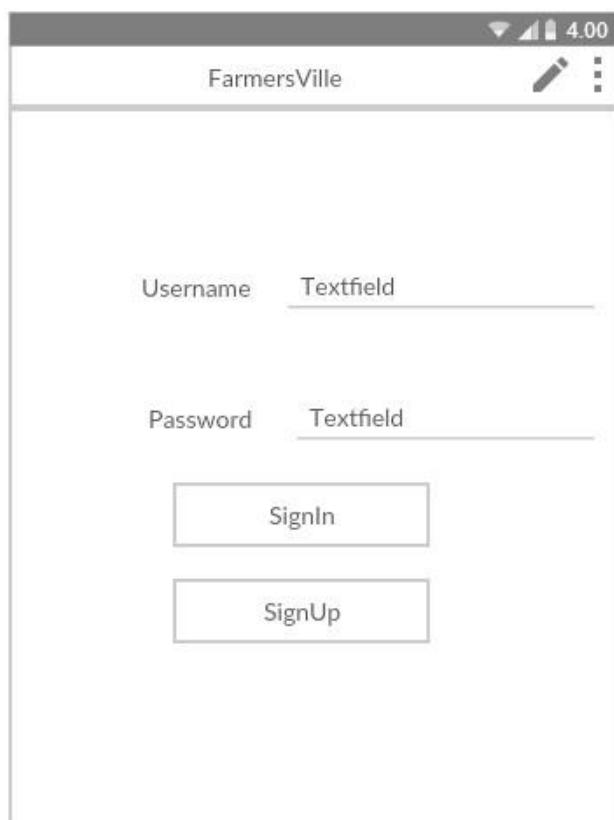
## Burn Down Graph

The burn down chart for the tasks assigned and the completed tasks. The Third increment has to be completed by 04/06 . By the end of the task completion we got the above burn down chart.

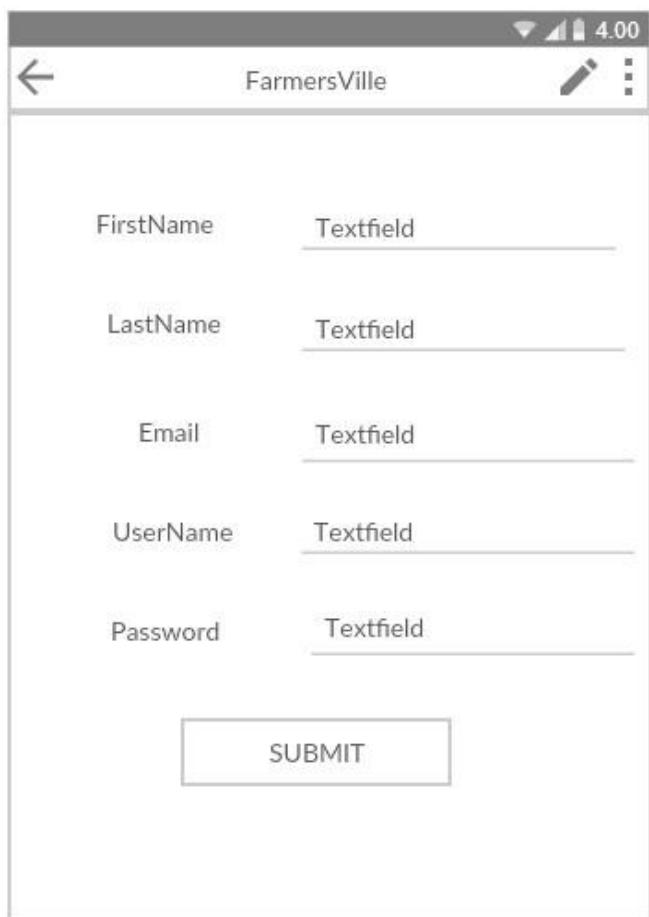


## Wire Frames

### Login Page



## Sign Up Page



## Market Trade Page



## Application Home Page

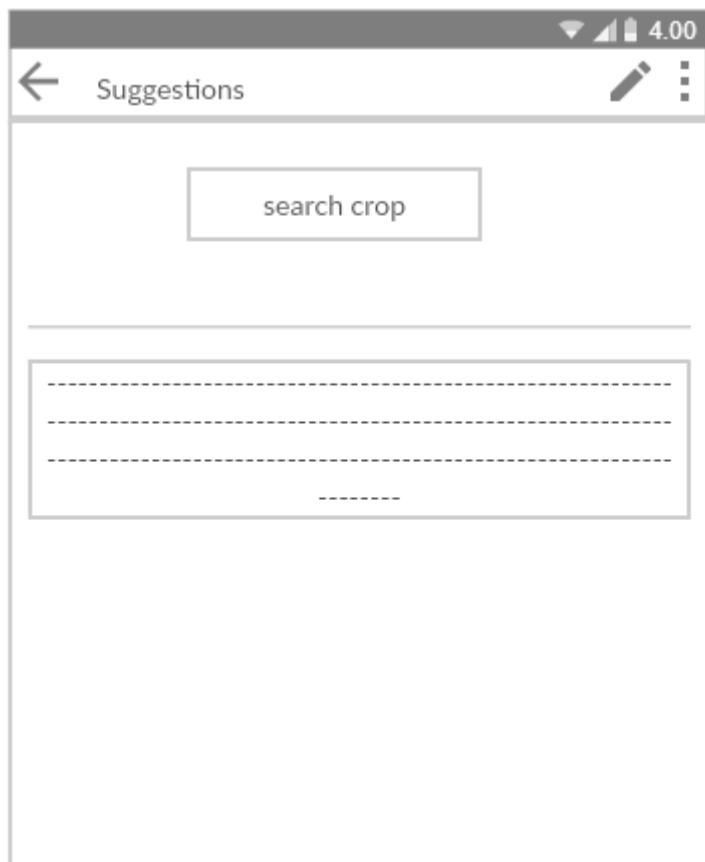


## **Weather Page**

The screenshot shows a mobile application interface with a header bar at the top containing a back arrow, the word "Weather", a pencil icon for editing, and a three-dot menu icon. The main area is divided into three horizontal sections, each representing a set of weather data. Each section has three fields: "Date", "Temp", and "Humidity", each with its own input line.

Date	Temp	Humidity

## Suggestions



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### Market Locations Page

The screenshot displays a mobile application interface for managing market locations. The top portion of the screen features a grey header bar with a back arrow on the left, the title "Marketlocations" in the center, and a toolbar with a pencil icon for editing and a three-dot menu icon on the right. Below the header, there are two sets of input fields, each consisting of three horizontal lines for text entry. The first set is labeled "Name", "Address", and "Distance". The second set is also labeled "Name", "Address", and "Distance". The entire interface is presented within a light grey rectangular frame.

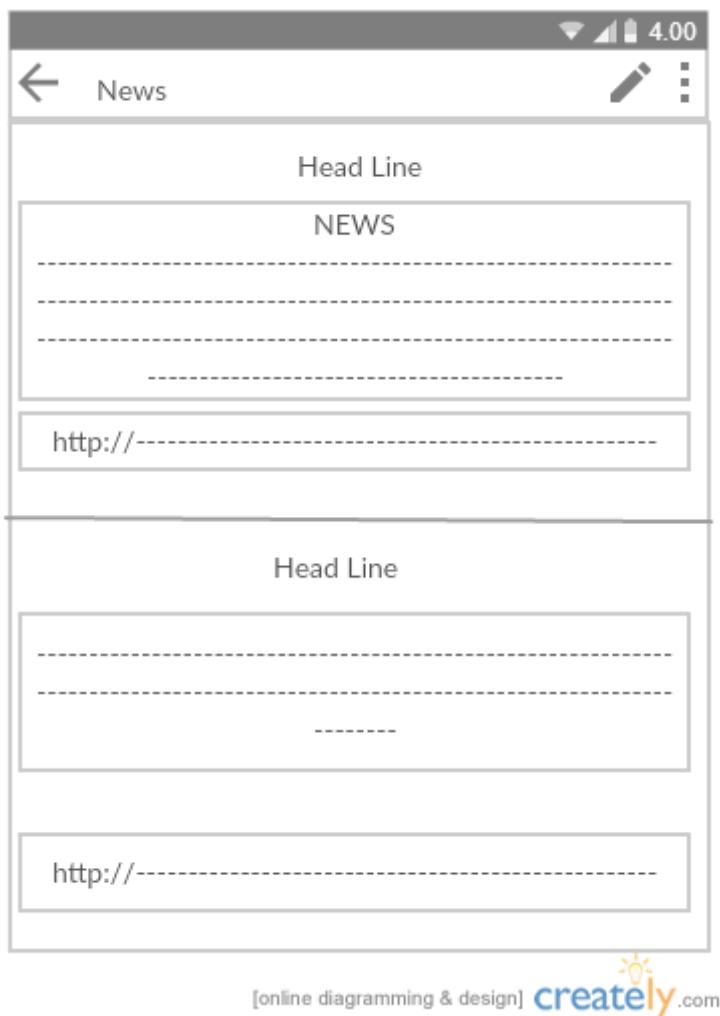
[online diagramming & design]  .com

## Buyer Page

The image shows a mobile application interface for 'MarketTrade'. At the top, there is a navigation bar with a back arrow, the app name 'MarketTrade', a pencil icon for editing, and a three-dot menu icon. Below the navigation bar, the screen is divided into two main sections: 'SELLER' on the left and 'BUYER' on the right. The 'BUYER' section contains three input fields: 'Product' with a horizontal line for text entry, 'Quantity' with a horizontal line for text entry, and 'Description' with a horizontal line for text entry.

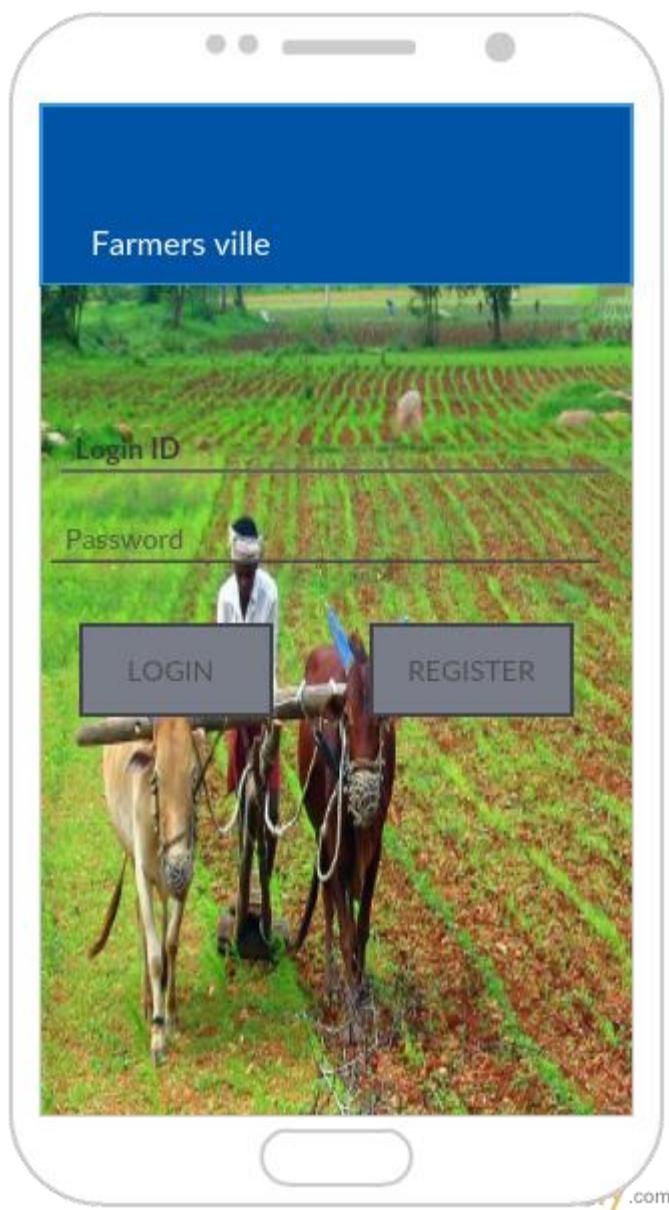
[online diagramming & design] **creately**.com

## News Module

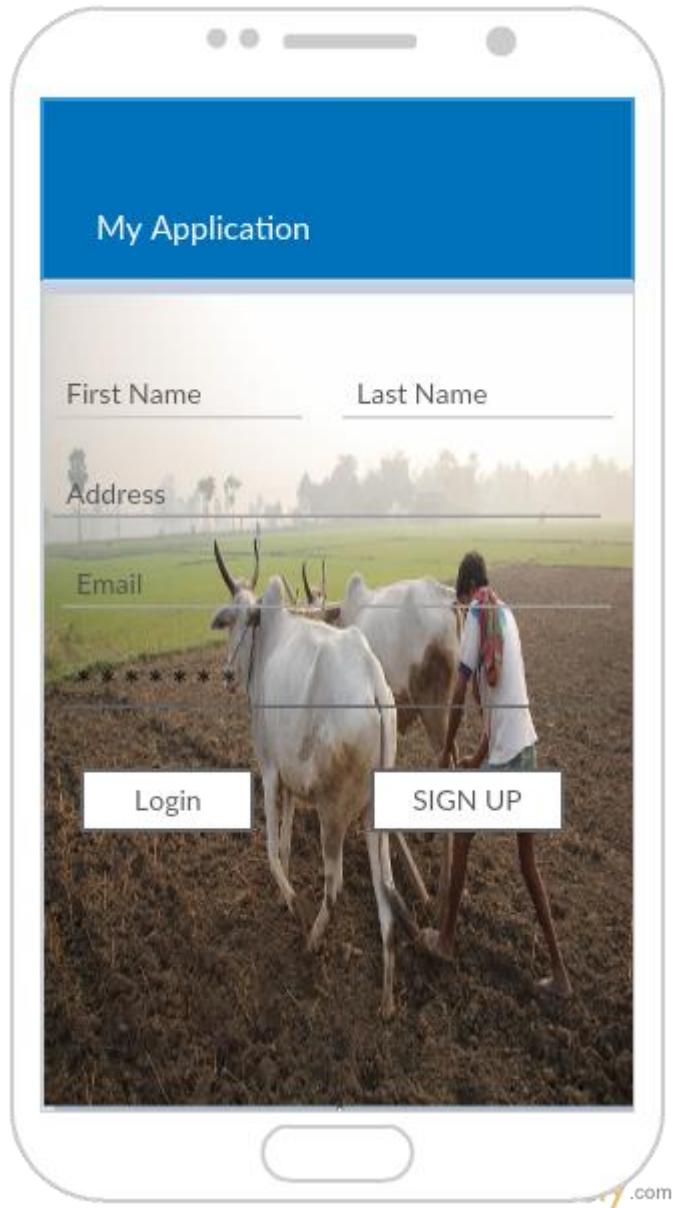


## Mock Ups

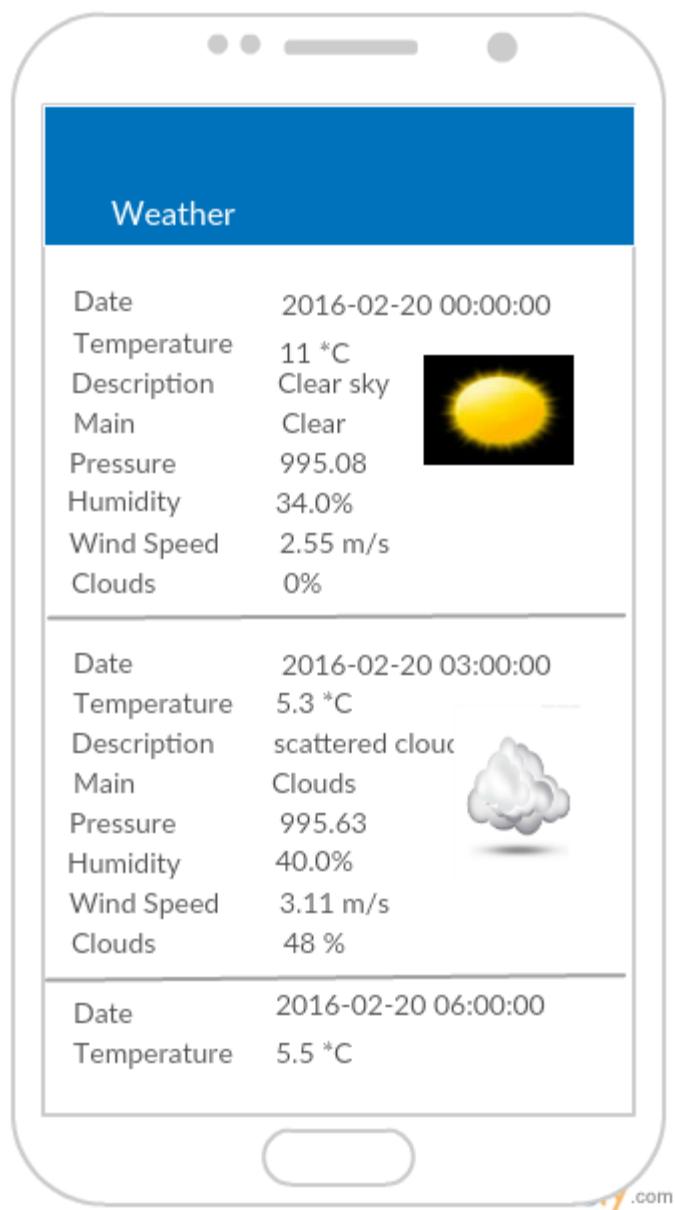
### Login Page



## Sign Up Page



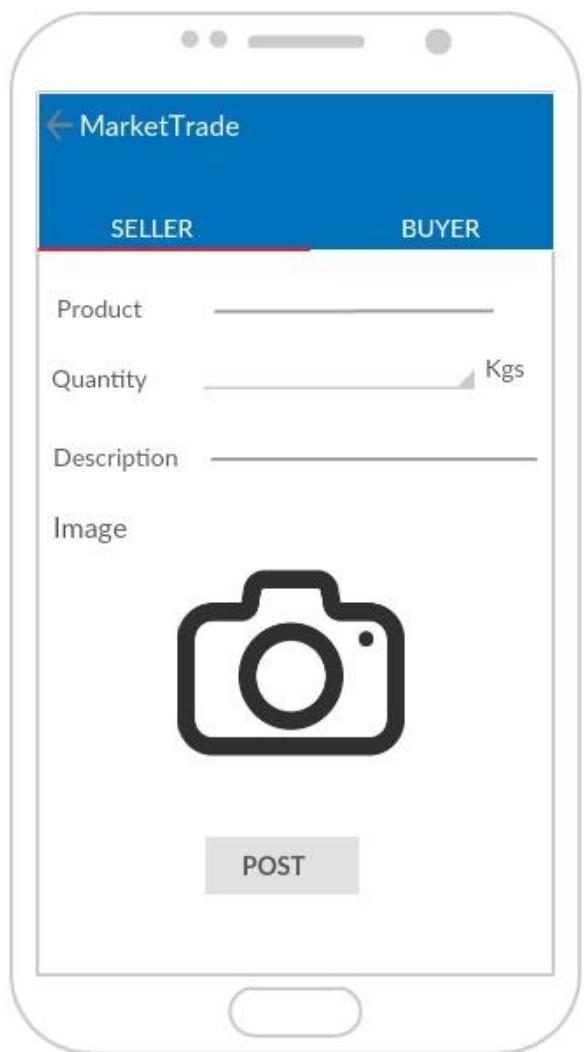
## Weather Page



## Home Screen Page



## Market Trade Page



## **Market Locations**



**Buyer Page**



## MarketTrade Page



## **News Activity Page**



## 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

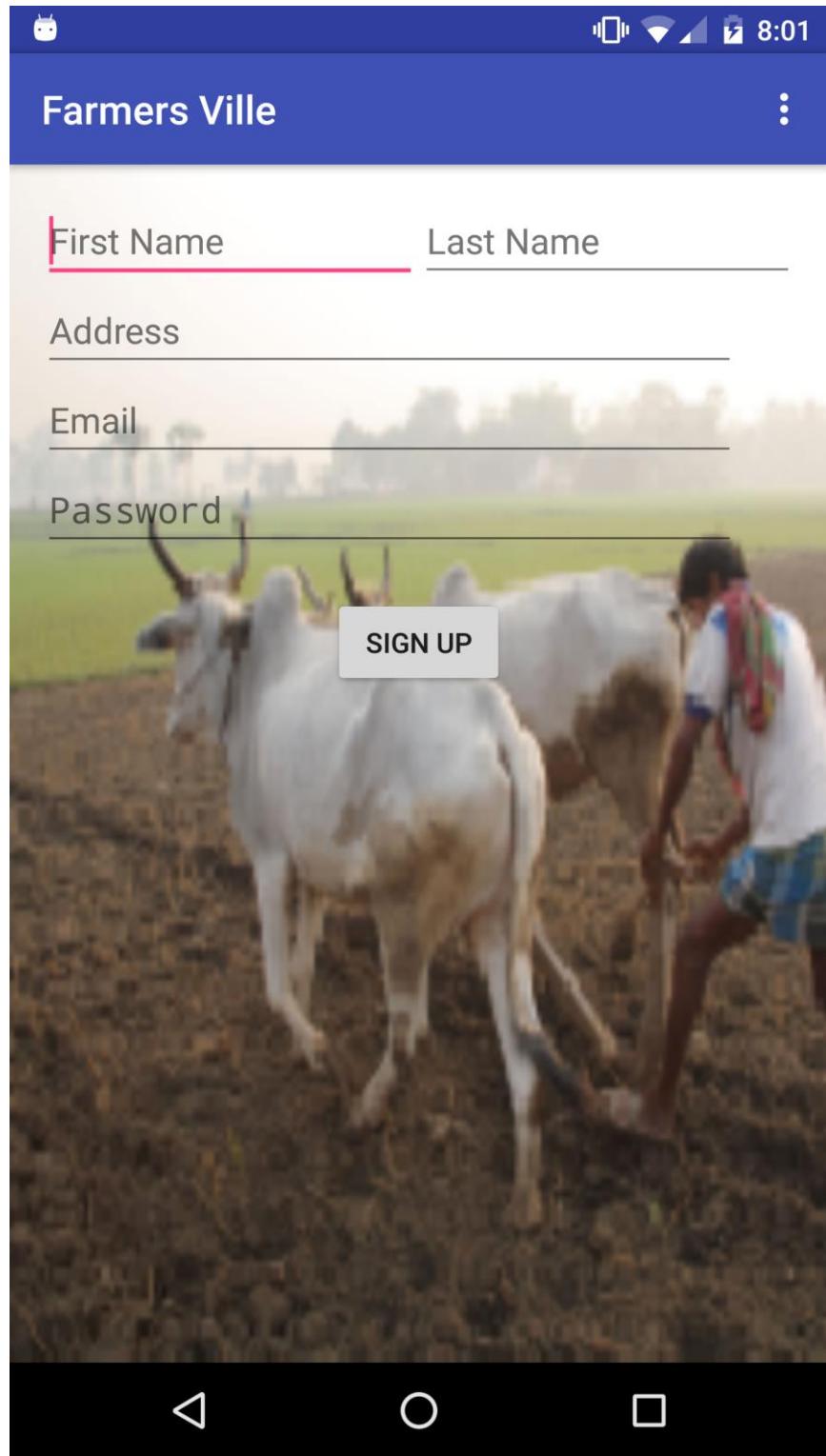
Testcase Name	Test Description	Expexted Result	Pass/Fail
Login	Enter invalid userid and valid password	invalid login error message should be displayed	Pass
	Enter valid userid and invalid password	invalid login error message should be displayed	Pass
	Enter valid userid and valid password	Application 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
News	click on the news button	latest agricultural news will be populated	Pass
Suggestions	click on the suggestions button	search option for crop data will be populated	Pass

## Final Screen Shots

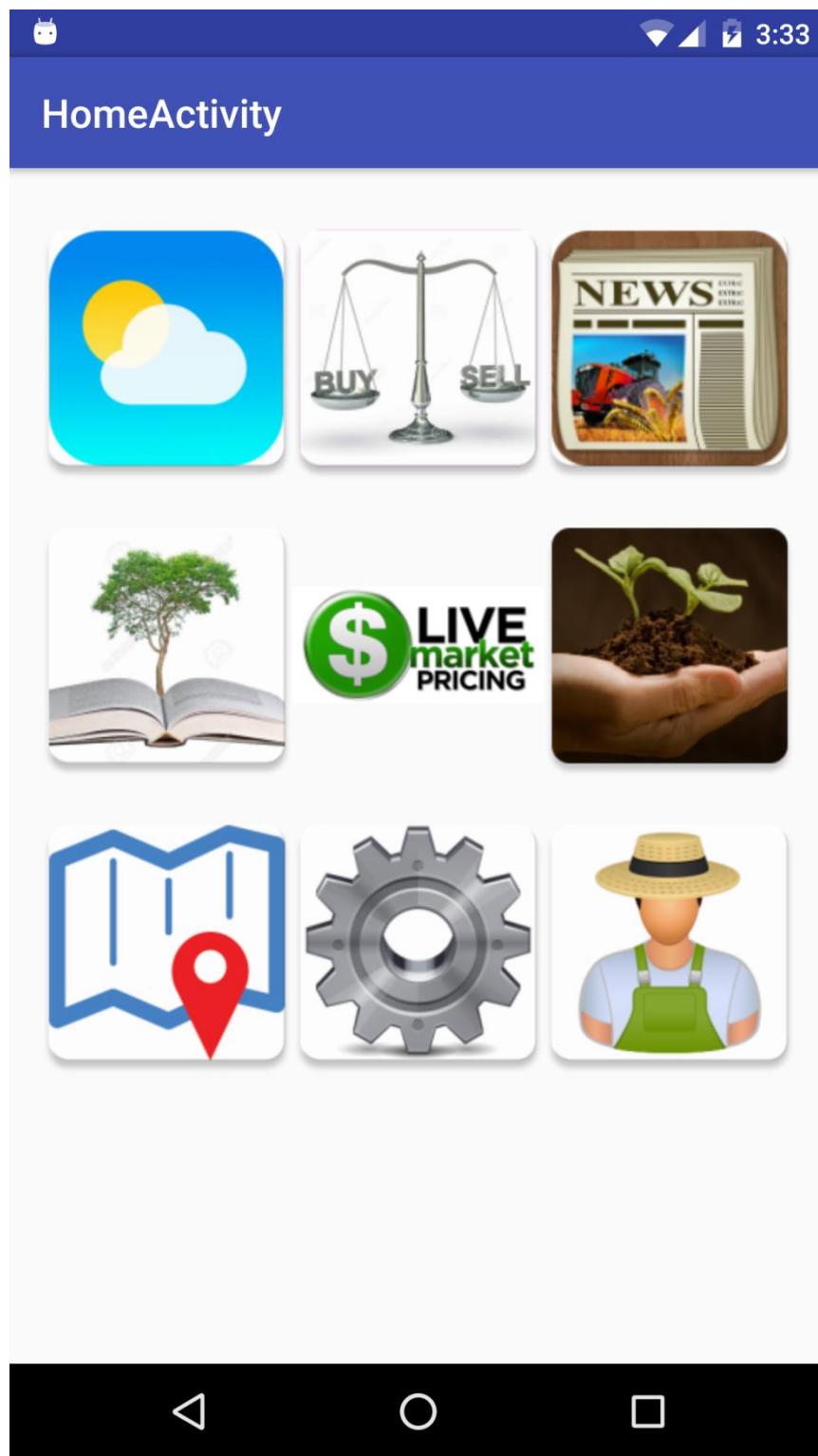
### Loginpage



## Signup Page



## 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 %

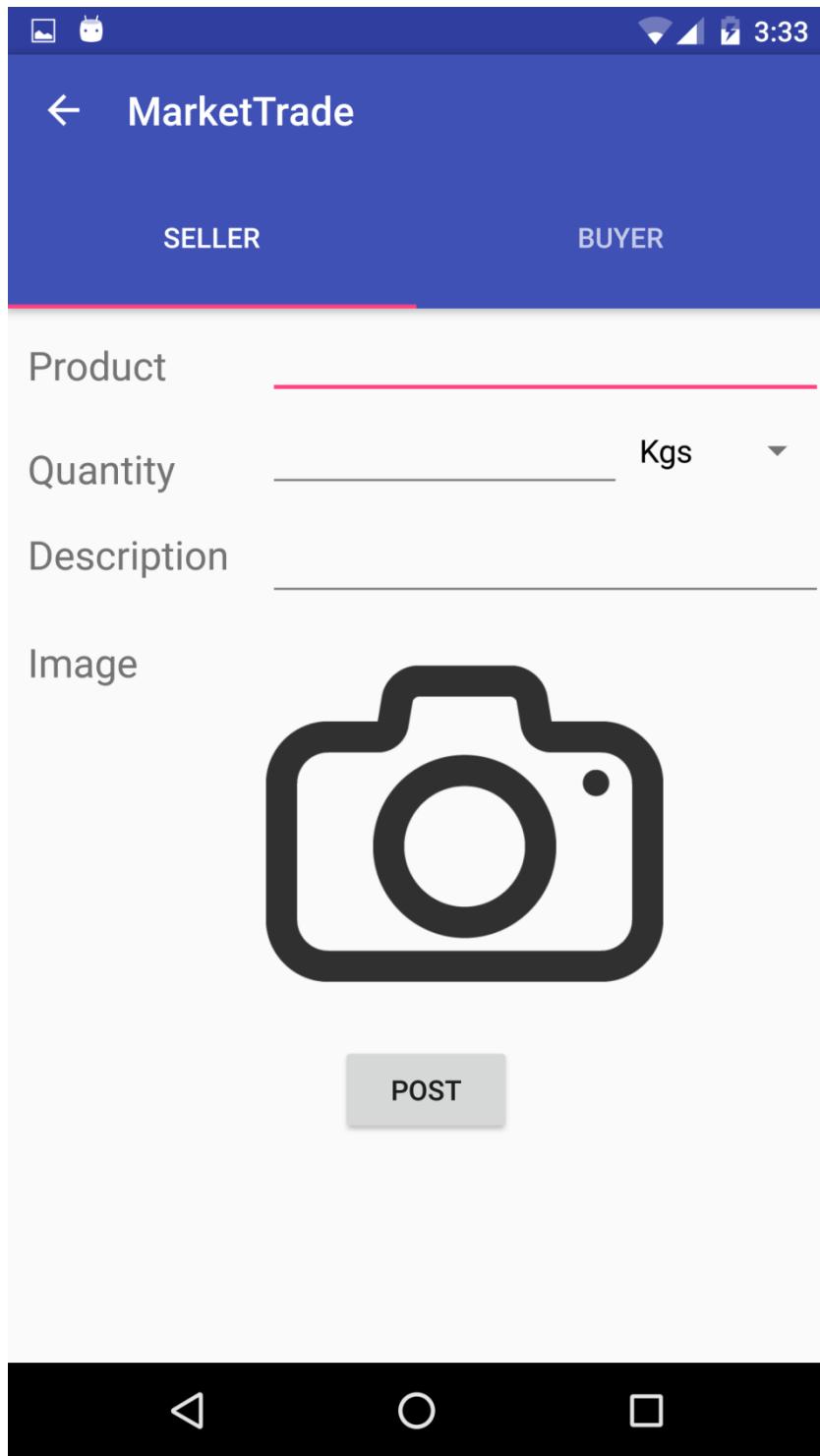
---

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

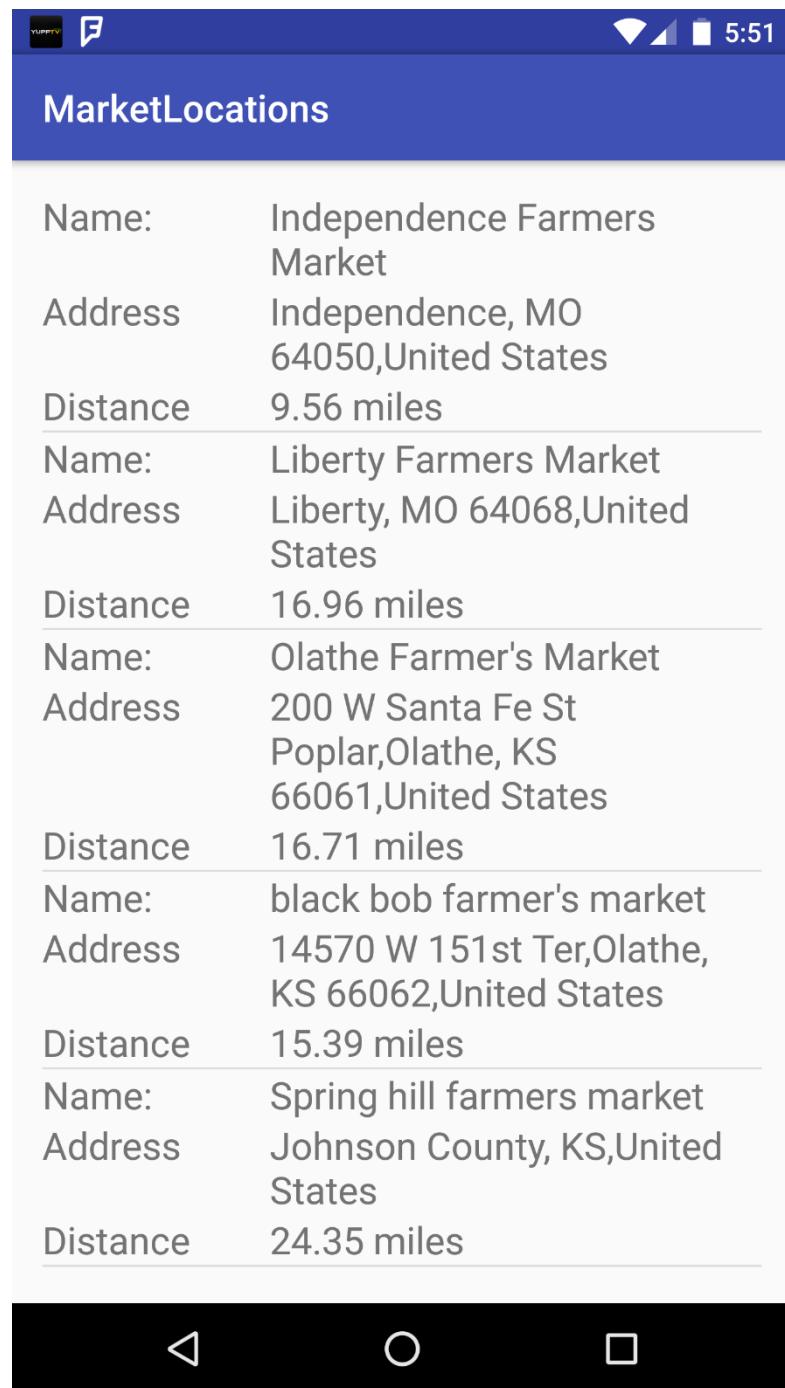
◀ ○ □



## Market Page



## Market Places Page



The screenshot shows a mobile application interface titled "MarketLocations". The top bar is blue with the title "MarketLocations" in white. Below the title, there is a list of five market entries, each consisting of three rows: Name, Address, and Distance. The entries are separated by horizontal lines. The bottom of the screen features a black navigation bar with three white icons: a triangle pointing left, a circle, and a square.

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]

The screenshot shows a list of four MongoDB documents. Each document is represented by a horizontal row containing the document's JSON structure, a vertical scroll bar, and a set of edit and delete icons on the right.

- ```
{  
  "_id": {  
    "$oid": "56e348aee4b0ced84db301fa"  
  },  
  "Product": "corn",  
  "Quantity": "3 kg",  
  "Description": "super"
```
- ```
{  
  "_id": {  
    "$oid": "56e35480e4b06f19d4b92882"  
  },  
  "Product": "wheat",  
  "Quantity": "5 kg",  
  "Description": "excellant"
```
- ```
{  
  "_id": {  
    "$oid": "56e366f2e4b06f19d4b9c0d5"  
  },  
  "Product": "Maize",  
  "Quantity": "2 kgs",  
  "Description": "2nd grade"
```
- ```
{  
  "_id": {  
    "$oid": "56e3672ee4b06f19d4b9c2dc"  
  },  
  "Product": "Apple",  
  "Quantity": "15 dozens",  
  "Description": "Organic"
```

## Retrieving data from mongo DB

MarketTrade		
SELLER	BUYER	
Quantity	hd	
Description	hd	
Date	sandeep	
Quantity	sandy	
Description	sandy	
Date	Naga: This is just for sample testing.....checking length	
Quantity	Naga: This is just for sample testing.....checking length	
Description	Naga: This is just for sample testing.....checking length	
Date	corn	
Quantity	2 kg	
Description	good	

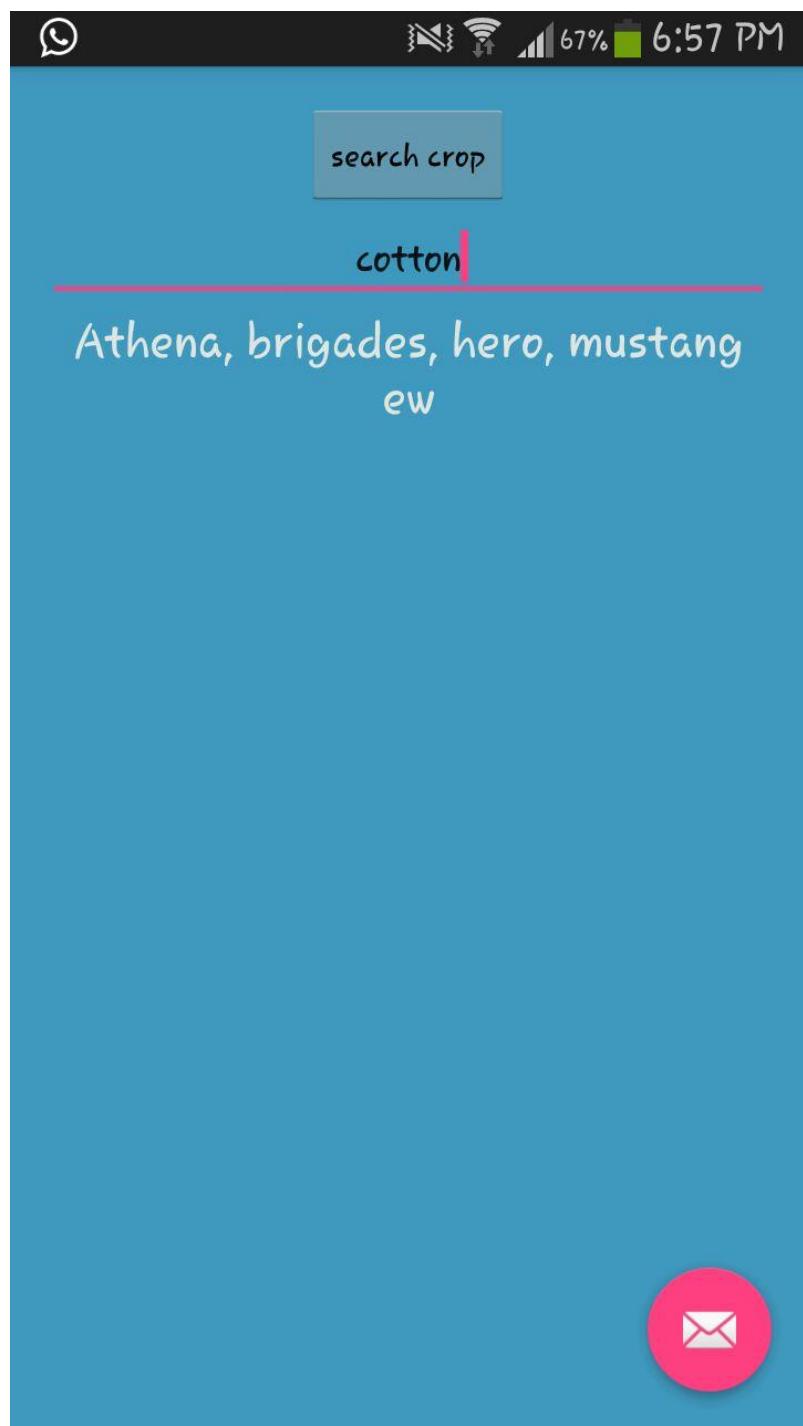
## News Module

The screenshot shows a mobile application interface with a blue header bar. The title "NewsActivity" is displayed on the left, and a three-dot menu icon is on the right. The main content area displays three news articles:

- Texas Connects Us: The First Pitch**  
Every day is a big day when you're 105 years old. "Yes, I'm ready," joked Elizabeth Sullivan. ...  
<http://www.nbcdfw.com/news/local/Texas-Connects-The-First-Pitch-374825811.html>
- Davis biotech firm plants seeds of revival after accounting scandal | The Sacramento Bee**  
This is all Pam Marrone has ever wanted to do: Develop natural pesticides and other products to help crops flourish without wrecking the environment. "My life's work," she said, more than once, during a recent interview. Good thing she feels passionate about it. ...  
<http://www.sacbee.com/news/business/article70358552.html>
- Monsanto Chief Says No to Big Deals**  
Monsanto Co. said it has abandoned efforts to pursue large-scale deals, instead charting an independent path amid a steep downturn in the agricultural business. The shift follows Monsanto's failure to snare Swiss rival Syngenta AG and comes as several competitors pursue their own mergers, though investors expressed relief that Monsanto wouldn't overpay to strike its own deal. ...  
<http://www.nasdaq.com/article/monsanto-chief-says-no-to-big-deals-20160406-00853>

At the bottom of the screen are standard Android navigation icons: a triangle pointing left, a circle, and a square.

## Suggestion Module





**CS551 Advance Software Engineering**

**FOURTH INCREMENT REPORT**

**Farmers Ville**

**Group#11**

**Naga Krishna Vadlamudi (56) Manoj**

**Prabhakar Ejjirothu (10) Sudheer**

**Nagaruri (37)**

**Pratap Kadari (20)**

# Project Proposal

**Project Title:** Farmers Ville

**Group number:** 11

## **Group Members:**

1. Naga Krishna Vadlamudi (56)
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

## Fourth Increment Report

As a part of the Fourth increment we have implemented the chat application between the users and User Account Settings. Implemented the Current Market prices of the vegetables with notification of any change in the prices. We have also added the feature of the hyperlinks to the currents trends technology and the pesticides module.

### **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 is 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 former 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. News 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>

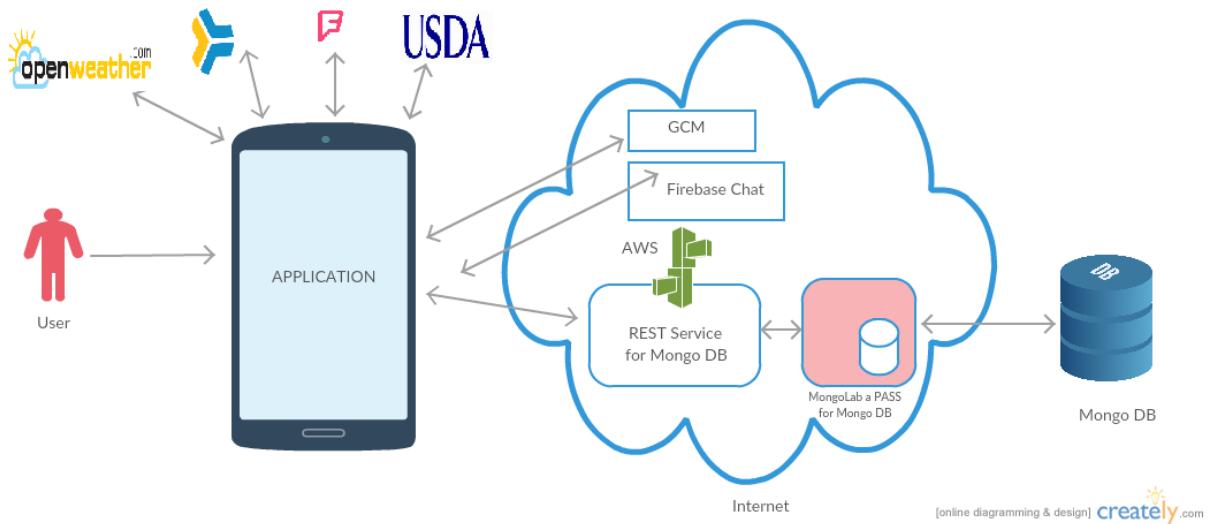
### **Challenges Faced during 4th Increment:**

- For Push notification we had to use the Google Cloud Messaging Services.
- Creating Chat Application using the Fire Base was complex.

### **Total Feature Implemented so far:**

- Weather Forecast
- Market Places Location Details
- Login and Register Pages
- Buyer and Seller Module
- Suggestions
- News
- Market Prices with notification
- User Account Settings
- Trends and Technologies
- Pesticides

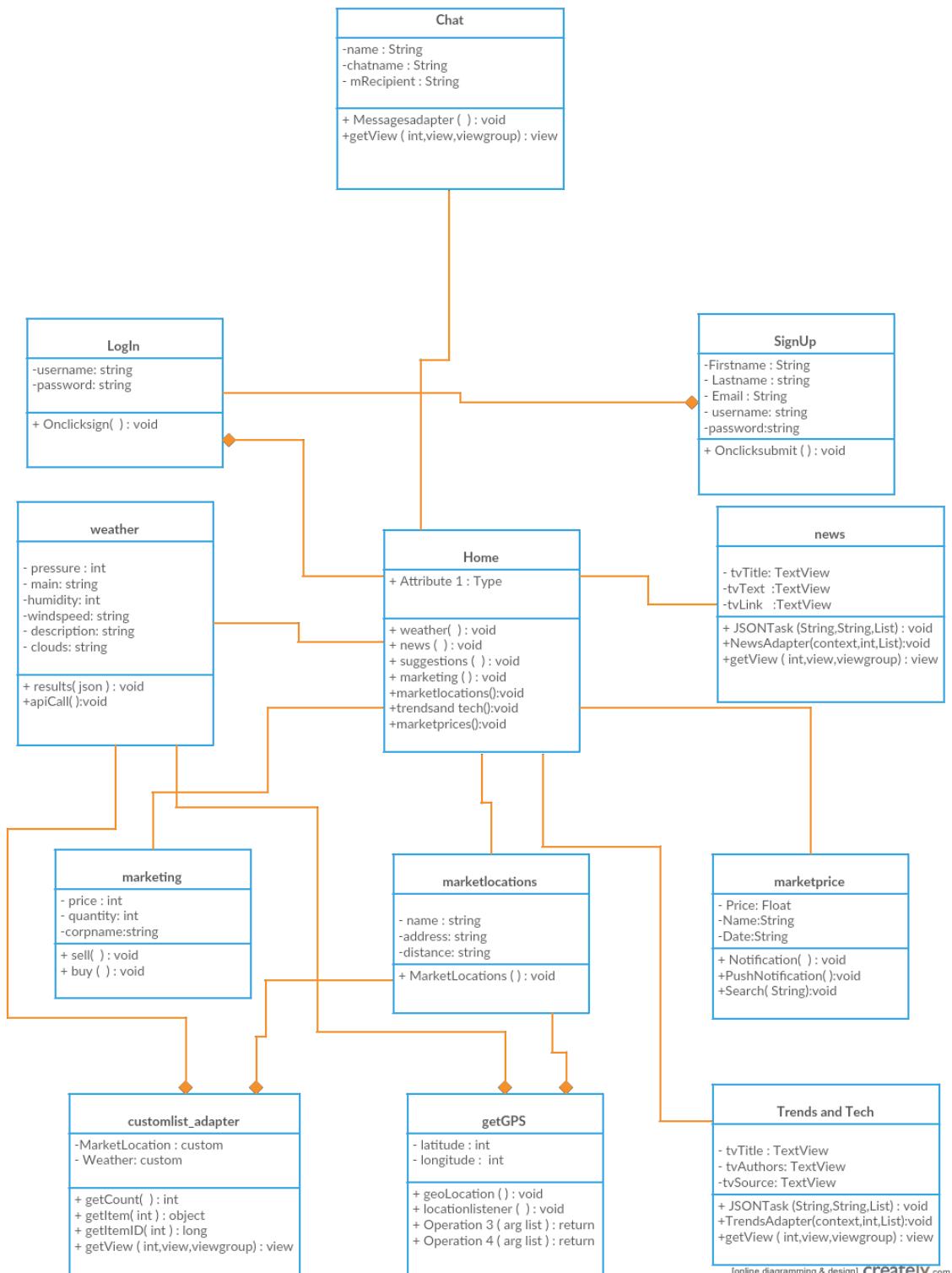
## Architecture Diagram



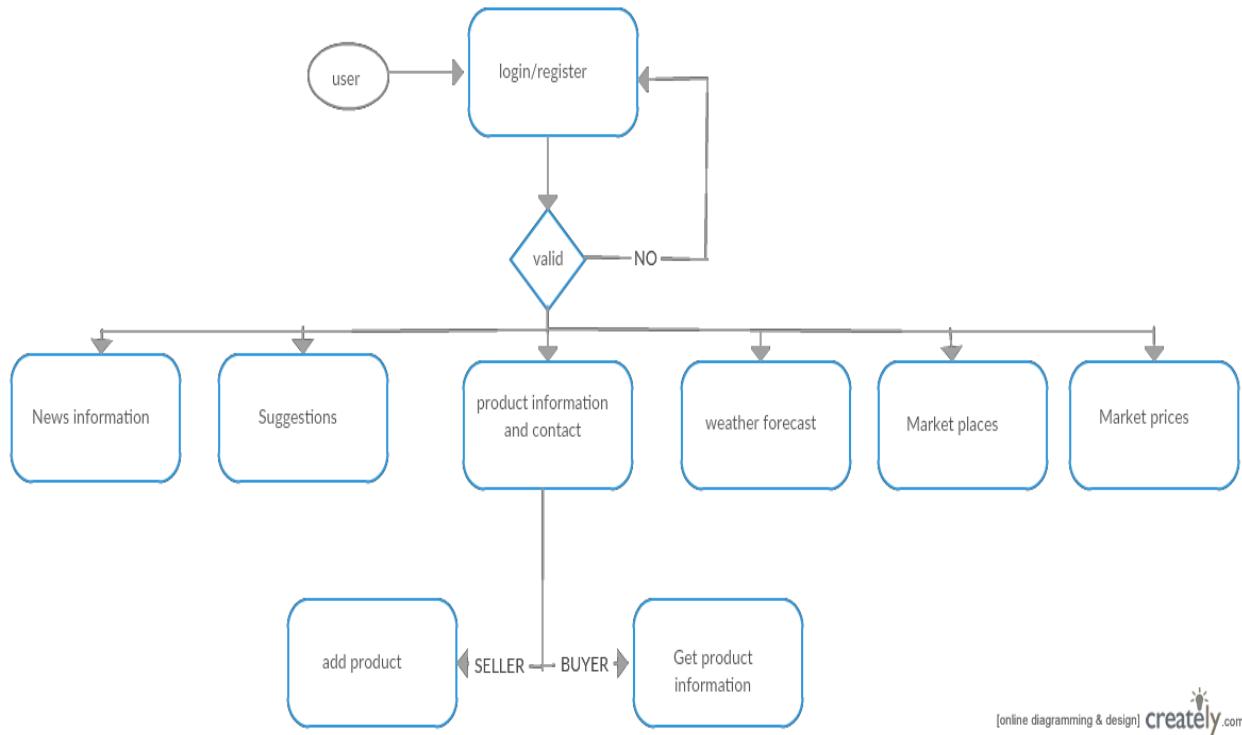
## Use Case Diagram



## Class Diagram:

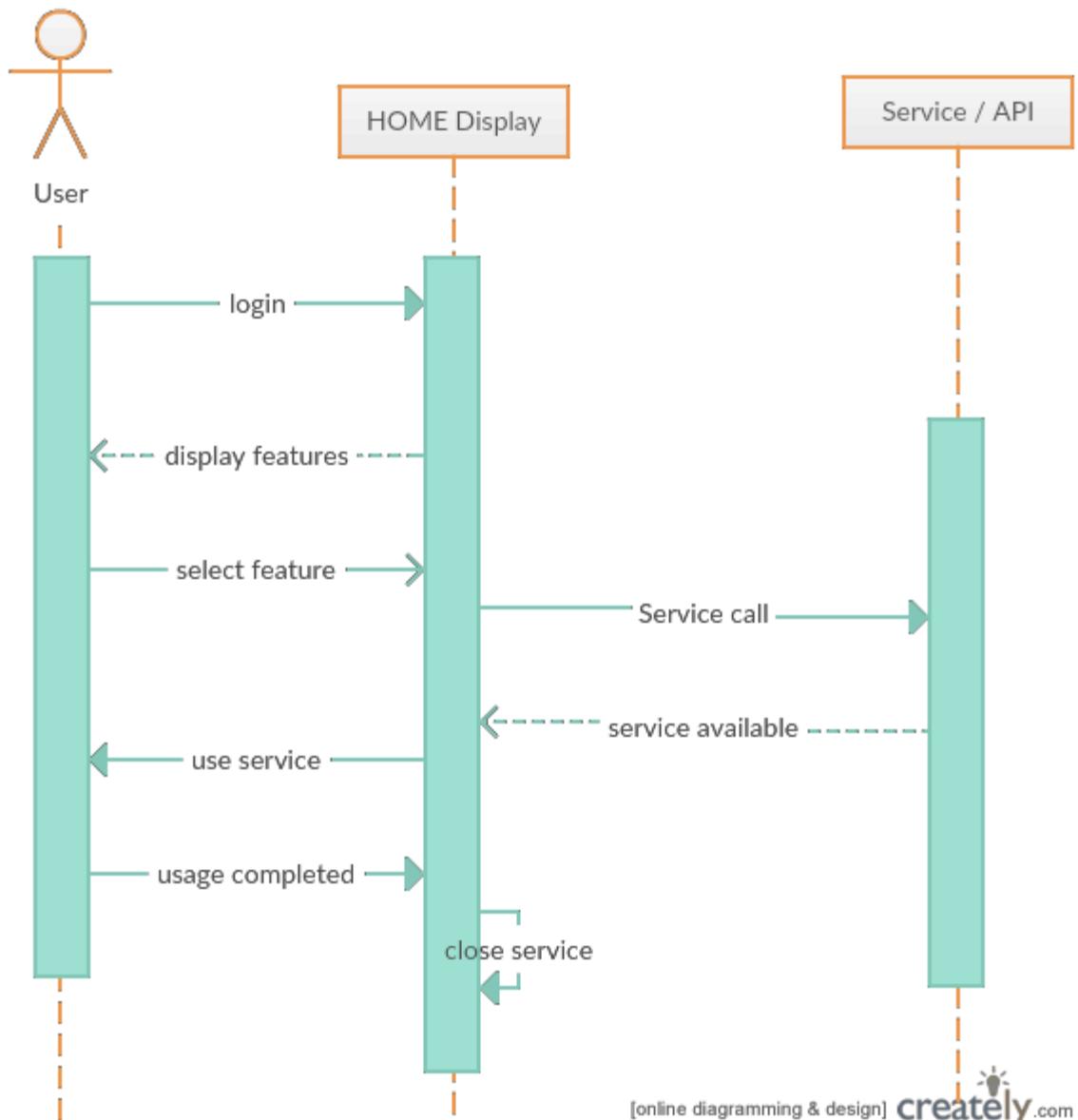


## Activity Diagram



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### Sequence Diagram



## Issues Tool Bar

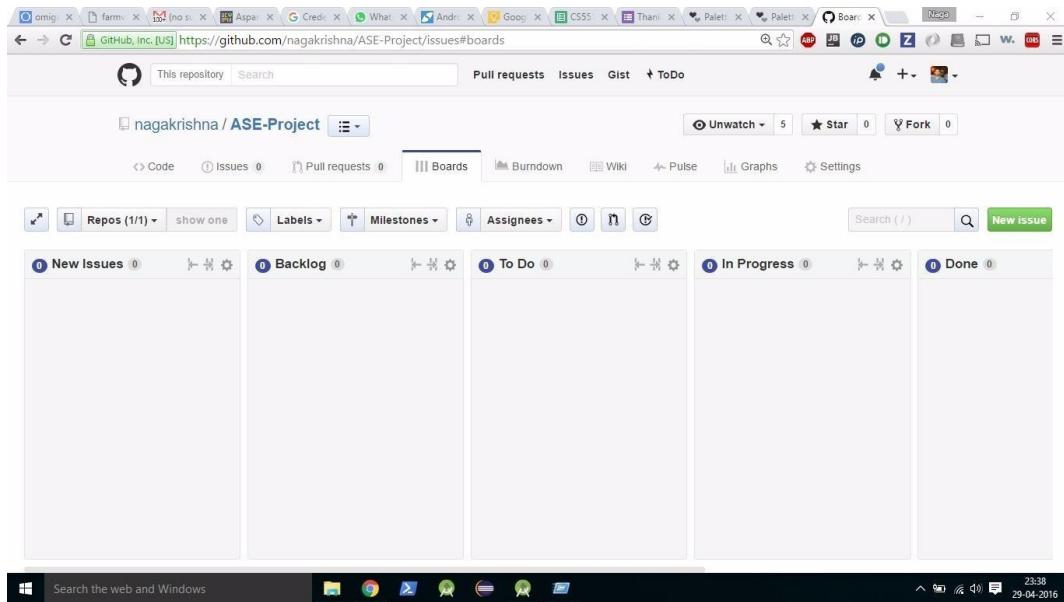
Tasks have been assigned to each of us and we had regularly updated the status of each task assigned to us. We have completed most of the tasks assigned to us for the third increment. Milestone is created for fourth increment.

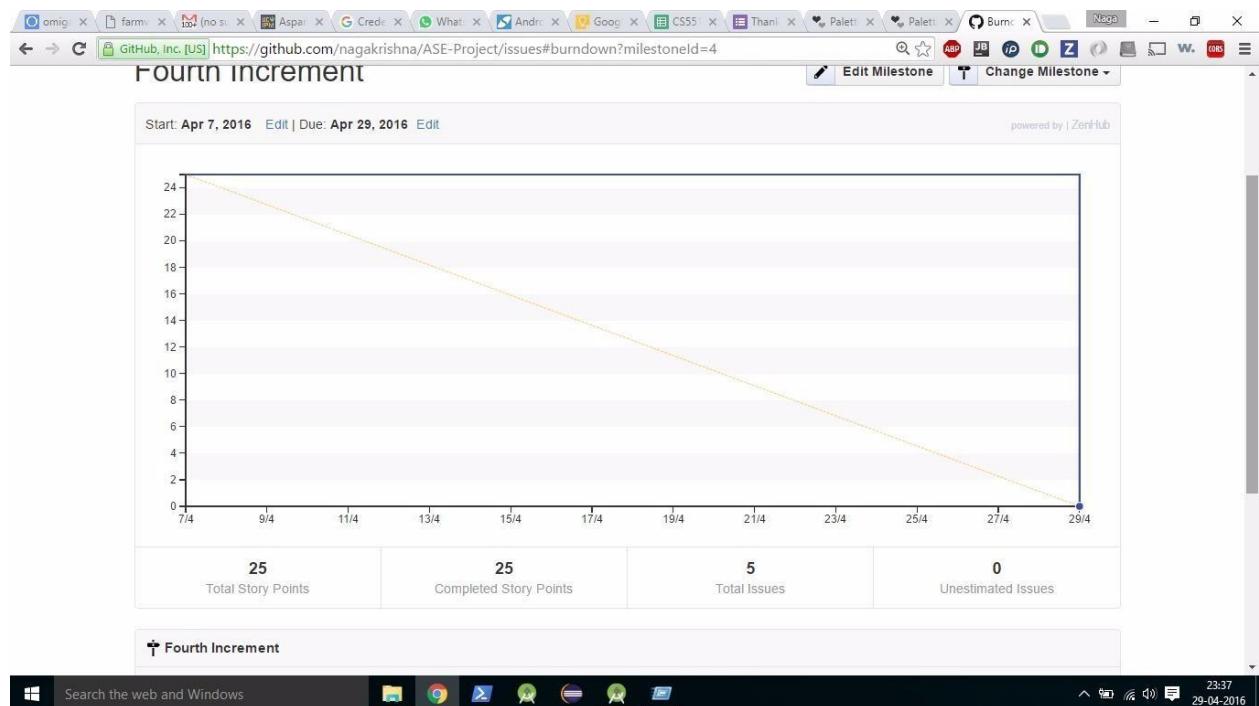
The screenshot shows a list of closed issues on GitHub. The search bar at the top has the query "is:issue is:closed". There are 31 closed issues listed:

- #31 Implement navigation drawer with logoff button (5) - Fourth Increment
- #30 Create activity for seller to edit all his posts - delete/update (5) - Fourth Increment
- #29 Add phone call intent to contact number and maps intent to address of seller details (5) - Fourth Increment
- #28 On clicking on seller item, seller contact details has to be displayed as new activity (5) - Fourth Increment
- #27 Get the seller details of all entries except the current user as Listview (5) - Fourth Increment
- #26 issue17 enhancement (5) - Third Increment

## Burn Down Graph

The burn down chart for the tasks assigned and the completed tasks. The Third increment has to be completed by 04/06 . By the end of the task completion we got the above burn down chart.



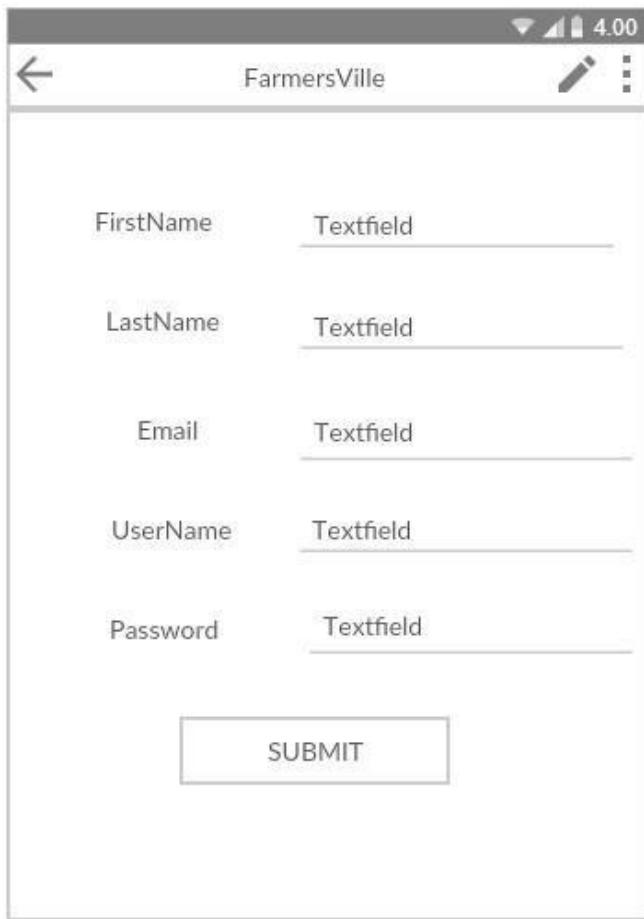


## Wire Frames

### Login Page



## Sign Up Page



## **Market Trade Page**



### Application Home Page



## Weather Page

The screenshot shows a mobile application interface titled "Weather". At the top, there is a navigation bar with a back arrow, the title "Weather", and a pencil icon for editing. Below the title, there are three distinct sections, each representing a weather entry. Each section contains three input fields: "Date", "Temp", and "Humidity", each with a horizontal line for writing.

Date	_____
Temp	_____
Humidity	_____
Date	_____
Temp	_____
Humidity	_____
Date	_____
Temp	_____
Humidity	_____

## **Suggestions**



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## Market Locations Page



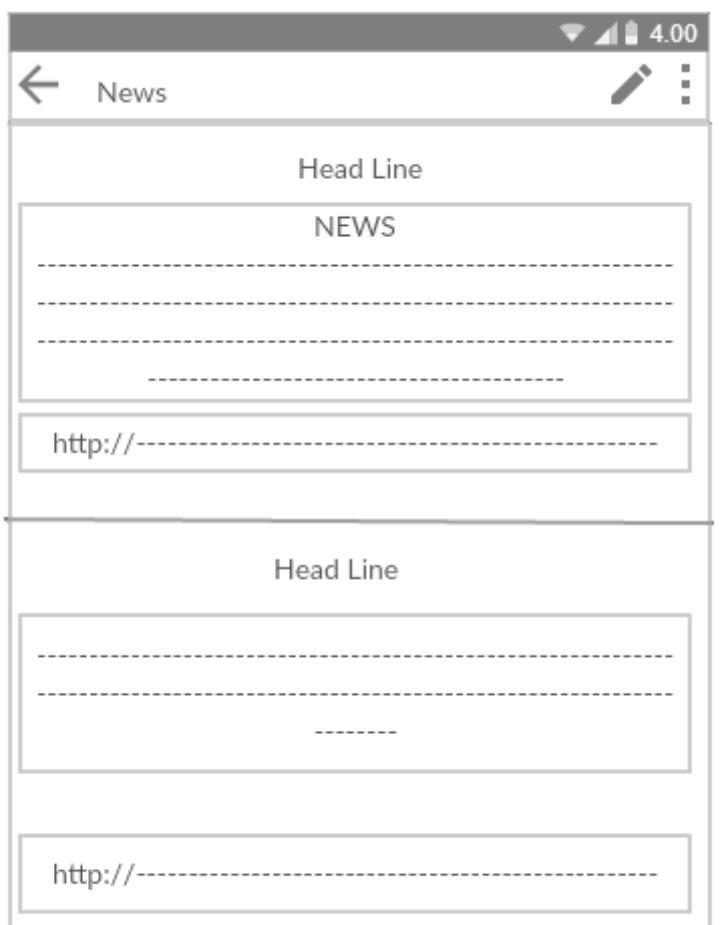
[online diagramming & design] **creately**.com

## Buyer Page

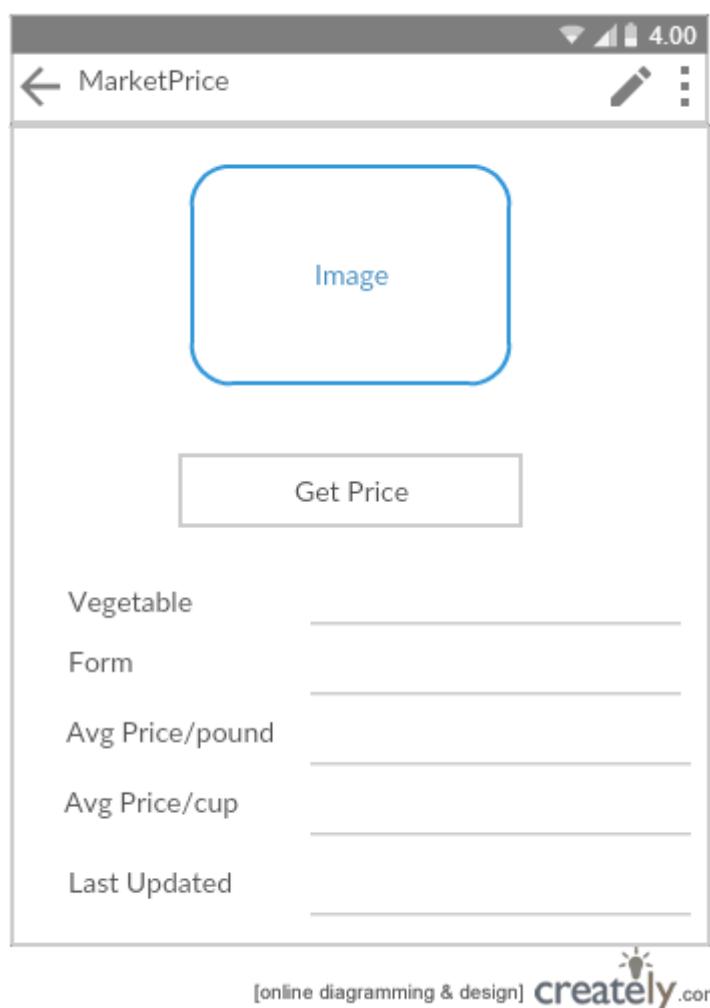
The image shows a mobile application interface for "MarketTrade". At the top, there is a navigation bar with a back arrow, the app name "MarketTrade", and edit/option icons. Below the navigation bar, the screen is divided into two main sections: "SELLER" on the left and "BUYER" on the right. The "BUYER" section contains three input fields: "Product" with a horizontal line for text entry, "Quantity" with a horizontal line for text entry, and "Description" with a horizontal line for text entry.

[online diagramming & design] **creately**.com

## **News Module**

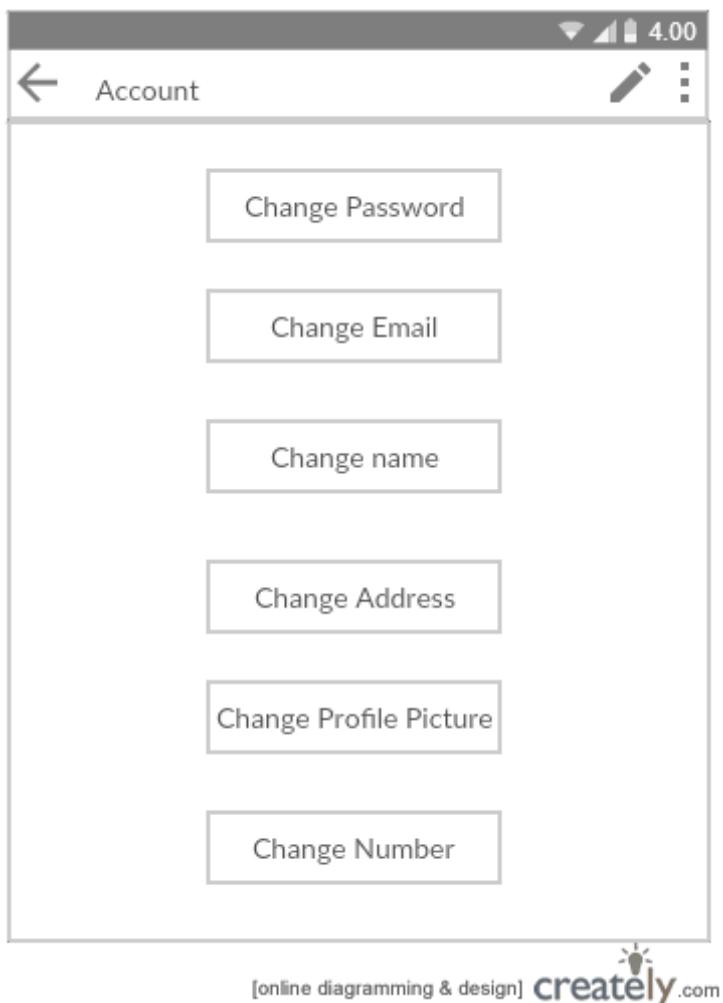


## **MarketPrices**



[online diagramming & design] **creately**.com

## Profile



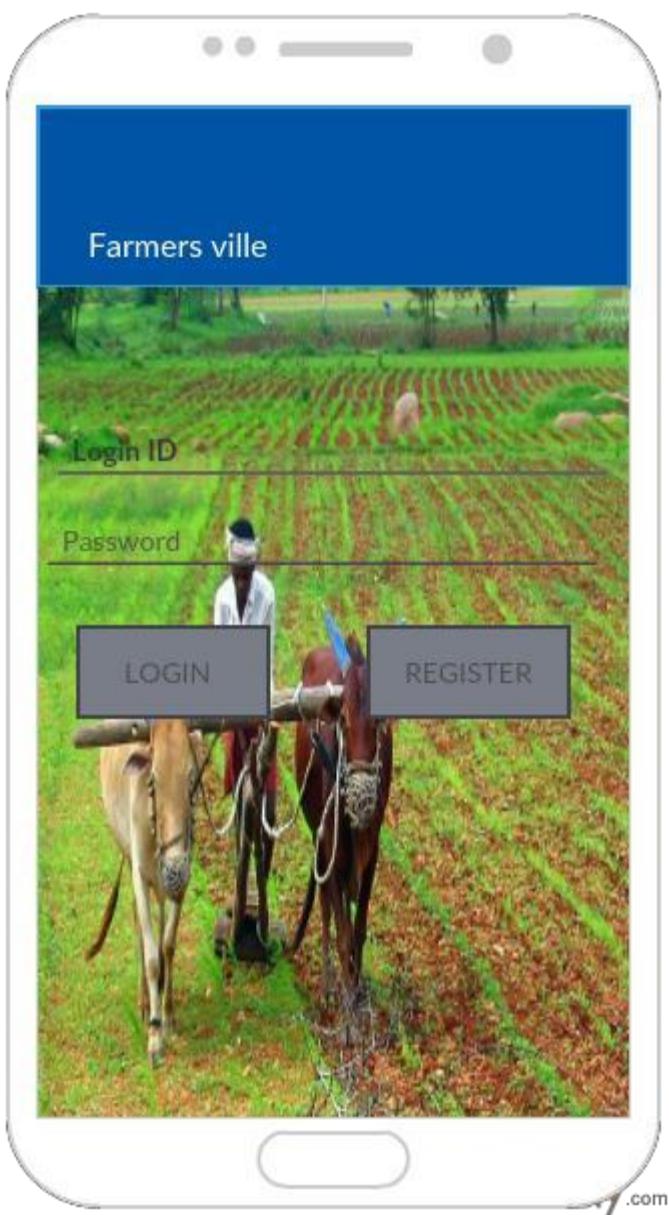
[online diagramming & design]  .com

## **Trends and Tech**

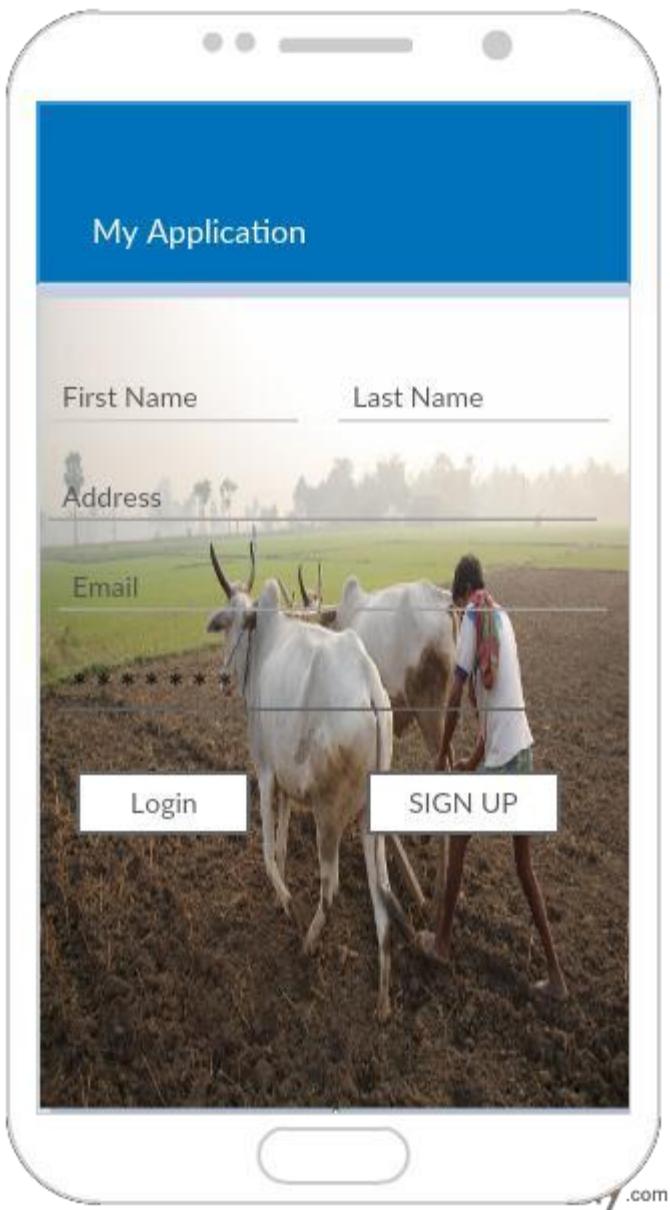


## Mock Ups

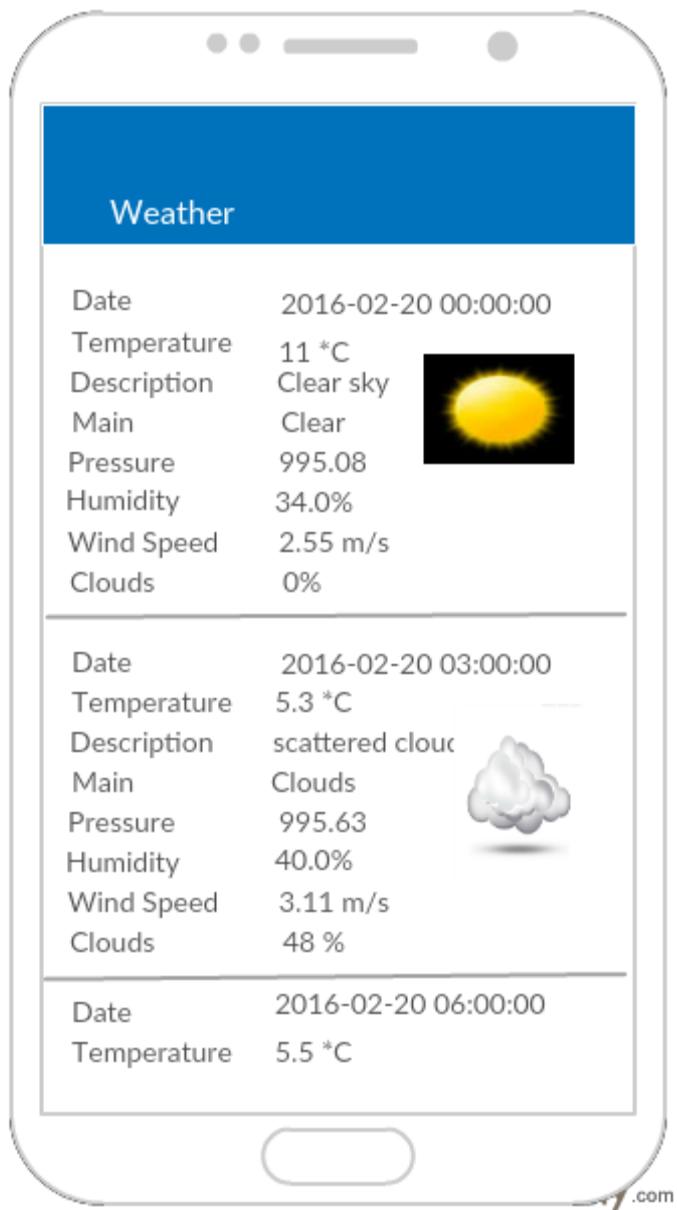
### Login Page



### Sign Up Page



## Weather Page



Home Screen Page



## Market Trade Page



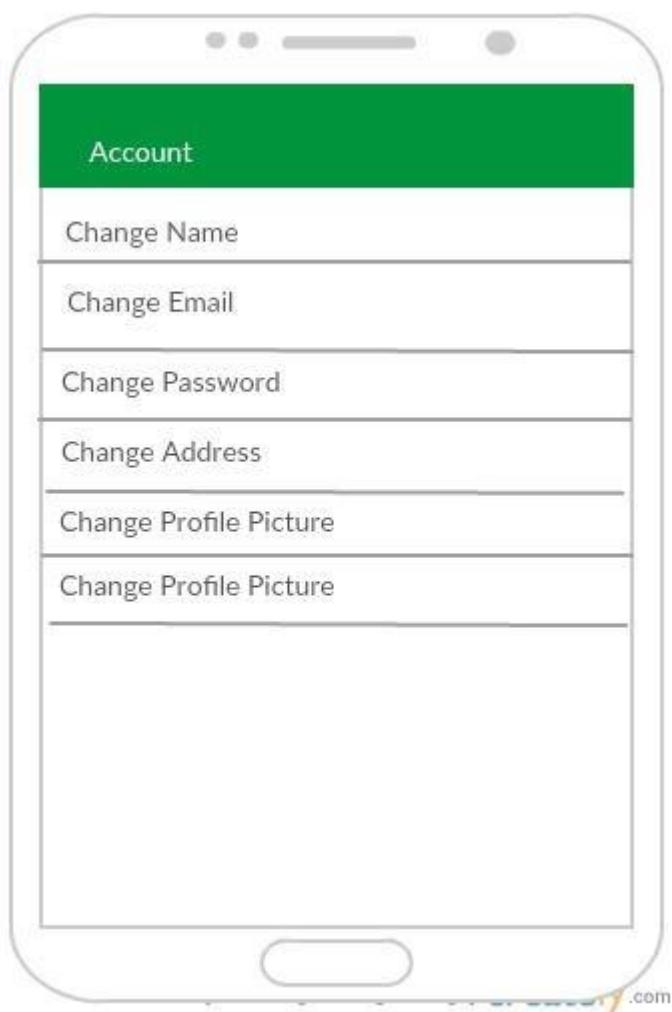
## Market Locations



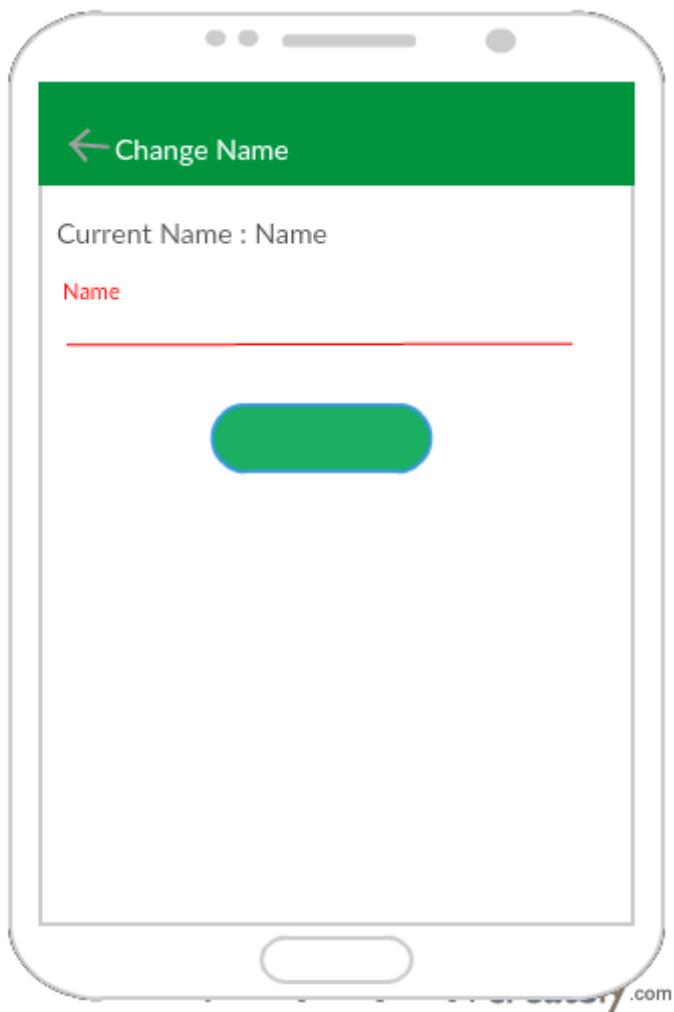
A smartphone is shown displaying a mobile application titled "MarketLocations". The screen shows four entries of market locations, each with Name, Address, and Distance. The entries are separated by horizontal lines.

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, 66062, United States
Distance	15.39 miles

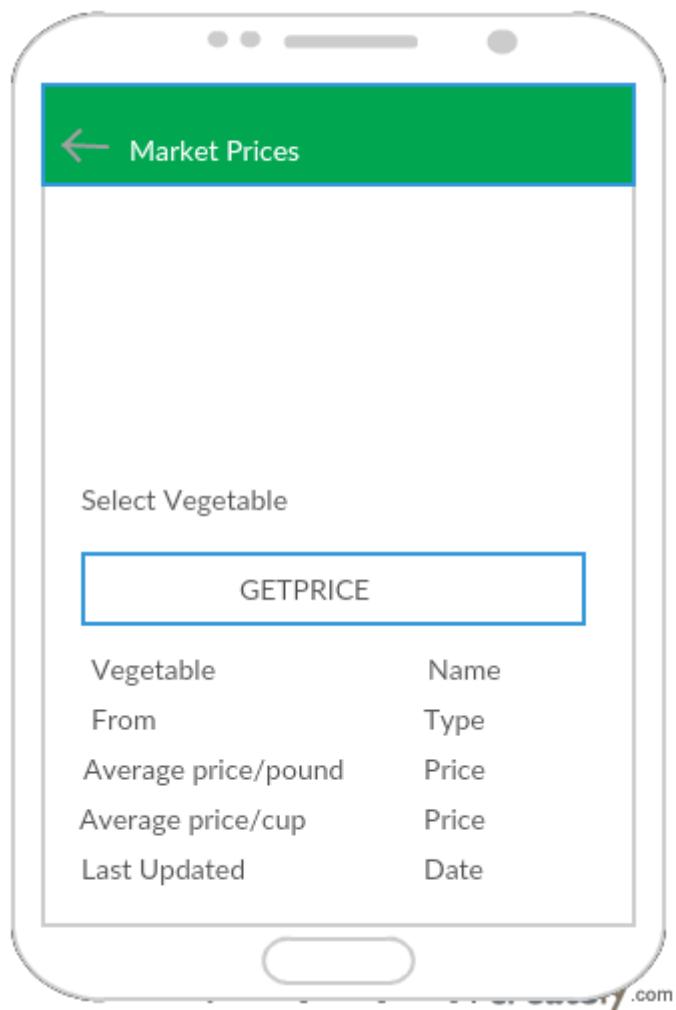
## **Account Details**



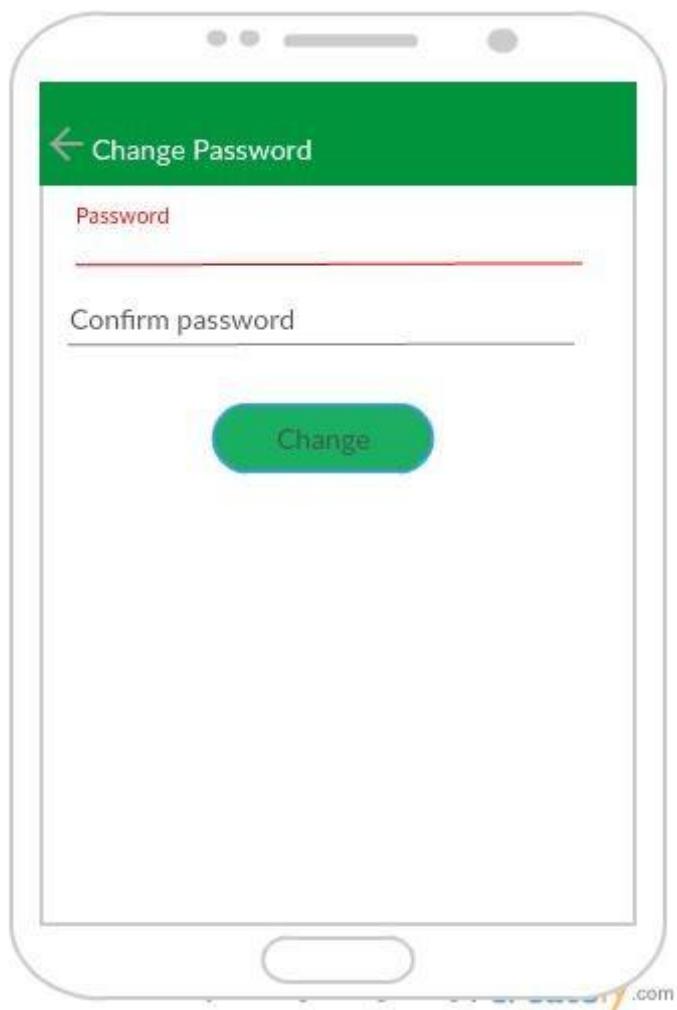
## ChangeName



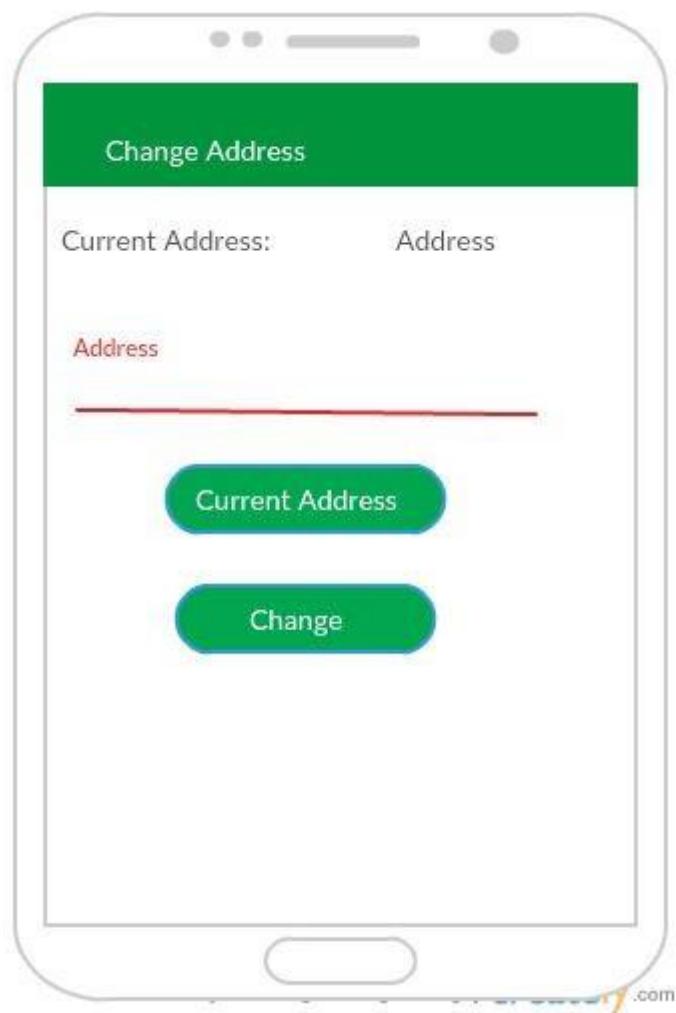
## MarketPrices



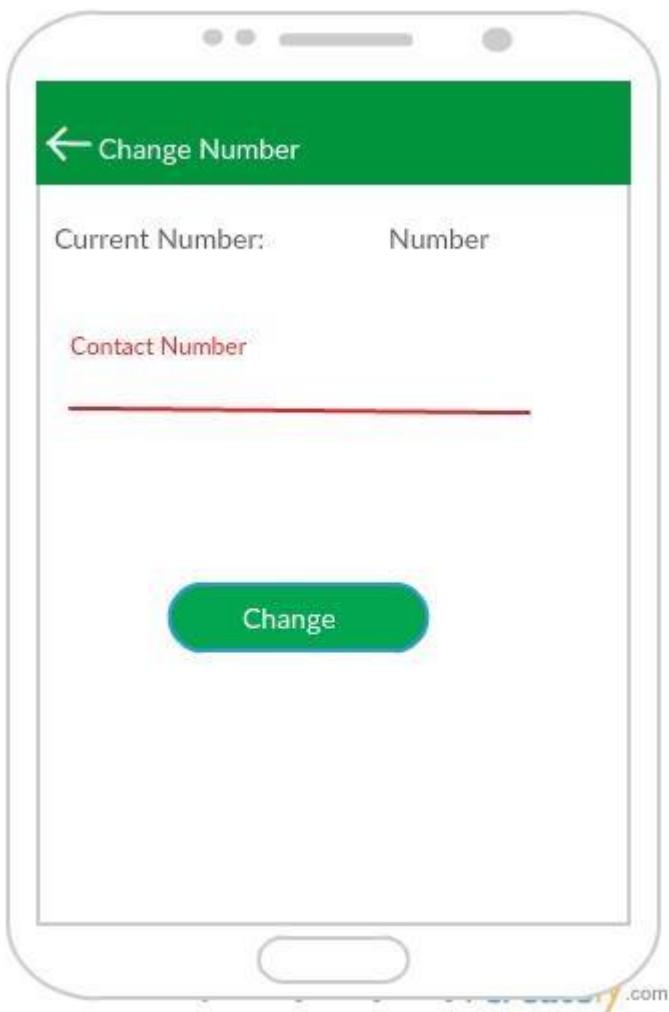
## ChangePassword



ChangeEmail  
ChangeEmail



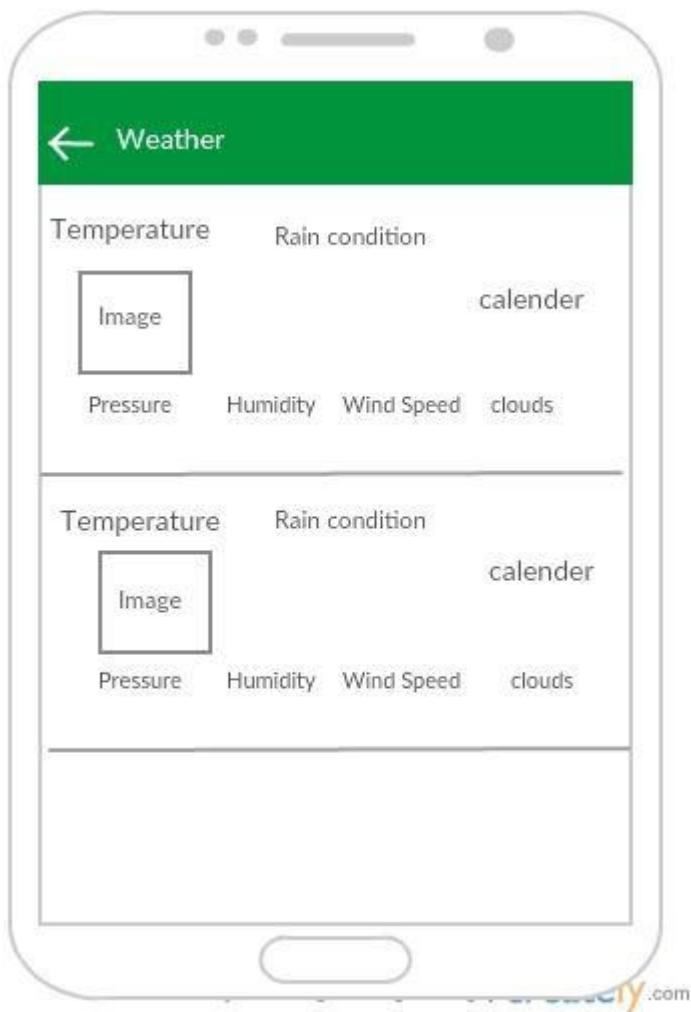
ChangeEmail



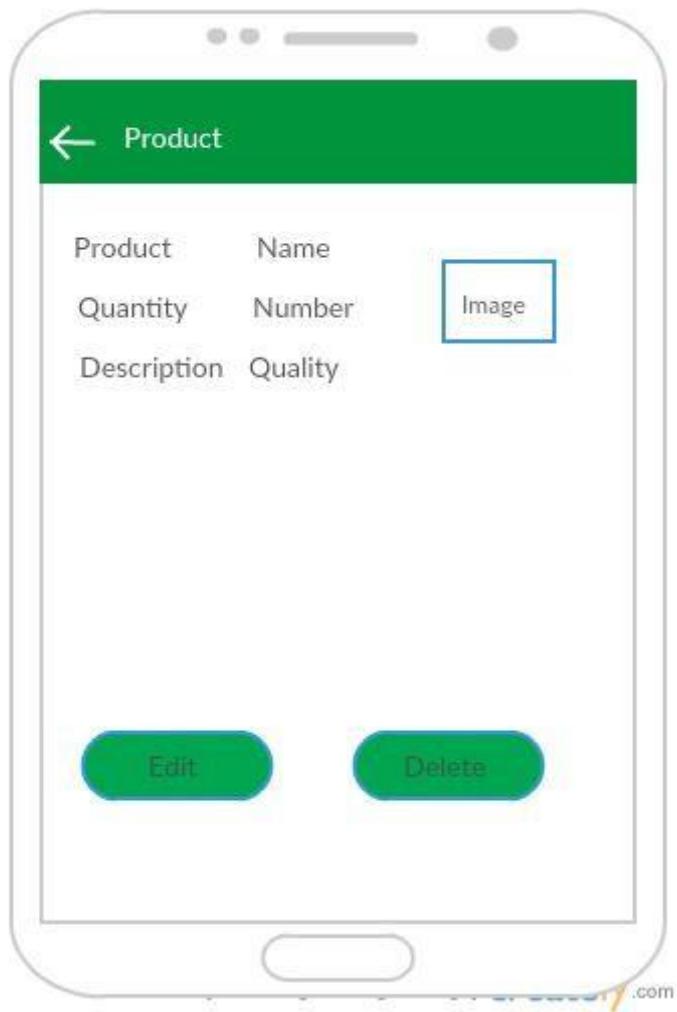
Changeimage



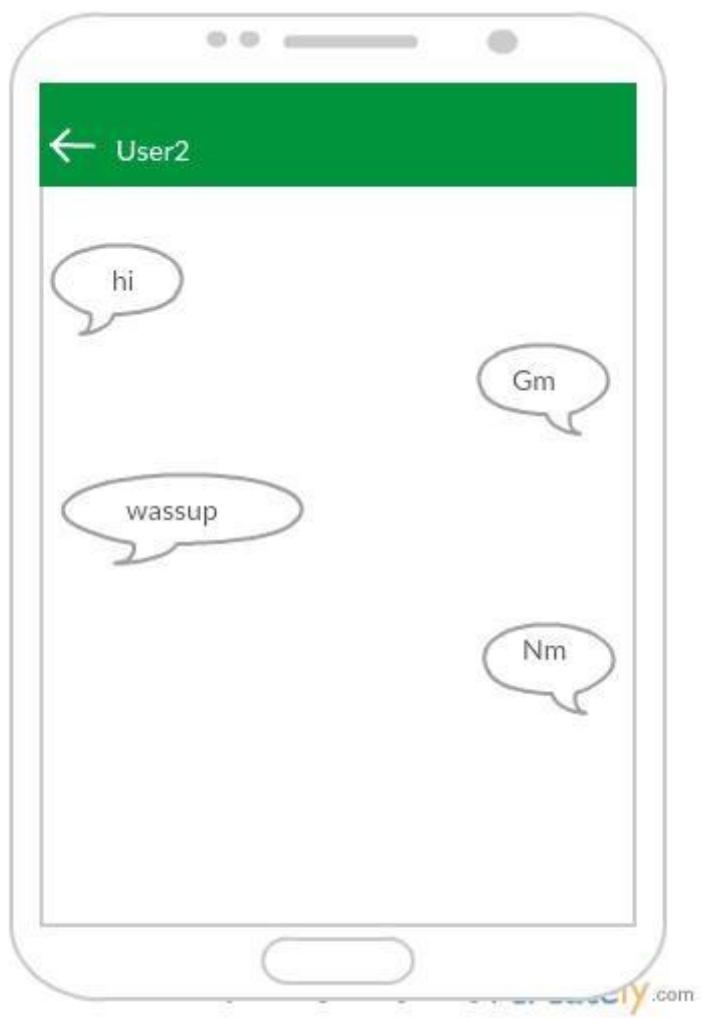
## Weather



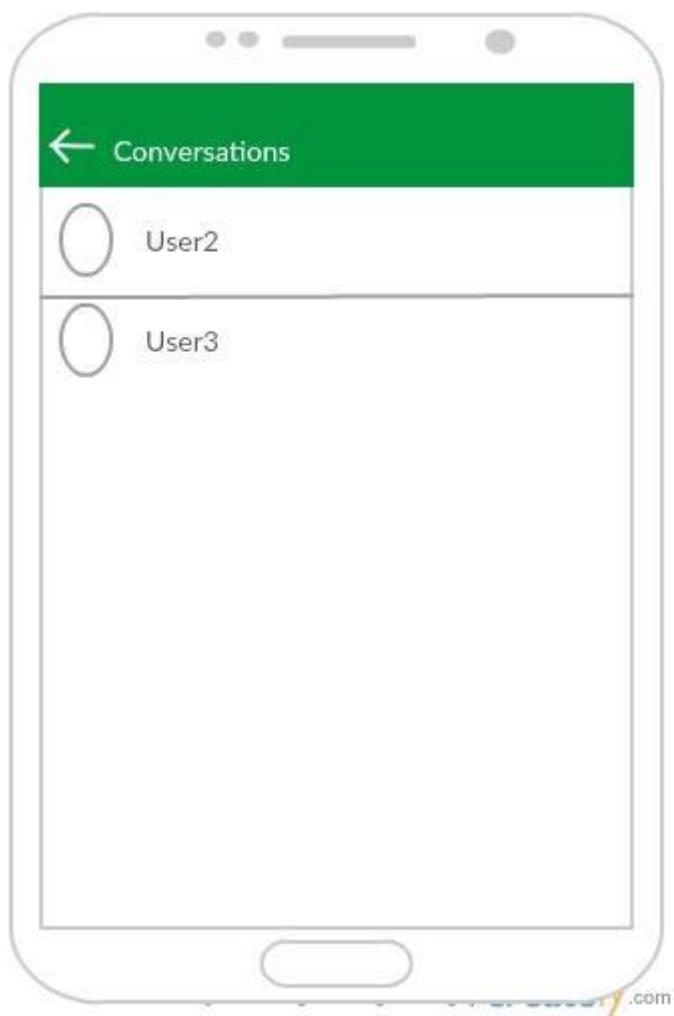
## Product



User



## Conversations



EditPost



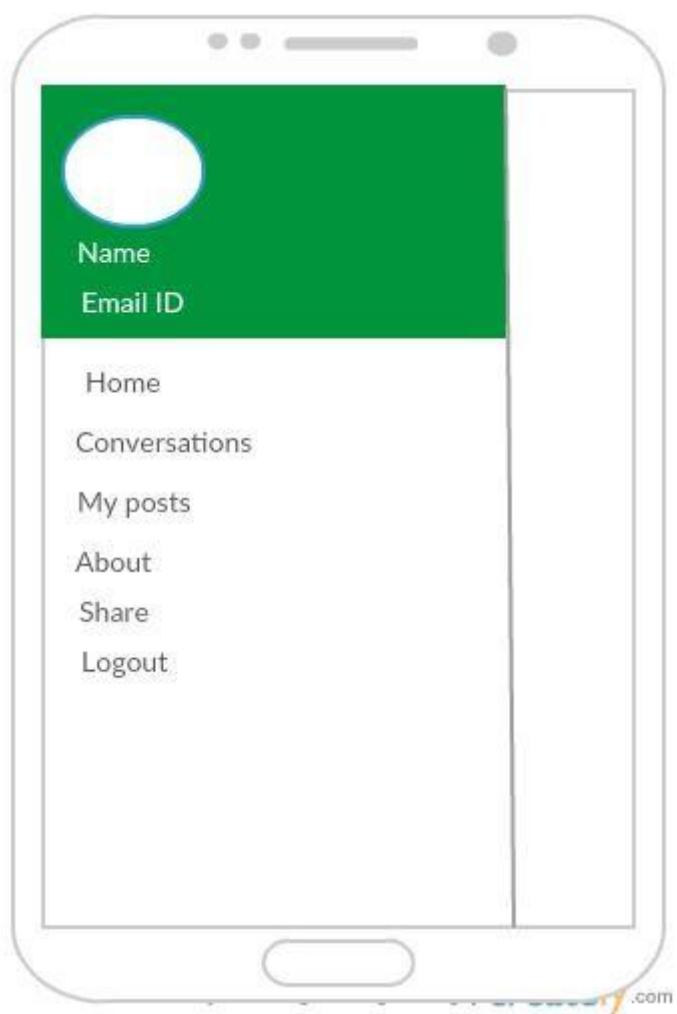
## News



## Journals



## Account Detail



## MarketLocations



**Buyer Page**



## MarketTrade Page



## **News Activity Page**



## **User Stories**

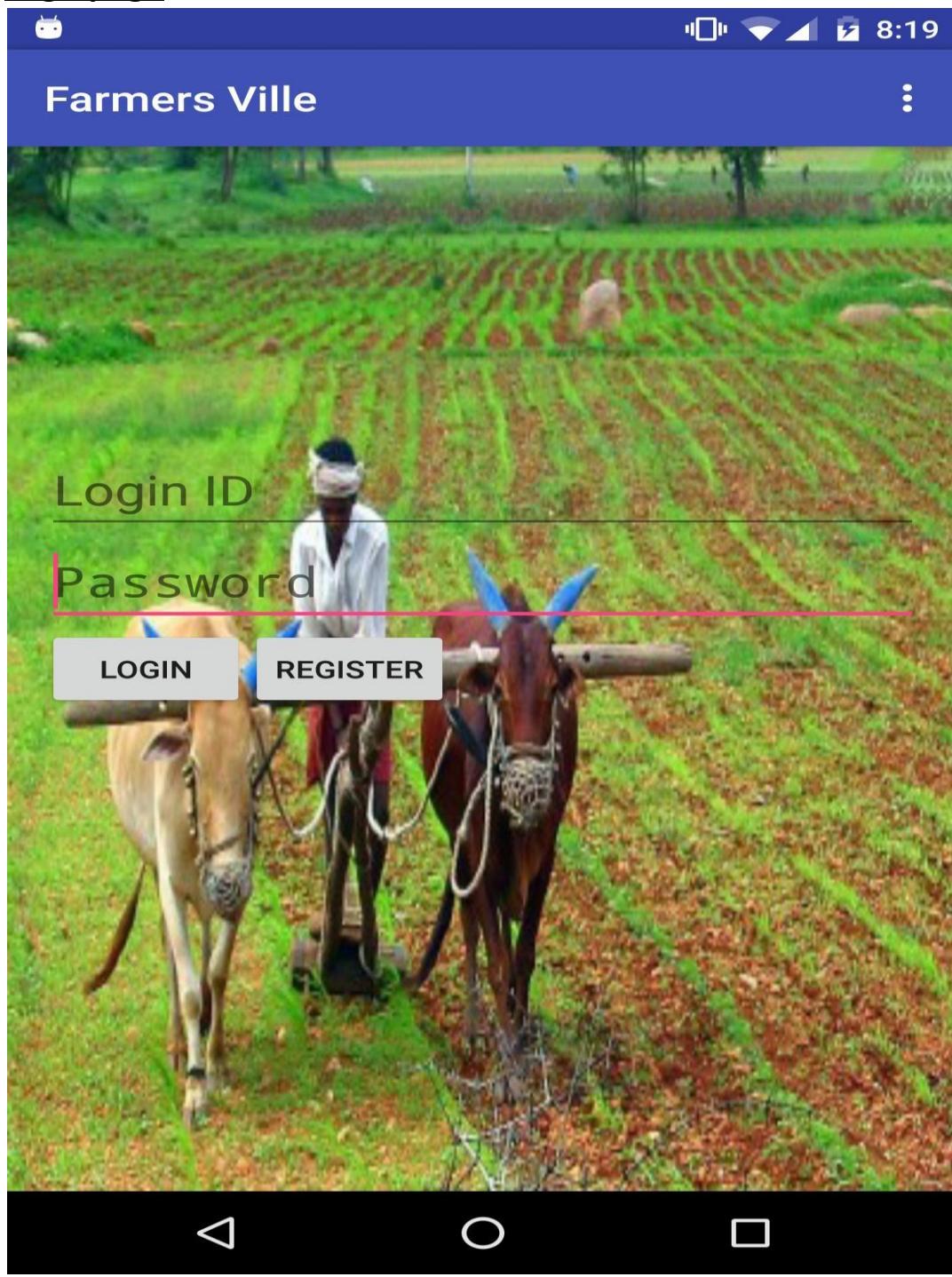
As a	I want to	so that
User	sell and buy crop	I can do marketing without any mediator and gain more profit
	check near market locations	I can directly go and sell the product
	check current market prices	I can set the crop price at affordable levels
	read the present agricultural news	I can get awareness 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
	chat	I can communicate with other customers
	profile	I can change the personal details
	weather forecast	I will plan the harvestation effectively

## Test Cases

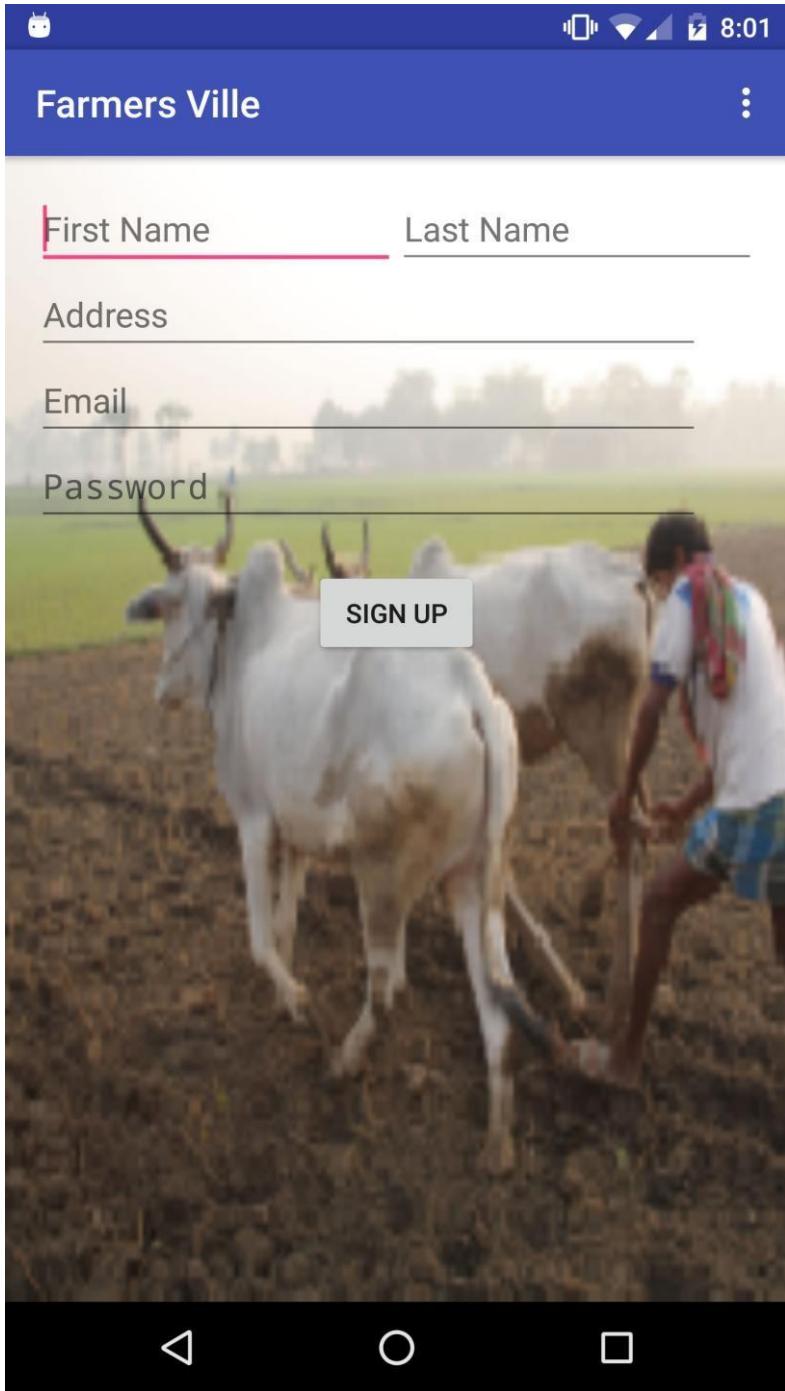
Testcase Name	Test Description	Expected Result	Pass/Fail
Login	Enter invalid <del>userid</del> and valid password	invalid login error message should be displayed	Pass
	Enter valid <del>userid</del> and invalid password	invalid login error message should be displayed	Pass
	Enter valid <del>userid</del> and valid password	Application should be redirected to home page	Pass
Sign Up	Enter <del>emailid</del> with * symbol	invalid <del>emailid</del> should be displayed	Pass
	Enter password with only numbers	please check password instructions should be displayed	Pass
	Enter <del>firstname</del> 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	nearby market locations should be populated	Pass
News	click on the news button	latest agricultural news will be populated	Pass
Suggestions	click on the suggestions button	search option for crop data will be populated	Pass
MarketPricing	click on the Live Market Prices button	List of the prices will be populated	Pass
Profile	Click on the profile button	Get the Options to change the personal data	Pass
Chat	Click on chat button	chat view will be populated	Pass

## Final Screen Shots

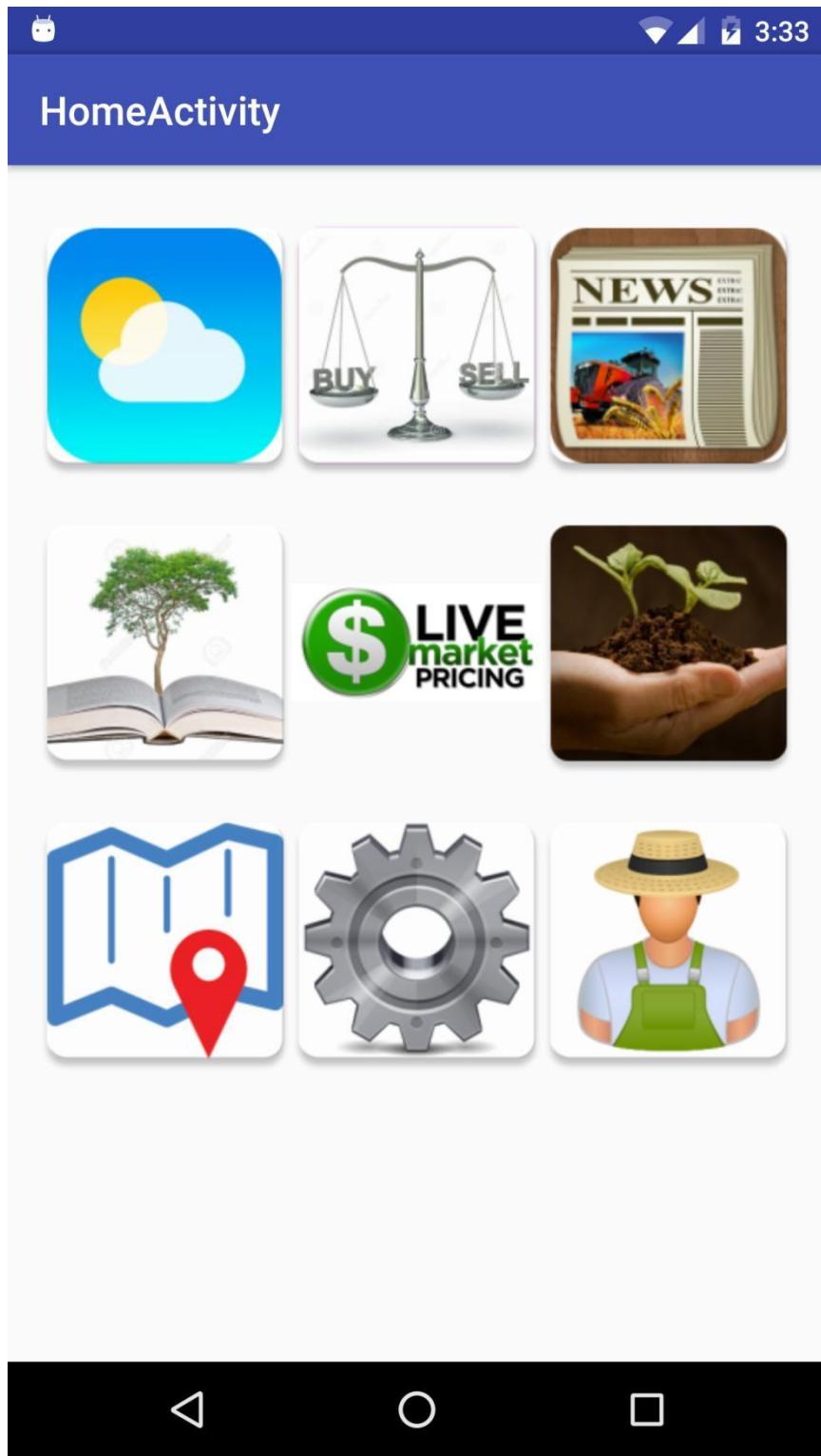
### Loginpage



## Signup Page



## Home Screen



## Weather Page



## Market Page

The screenshot shows a mobile application interface titled "Market Trade". At the top, there is a navigation bar with icons for back, home, and recent apps, and the time "11:18". Below the navigation bar, the screen is divided into two main sections: "SELLER" on the left and "BUYER" on the right. The "SELLER" section is currently active, indicated by a red underline.

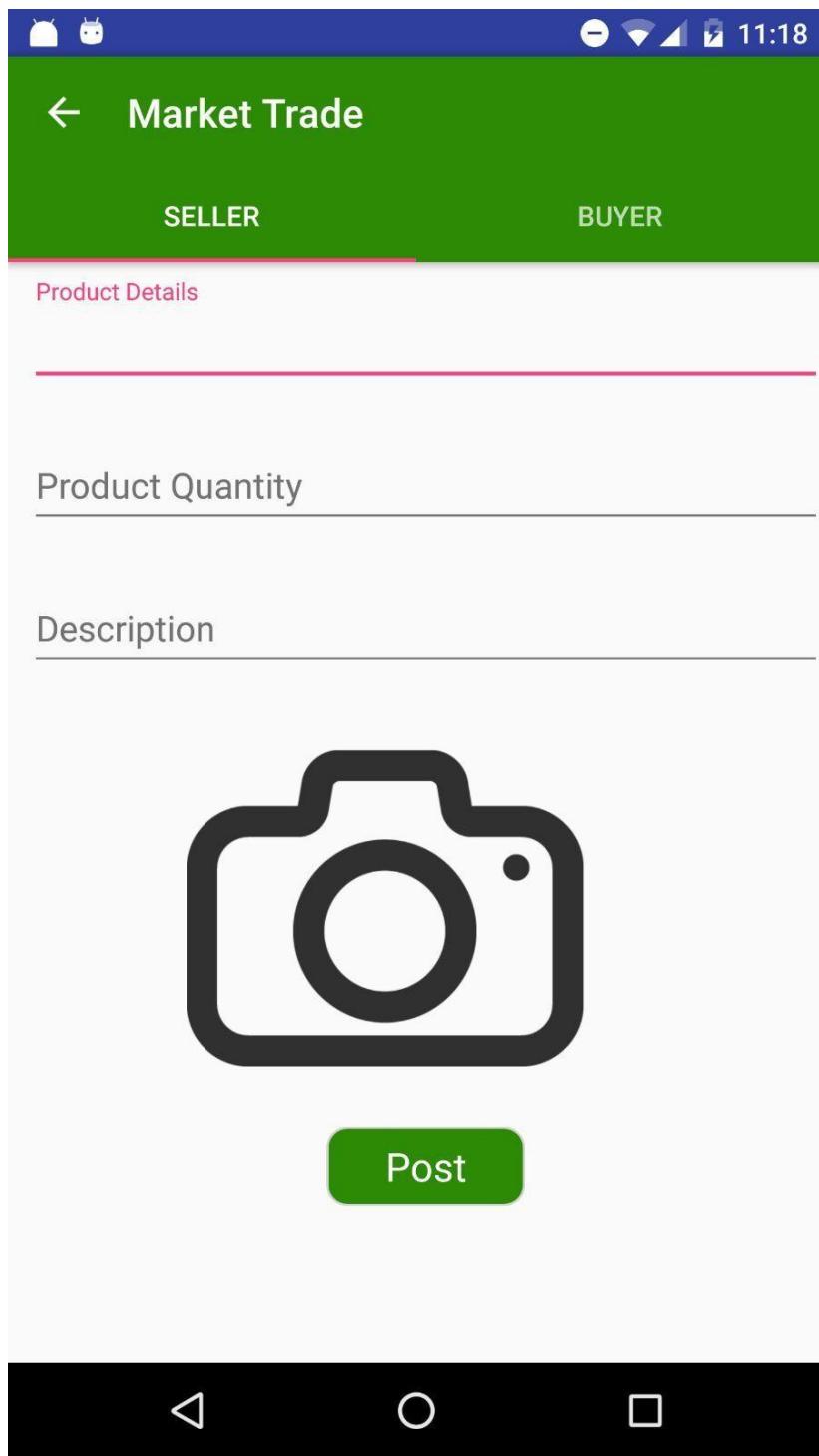
The list of items for sale is as follows:

- user3**  
Quantity is:  
 No Image Available
- user2**  
Quantity is: user2  
 No Image Available
- corn**  
Quantity is: 2  
 No Image Available
- 5 h d**  
Quantity is: 5  
5  

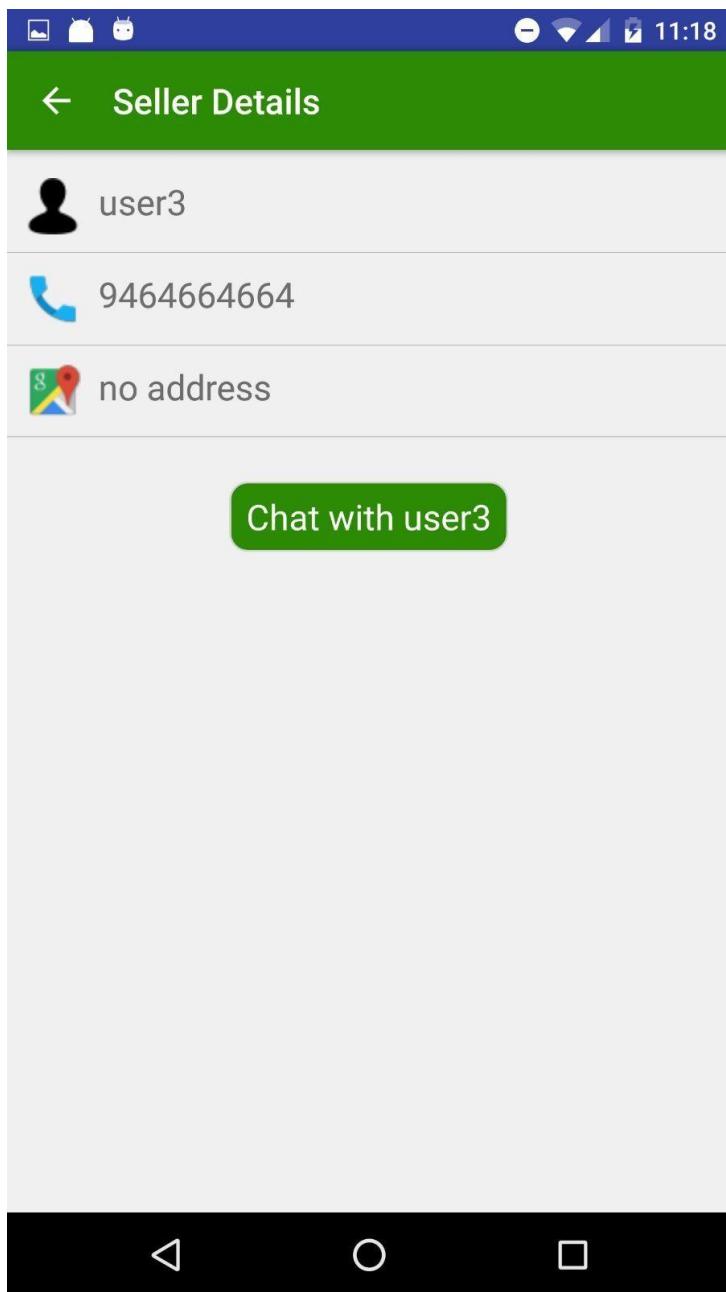
- naga**  
Quantity is: edit  
edit  
 No Image Available
- naga**  
Quantity is: naga  


At the bottom of the screen, there is a black navigation bar with three white icons: a triangle pointing left, a circle, and a square.

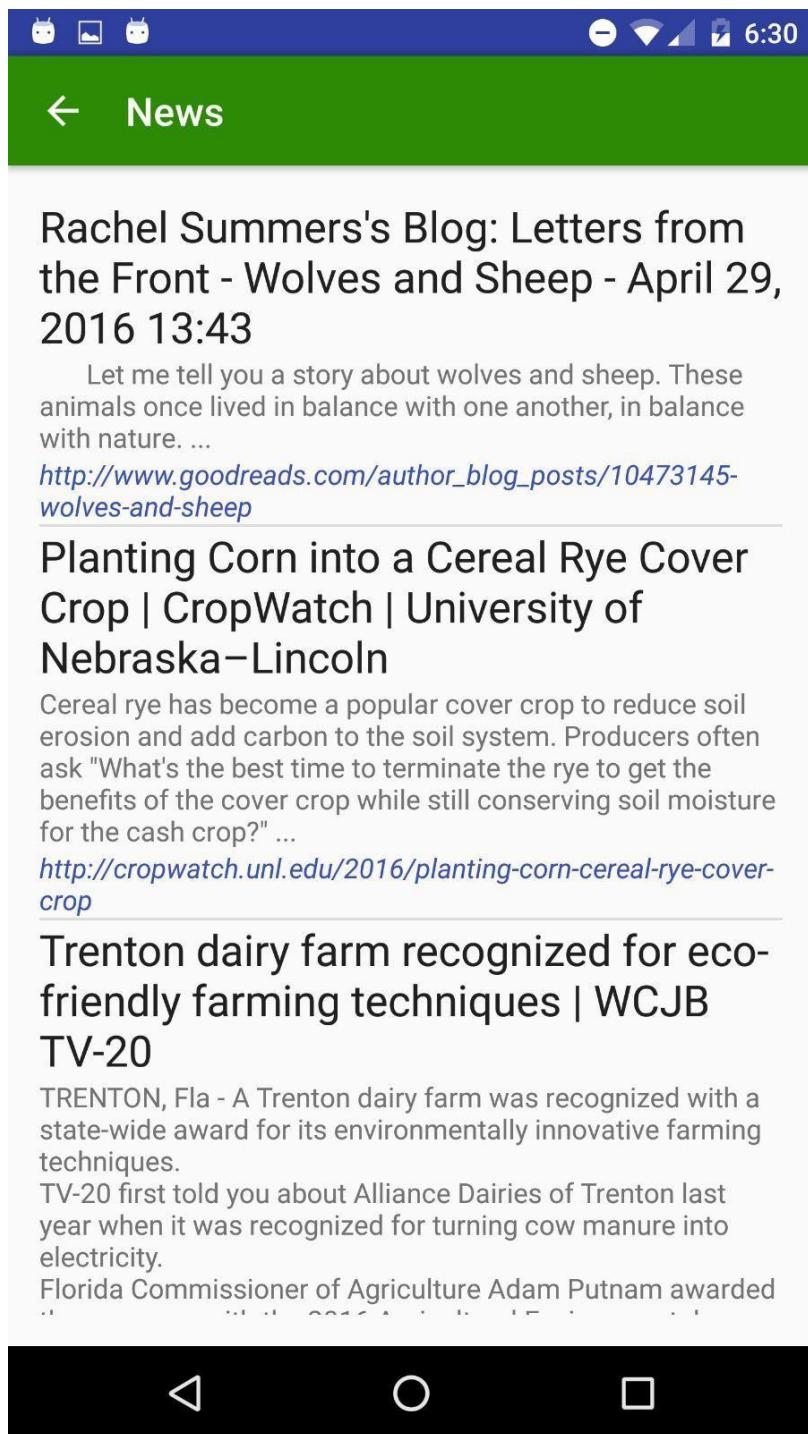
## **Market Trade**



## **Seller Details**



## News Module



A screenshot of a smartphone displaying a news application. The top status bar shows signal strength, battery level, and the time 6:30. Below the status bar is a green header bar with a back arrow icon and the word "News". The main content area displays three news items:

- Rachel Summers's Blog: Letters from the Front - Wolves and Sheep - April 29, 2016 13:43**

Let me tell you a story about wolves and sheep. These animals once lived in balance with one another, in balance with nature. ...

[http://www.goodreads.com/author\\_blog\\_posts/10473145-wolves-and-sheep](http://www.goodreads.com/author_blog_posts/10473145-wolves-and-sheep)
- Planting Corn into a Cereal Rye Cover Crop | CropWatch | University of Nebraska–Lincoln**

Cereal rye has become a popular cover crop to reduce soil erosion and add carbon to the soil system. Producers often ask "What's the best time to terminate the rye to get the benefits of the cover crop while still conserving soil moisture for the cash crop?" ...

<http://cropwatch.unl.edu/2016/planting-corn-cereal-rye-cover-crop>
- Trenton dairy farm recognized for eco-friendly farming techniques | WCJB TV-20**

TRENTON, Fla - A Trenton dairy farm was recognized with a state-wide award for its environmentally innovative farming techniques.

TV-20 first told you about Alliance Dairies of Trenton last year when it was recognized for turning cow manure into electricity.

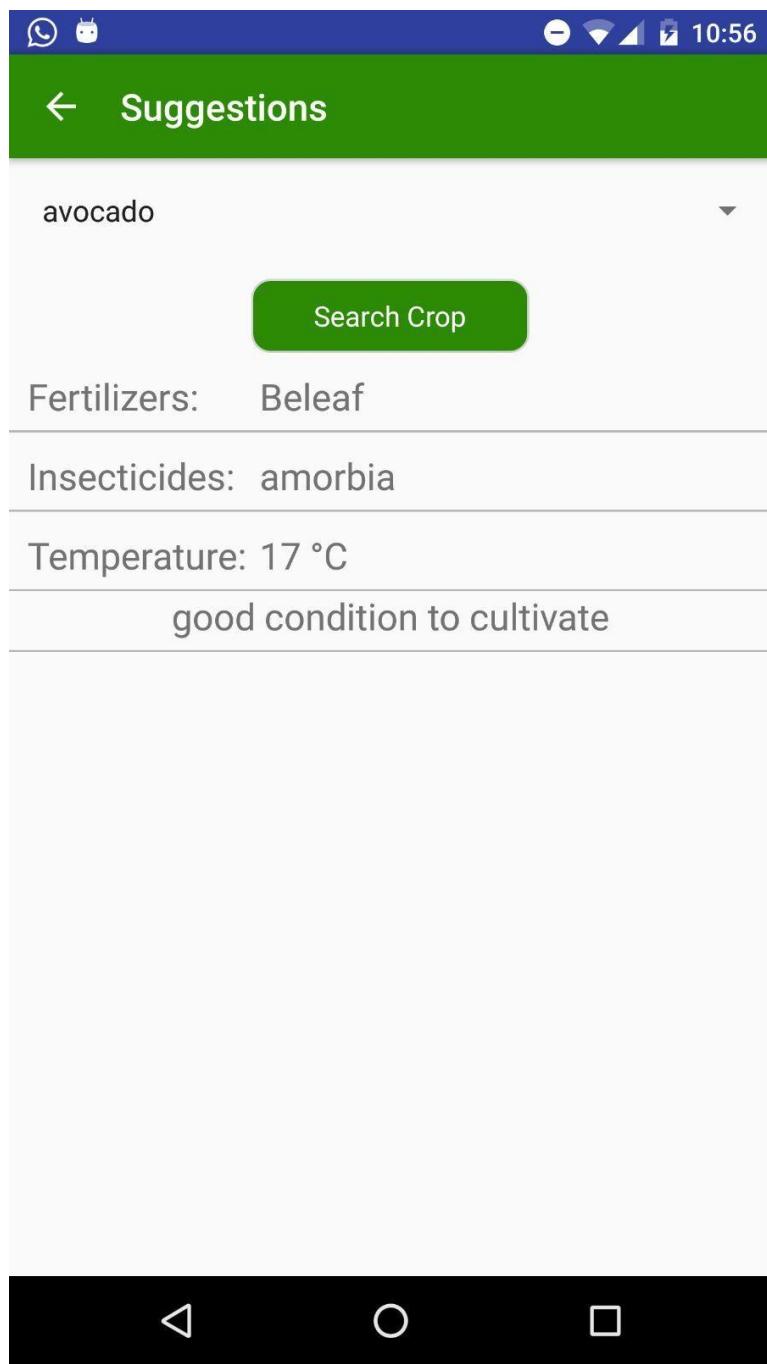
Florida Commissioner of Agriculture Adam Putnam awarded

The bottom of the screen features a black navigation bar with three white icons: a triangle pointing left, a circle, and a square.

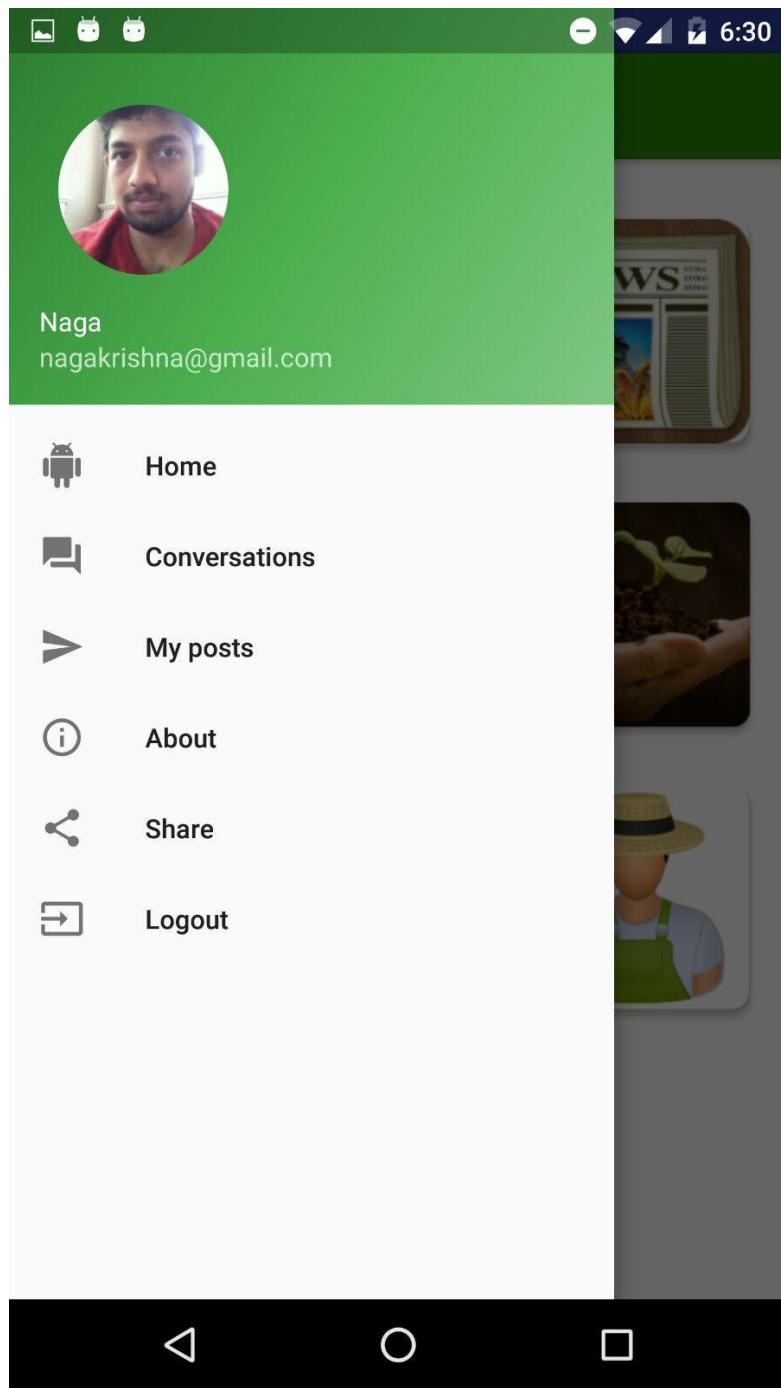
## Market Locations

Market Locations	
<b>Lee's Summit Farmers Market</b>	13.59 miles
113 SE Douglas St Douglas,Lees Summit, MO 64063,United States	
<b>Hippie Chow at BADSEED Farmers Market</b>	3.82 miles
1909 McGee St 19th and McGee,Kansas City, MO 64108,United States	
<b>Edens Acres</b>	6.41 miles
Raytown, MO,United States	
<b>Greenmarket</b>	5.89 miles
Kansas City, KS,United States	
<b>Parker Farms CSA Pick-up</b>	5.55 miles
6737 W 75th St Frtizs Chili Parking Lot,Overland Park, KS 66204,United States	
<b>Belton Farmers Market</b>	15.81 miles
300 Block Loop Rd,Belton, MO 64012,United States	
<b>Rosedale Farmers Market</b>	3.04 miles
248 Marshall St,Kansas City, KS 66103,United States	
<b>Rosedale Farmers Market</b>	2.31 miles
Kansas City, KS,United States	
<b>Mi Pueblito Meat Market</b>	6.59 miles

## Suggestion Module



## AccountDetails



## **Presentation Sides URL**

<https://github.com/nagakrishna/ASE-Project/tree/master/Documentation>

## **Github URL**

[https://github.com/SCE-UMKC/ASESP2016\\_Farmers\\_Ville\\_Team\\_11.git](https://github.com/SCE-UMKC/ASESP2016_Farmers_Ville_Team_11.git)

## **YouTube Project Video URL**

<https://www.youtube.com/watch?v=Vzkp3ZJxtkk>