**SOMAIYA**
**VIDYAVIHAR**

**K J Somaiya Institute of Engineering and Information Technology**
An Autonomous Institute Permanently Affiliated to the University of Mumbai

## DEPARTMENT OF INFORMATION TECHNOLOGY

*Synopsis of Mini Project On*

# The FarmWeb

Prepared By:
Manav Gupta (Roll No. 20)
Varun Kanbhat (Roll No. 26)
Mansoor Kanorewala (Roll No. 27)

Under the guidance of:
Dr. Radhika Kotecha
Head – Department of
Information Technology

**Department of Information Technology**
**Academic Year: 2021-2022**
**Autonomy Syllabus Scheme-I (2021-22) - SEMESTER IV (SY - IT)**

## DEPARTMENT OF INFORMATION TECHNOLOGY

### CERTIFICATE

This is to certify that following students:

|  | Roll No. / Seat No. |
|---|---|
| Manav Gupta | 20 |
| Varun Kanbhat | 26 |
| Mansoor Kanorewala | 27 |

have submitted PBL – Mini Project I Report on *"The FarmWeb"* as the partial fulfilment for the requirement of Second Year of Engineering (3$^{rd}$ Semester) in S.Y. - Information Technology under my guidance during the academic year 2021-2022.

<table>
<tr>
<td align="center"><b>Dr. Radhika Kotecha</b><br><b>Project Guide</b><br><b>Associate Professor</b><br><b>Department of Information Technology</b></td>
<td align="center"><b>Dr. Radhika Kotecha</b><br><b>Head of Department</b><br><b>Associate Professor</b><br><b>Department of Information Technology</b></td>
</tr>
</table>

**Date of Examination:** _____

**Signature of Internal Examiner**          **Signature of External Examiner**

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# Acknowledgement

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We convey our thanks to our project guide and our inspiring HOD *Dr. Radhika Kotecha* and Project Coordinator *Mrs. Sarita Rathod* who have extended all valuable guidance, help and constant encouragement through various difficult stages for the development of the project. We express our sincere gratitude to our respected Principal *Dr. Suresh Ukarande* and Vice-Principal *Dr. Sunita Patil* for encouragement and facilities provided to us. We would also like to acknowledge the patience that our ever-beloved parents have shown during our efforts and the encouragement we have received from them. Thus, we are fully obliged and convey our thanks to the teaching and as well as non-teaching staff of the department.

# Abstract

We live in a country where agriculture accounts for almost 7.68% of total global agriculture output. Agriculture is mainly concerned with the farming industry. Almost half of the population is directly or indirectly dependent on this industry. This includes agricultural labourers and farmers. As a lot of manpower is involved in farming, government of India launches schemes and allowances for the economic and social welfare of farmers.

Agriculture is considered to be the backbone of India. There are many people who are involved in farming mostly belong to the lower class and are stuck in poverty. Nowadays agricultural development and agricultural productivity has been increased with many updates in traditional agricultural practices. There are many technologies were arisen to increase farming practices. But they could not be receiving the entire profits for the products as there is an involvement of third person for buying seeds and fertilizers. These are the major problems identified in the existing system. The emergence of middlemen in the Indian agricultural marketing sector can be traced back to as early as bartender system times. The interference of middlemen has led to poor lifestyle for the farmers since time immemorial. The development of a portal will serve as a way for the farmers to sell their products across the country. The portal helps the farmers in registering themselves easily and selling their produce. The farmers can gain more profit than usual by using the web portal since it forms a direct connect to the customers. Removing the intervention of the middlemen. The total sale and the earned profit for the sold products, and customer needs are better known by the farmers through the portal. This would overall give a clear idea to the farmer as to what the customer requirements are and to how to grow only the required crops and needed investments for the same as alike. The max-prior algorithm used helps in allocating the highest requirement customer to the farmers to gain better profit. It also helps the farmers in selling their produce quicker. Thus, by this portal the farmers gain more profit hence increasing the country's economy.

# Chapter 1: Introduction

Agriculture is known as skill of cultivating plant or crops. A large population in our nation majorly depends on farming to satisfy their daily needs. Our Indian farming system has been increased with many new technologies to produce maximum farm products and globally India offered with the second position. In today's world, or any item to reach from the farmer to the consumer involves a lot of steps and middlemen which can cause the process to slow down and also cause hoarding of prices where only the farmer and consumer are at a loss. Hoarding of the agricultural production leads to a hike in the price of the crop/end product. Hence, there is a need for a platform that will help the authorities keep a track of the trade, and take down any such hoarding practices being performed at any stage.

Our idea was to create such a web-based platform for the farmers connecting them directly to the consumers and workers thus expanding their business. This platform will allow these stakeholders to interact with each other and will facilitate the hiring of labour and purchase and sale of raw materials and produce respectively. Fresh Fields enables farmers to sell their products online. We provide technology and services to the farmers, merchants, and farm laborers, thus providing them with a wider great experience with an easy-to-use application.

## 1.1 Motivation

The farmers of India are faced with numerous problems in their work. These problems sometimes become the cause a farmer commits suicide. Also, others are propelled to leave their fields and look for other options. All these played an important role in our decision to make a web-based application for farmers.

Every farmer's portal starts with a good motive and highest principle in mind. However, personal interest hacks into their high morals and good work which deviates the initial vision and mission of the organization, many a times. They have to come to their selfish motive to earn from the multi-billion rupees blood banking industry. This increases the need of the purposed system as it overcomes the problem.

## 1.2 Problem Analysis

Despite advances in technology, the agricultural sector is yet to take its advantage in making the farming and related processes hassle-free and simpler. For instance, in the current working, the farmers and consumers connect via a middleman which results in hoarding of the crop prices. In addition, the farmers are required to keep manual records of all the crops they sold, the workers they hired, the equipment they bought, etc. This can be very difficult to maintain sometimes.

### 1.3 Objectives

This project aims to design, develop and implement a web-based application. The objectives of this application are:

- Connect farmers directly to the consumers and workers
- Facilitate hiring of labour and purchase and sale of raw materials and produce
- To make available to farmers the latest technologies and equipment
- To eliminate the hoarding via middleman commissions
- To use latest technologies and available tools to fill the gap between advancement and agricultural sector workers by offering comprehensive system services that aid the farmers.
- Providing fast, easily accessible, safe, reliable and cost-effective system for famers, consumers and workers.

### 1.4 Scope

This study covers three (3) possible users of the system, namely: farmers, customers and workers. The functional areas of this application that lies under the scope of the proposed system is the connection between the farmers and customers and farmers and workers.

The farmers will be able to sell their produce, purchase farm products, hire workers for their farm, keep an inventory of their available crops and keep a record of the hired workers. This application also aims at providing users with a user-friendly platform with easy to access and use features and components such as an online log of their inventory and the hired labour.

# Chapter 2: Literature Review

## 1.1 Related Work

Literatures on the prior research work done by researchers in the Web Development are reviewed.

In an era of technological explosion, humans seem to tend to develop a tight "bond" between them and their smartphones. It would not be an exaggeration to say that these portable devices have become some kind of "wearable", accompanying users almost everywhere and at any time, in contradiction to personal computers or laptops.

Review of similar systems is made and the strength and weaknesses are identified. The similarities between the reviewed systems and the proposed system are outlined as well as the differences. There are various android applications and web sites which are international and state wise but not for locality.

There are various surveys and also feedbacks with technologies are reviewed from existing papers and portal that are listed in the literature survey.

[1]   E-Agriculture Information Management System by SumithaThankachan was proposed that this application has to reach farmers to know the information about crop growing and also to support promoting agricultural products.

## 1.2 Existing System

Existing systems require farmers to fill out a huge form with multiple fields of information before they can log in and avail the features of the application. In current systems, wastage of time is done more and still the farmers are not provided with much beneficial features.

At the present there is no software to keep any records personally for a farmer. It becomes difficult to provide any record immediately at times of emergency. Requires more human efforts in maintaining the crop related information. Manually to keep the accounts is also tedious & risky job & to maintain those accounts in ledgers for a long period is also very difficult. It's difficult to manage and maintain the files. There are chances of damage of files, if the data is stored in the files for duration of time. Privacy is difficult. Time consuming is retrieving, storing and updating the data. It is difficult to keep track the record about the various consumers the produce was sold, the quantity of crops a farmer cultivated and quantity of multiple crops in the warehouse or inventory.


*Limitations of Existing Systems:*

Each and every system has certain drawbacks that lead them into the improper working. Our traditional manual system of farmer-consumer or farmer-worker connection is quite tedious and time consuming and not quite far-fetched. This makes it impossible for the farmer to sell their produce according to their

conditions as not many consumers are available. Along with that, storing the records, of all the purchases and selling done, as a hardcopy can be quite exhausting and not safe.

Apart from the manual system, some android-based or web-based applications have also been developed and are available for the general public to use. These applications too come with their own shortcomings and drawbacks or limitations. The current applications are less secured while registering a user. This can lead to misuse of the application and affect the aim with which it was developed. Along with this, some of these applications are not up-to date with the modern technologies and may not run on the latest softwares or may cause complications which are never a good sign and may fail to deliver its intended purpose. Even the latest applications lack some features or description to the available ones. This makes the application less user friendly and might be difficult for the not-so-technology-friendly people to access the application to its full potential.

*Solutions to Limitations:*

While there are a lot of known limitations to the existing systems, each limitation comes with a solution to overcome them. The solutions to various limitations in the existing systems are:

- The market feature keeps the inventory record for the farmers rather than using manual records.
- The kit and cart feature keep track of farmer's purchases and total bill.
- To make the process and application more user-friendly, the developers can add-in some new features and descriptions to enhance the user experience such as more information about farming process and related information, features that enable the seekers to directly contact the farmers or consumers, etc.

# Chapter 3: Proposed System

**3.1 Proposed Approach and Details**

The FarmWeb will be a web-based application for the farmers. The purpose of this system is to simplify and automate most of the work of farmers. Using this application, farmer can directly connect with the consumers without the involvement of middleman, thus eliminating the middleman commission and hoarding of price. They can also keep an online inventory of their produce, thus avoiding the risks of maintaining a paper log. The user will be required to register before availing the features of this application. The registration details include the name of the user, their email address, contact number, their physical address and district. This automated web-based application will reduce the time and efforts of the farmers. The application contains the following modules:

- ❖ *Farmer Dashboard:* This module will be for the farmers to register themselves and use. Once, they register, they can login to avail various features built for them.

  The Farmer Dashboard has **Article button** where the articles will be displayed.

  **Market button** the farmer will be able to add the available crops or vegetables by choosing their category, produce and variety type from the dropdowns and enter their price and quantity.

  The **Kit button**, farmers will be able to purchase farm products from here.

  **Cart button**, the products which the farmer wants to purchase will be added here and the final bill amount will be displayed.

  **Hire button** the farmers can hire the workers.

  **My crops** will display all the crops available in the inventory.

  **Hired worker** will display all the workers hired by the farmer.

- ❖ *Customer Dashboard:* This module will be for the farmers to register themselves and use. The customers will also be equipped with a list of built-in functionalities.

  **Market button** the customer will be able to purchase the products uploaded by farmers that are present in our inventory, the customer will select his specifications and all products matching that will be displayed along with their price, the customer can then choose a product that he likes and add it to the cart.

  **Cart button** all the products will be added to the cart and the final bill will be generated.

  **Order history** will display all the orders that the customers has ever placed.

- ❖ *Worker Dashboard:* This module will be for the workers to register themselves. The workers or people in search of job in agricultural sector can use this application to let farmers know that they are available for labour hire. The farmers will be shown a list of available workers from this list
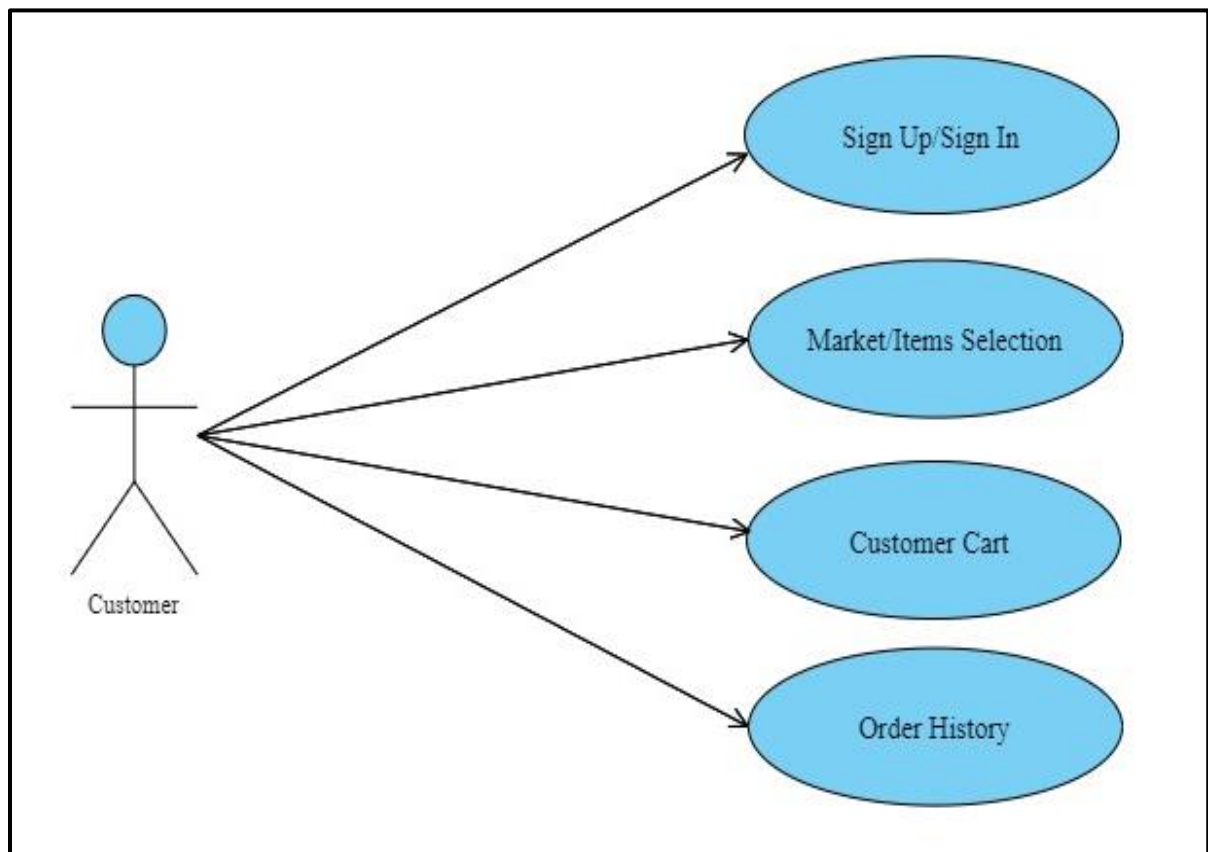
of registered workers based on the salary expectations of the worker. The user can upload their biodata to let farmers know about their skills and other details.
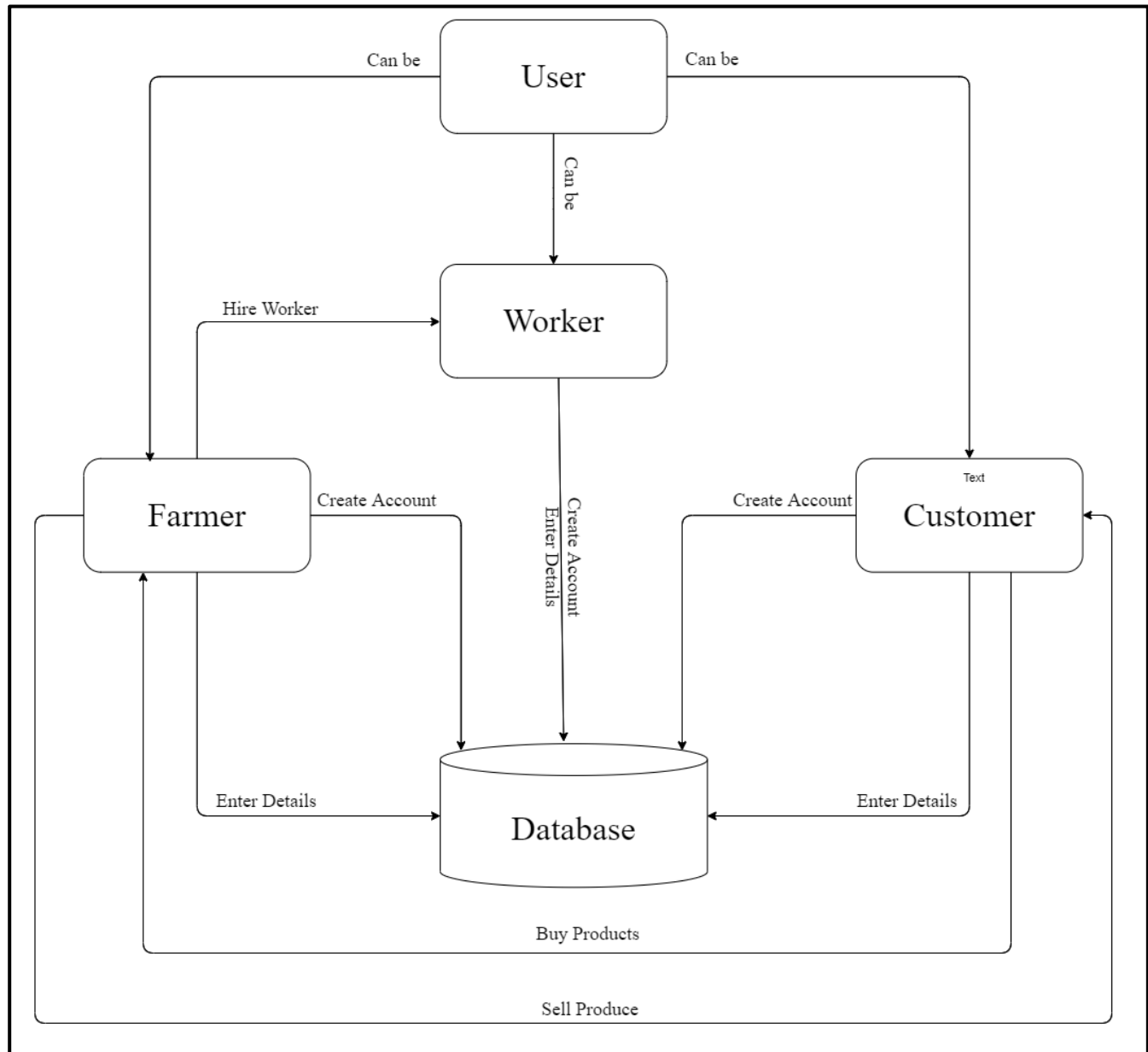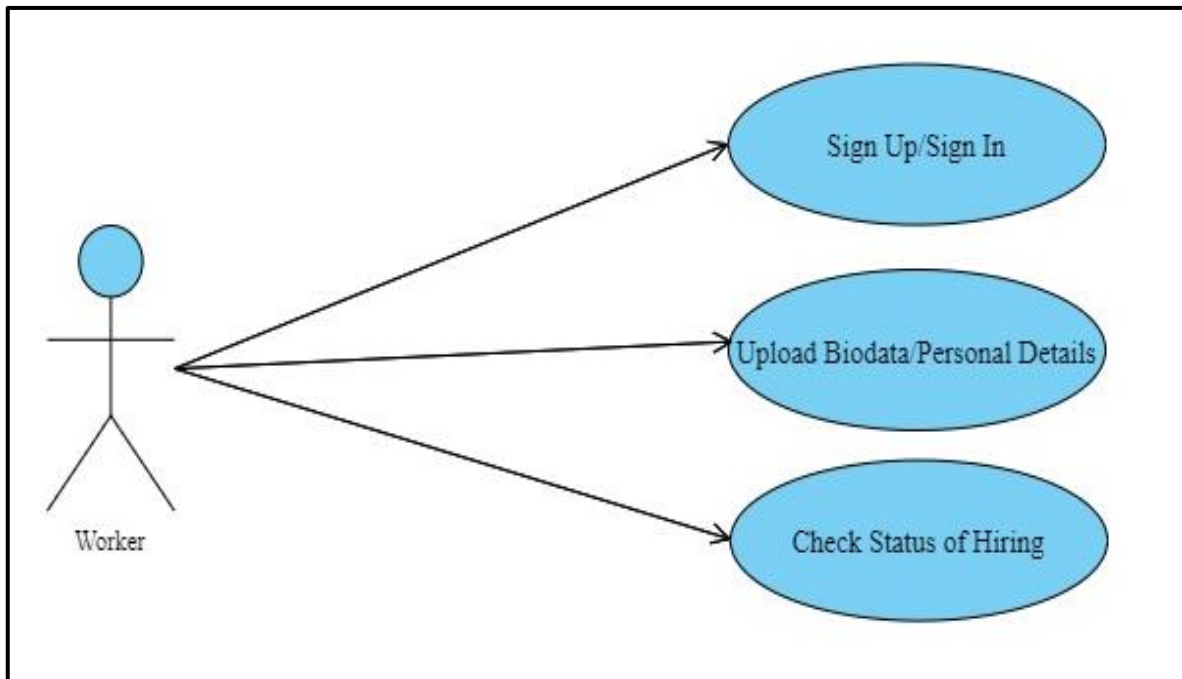


**Fig 3.1.1 Block Diagram**
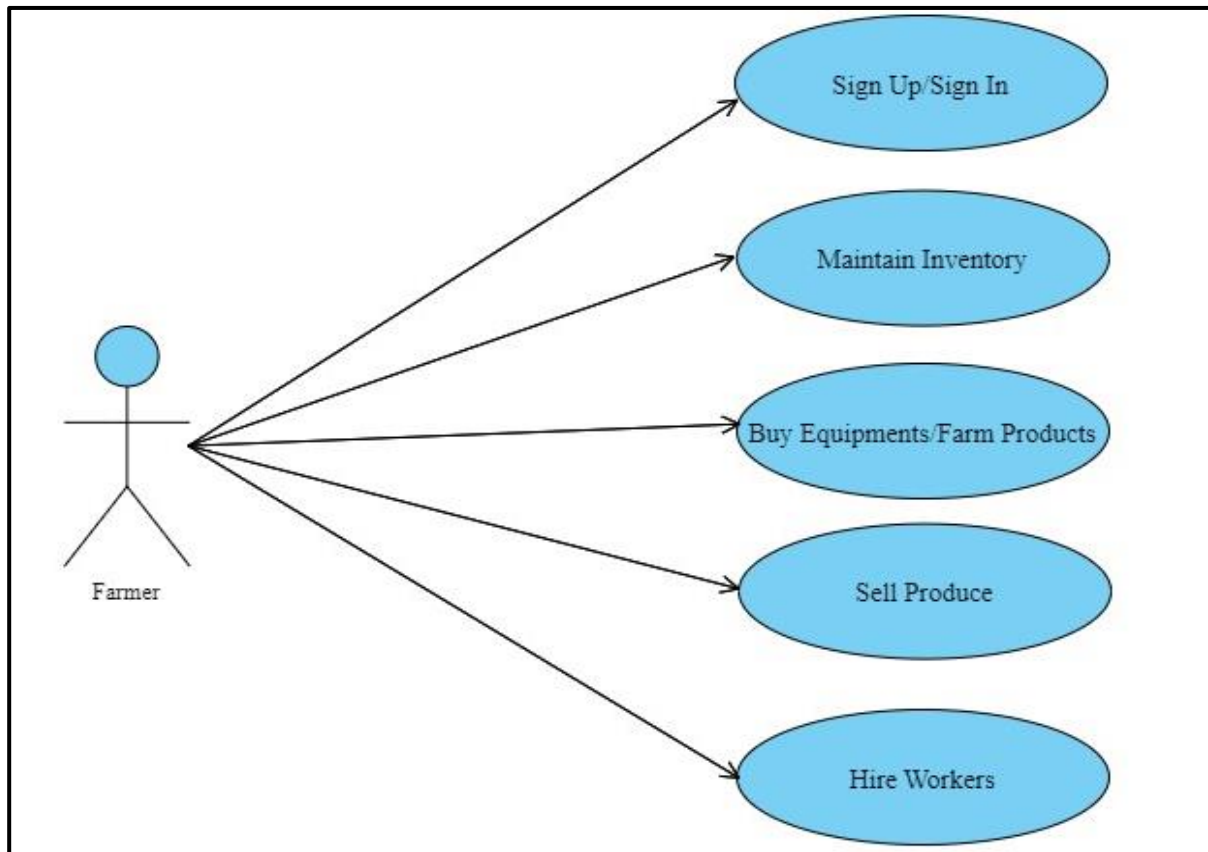
**Fig 3.1.2 Use-Case Diagram for Farmer**



**Fig 3.1.2 Use-Case Diagram for Customer**

**Fig 3.1.2 Use-Case Diagram for Worker**

## 3.2 Innovation in Idea

Along with the features of the existing portal and applications for Farmers, we have included various other features and components to make it more user friendly and helpful for the users, i.e., the farmers, customers and workers. Some notable innovations are:

- ❖ *Hire:* This feature works as an online hiring system for farmers to hire labour for their field based on the expected salary that the respective worker demands.
- ❖ *Cart:* The cart works as a feature that lets farmers list out the items they want to buy and save them for later purchase.
- ❖ *Article:* Here the farmers can read various articles related to farming and keep themselves updated about the laws and schemes released for farmers.
- ❖ *My Crop:* It works like an online inventory for the farmer to maintain details about the type of crop and the quantity of it present in the farmer's warehouse.

## 3.3 Timeline



| Plan of Execution | | The FarmWeb | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Start Date** | | Feb 5, 2022 | | | | | | | | | | |
| **Week** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | **Notes** |
| **Starting** | Feb 5 | Feb 12 | Feb 21 | Feb 26 | Mar 5 | Mar 12 | Mar 19 | Mar 26 | Apr 2 | Apr 9 | Apr 16 | Apr 23 | | |
| **Phase One** | Finalizing the topic | | | | | | | | | | | | | Discussing the Topic with mentor/guide and finalizing it |
| | | Literature survey and background work | | | | | | | | | | | | Doing literature survey and background study of existing systems and their features |
| | | | Panel Presentation - I | | | | | | | | | | | Panel Presentation of Project- presenting an overview to the mentor |
| | | | | Research on major features and requirements | | | | | | | | | | Research on features to include and requirements in terms of coding knowledge |
| **Phase Two** | | | | | Learning Python basics | | | | | | | | | Learning Python to implement project |
| | | | | | | Designing UI | | | | | | | | Designing the UI to work upon |
| | | | | | | | Learn tkinter and PIL | | | | | | | Learn tkinter and PIL for implementation |
| **Phase Three** | | | | | | | | Implementing Features | | | | | | Implementing features separately |
| | | | | | | | | | Trial and testing features and GUI | | | | | Testing the features and their accuracy in achieving required purpose |
| | | | | | | | | | | Integration of Features | | | | Integrating the features one by one |
| | | | | | | | | | | | Project Testing | | | Testing the features usability on various systems and noting the outcomes and finishing off the implementation phase |
| | | | | | | | | | | | | Panel Presenttation-III | | Presenting our project to mentor |

**Fig. 3.3.1 Timeline for project**

## 3.4 Roles and Responsibilities

- We worked together in researching the topic, finalizing the features of the application, designing the UI and initializing the database.
- The team together worked on the Frontend part of the project with suggestions and discussions involving everyone in the team.
- Inputs and contributions were made by everyone in the team in preparing the presentations and reports of the project.
- Worked together in making the android application more user-friendly and completed the finalization of Frontend and Backend parts along with all the documentations and presentations.

# Chapter 4: Implementation Details and Results

**4.1 Technology Stack**

The making of "FarmWeb" web-based application requires the use of some client-side as well as server-side softwares to make it user friendly and help in achieving the purpose it was built for. Some of the major technology used in this project are:

## SQLite

SQLite stores the entire database (definitions, tables, indices, and the data itself) as a single cross-platform file on a host machine. It implements this simple design by locking the entire database file during writing. SQLite read operations can be multitasked, though writes can only be performed sequentially.

Reading and writing operations are very fast for SQLite database. It only loads the data which is needed, rather than reading the entire file and hold it in memory. If you edit small parts, it only overwrites the parts of the file which was changed. It updates your content continuously so, little or no work is lost in a case of power failure or crash. SQLite is less bugs prone rather than custom written file I/O codes. SQLite queries are smaller than equivalent procedural codes so, chances of bugs are minimal.



## Tkinter

The tkinter package ("Tk interface") is the standard Python interface to the Tcl/Tk GUI toolkit. Tkinter is the standard GUI library for Python. Python when combined with Tkinter provides a fast and easy way to create GUI applications. Tkinter provides a powerful object-oriented interface to the Tk GUI toolkit.

Advantages of Tkinter are:

- Tkinter is easy and fast to implement as compared to any other GUI toolkit.
- Tkinter is more flexible and stable.

- Tkinter is included in Python, so nothing extra needed to download.

- Tkinter provides a simple syntax.

- Tkinter is really easy to understand and master.

- Tkinter provides three geometry managers: place, pack and grid. That is much more powerful and easy to use.
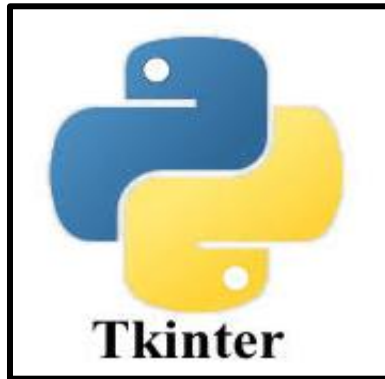


## PIL (Python Imaging Library)

**Python Imaging Library** is a free and open-source additional library for the Python programming language that adds support for opening, manipulating, and saving many different image file formats. PIL is Python Imaging Library which provides the python interpreter with image editing capabilities. The image module provides a class with the same name which is used to represent a PIL image.

Pillow offers several standard procedures for image manipulation. These include:

- per-pixel manipulations,

- masking and transparency handling,

- image filtering, such as blurring, contouring, smoothing, or edge finding,

- image enhancing, such as sharpening, adjusting brightness, contrast or colour,

- adding text to images and much more.

## 4.2 Implementation Parameters

The making of this web-based application requires a well-defined database to store multiple types of information on every step of use of the application. The database structure of FarmWeb is as follows:



**Fig 4.2.1 Schema Diagram for Database**
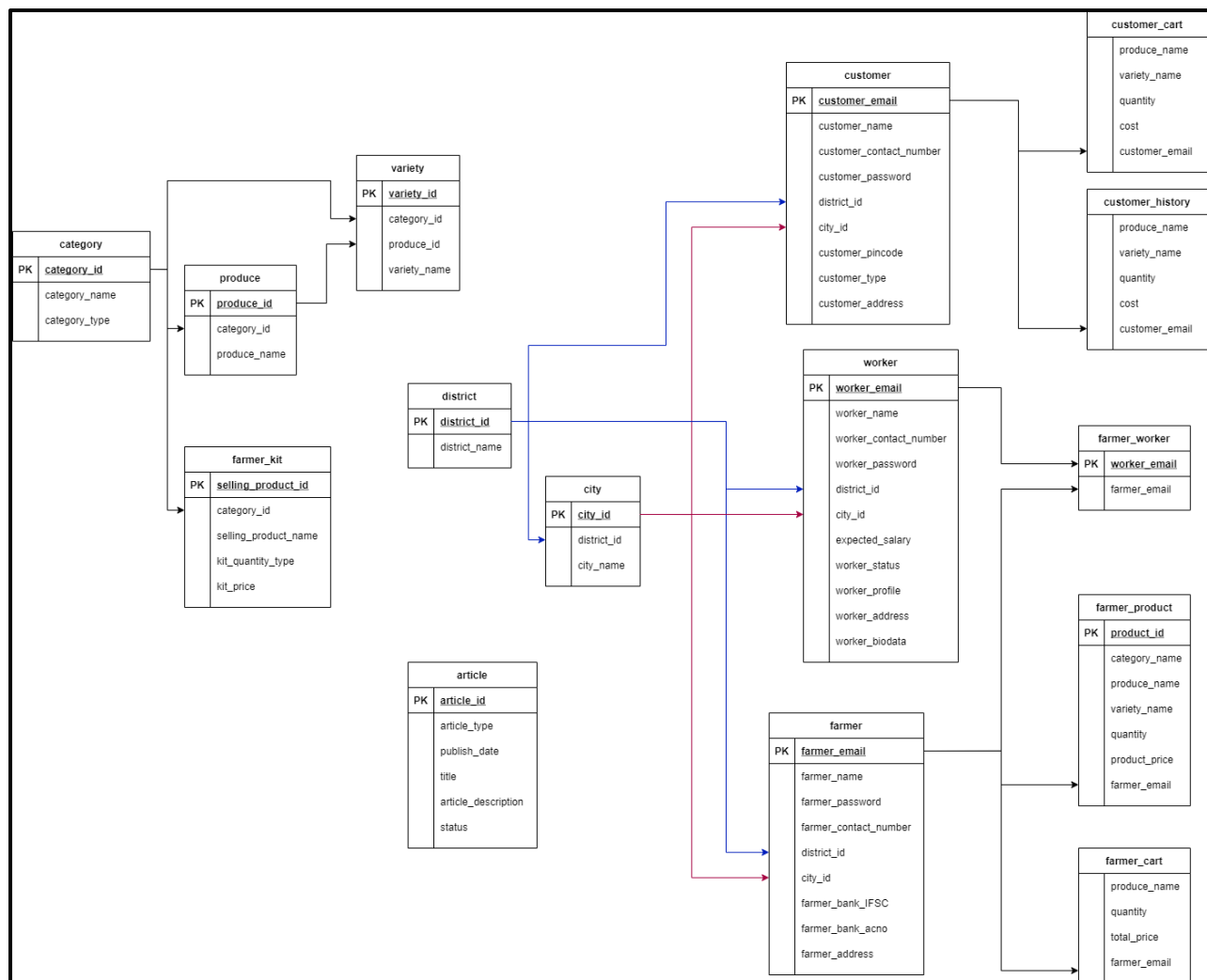
DB Browser for SQLite - C:\Users\Manav Gupta\Downloads\Farmers portal\Portal.db

File  Edit  View  Tools  Help

New Database   Open Database   Write Changes   Revert Changes   Open Project   Save Project   Attach Database   Close Database

Database Structure   Browse Data   Edit Pragmas   Execute SQL

Create Table   Create Index   Modify Table   Delete Table   Print

| Name | Type | Schema |
|---|---|---|
| ∨ ▦ Tables (16) | | |
| › ▦ article | | CREATE TABLE article (article_id int(10) NOT NULL PRIMARY KEY,article_type varchar(25) NOT NULL,publish_date date NOT NULL,title varchar(100) NOT NULL,article_description text NOT NULL,ar |
| › ▦ category | | CREATE TABLE category (category_id INTEGER NOT NULL PRIMARY KEY, category_name TEXT NOT NULL,category_type TEXT NOT NULL) |
| › ▦ city | | CREATE TABLE city (city_id INTEGER NOT NULL PRIMARY KEY,district_id INTEGER NOT NULL, city_name TEXT NOT NULL,FOREIGN KEY (district_id) REFERENCES district (district_id)) |
| › ▦ customer | | CREATE TABLE customer (customer_name TEXT NOT NULL,customer_contact_number INTEGER NOT NULL,customer_email TEXT NOT NULL PRIMARY KEY,customer_password TEXT NOT NULL,dis |
| › ▦ customer_cart | | CREATE TABLE customer_cart (produce_name TEXT NOT NULL,variety_name TEXT NOT NULL,quantity REAL NOT NULL, cost REAL NOT NULL, customer_email TEXT NOT NULL,FOREIGN KEY (cust |
| › ▦ customer_history | | CREATE TABLE customer_history (produce_name TEXT NOT NULL,variety_name TEXT NOT NULL,quantity REAL NOT NULL, cost REAL NOT NULL, customer_email TEXT NOT NULL,FOREIGN KEY (c |
| › ▦ district | | CREATE TABLE district (district_id INTEGER NOT NULL PRIMARY KEY, district_name TEXT NOT NULL) |
| › ▦ farmer | | CREATE TABLE farmer (farmer_name TEXT NOT NULL,farmer_password TEXT NOT NULL,farmer_email TEXT NOT NULL PRIMARY KEY,farmer_contact_number TEXT NOT NULL,district_id INTEGER |
| › ▦ farmer_cart | | CREATE TABLE farmer_cart (produce_name TEXT NOT NULL, quantity REAL NOT NULL,total_price REAL NOT NULL,farmer_email TEXT NOT NULL ,FOREIGN KEY (farmer_email) REFERENCES farme |
| › ▦ farmer_kit | | CREATE TABLE farmer_kit (selling_product_id INTEGER NOT NULL,category_id INTEGER NOT NULL, selling_product_name TEXT NOT NULL, kit_quantity_type TEXT NOT NULL,kit_price REAL NOT N |
| › ▦ farmer_product | | CREATE TABLE farmer_product (product_id INTEGER PRIMARY KEY AUTOINCREMENT,category_name TEXT NOT NULL, produce_name TEXT NOT NULL,variety_name TEXT NOT NULL,quantity REA |
| › ▦ farmer_worker | | CREATE TABLE farmer_worker (worker_email TEXT NOT NULL PRIMARY KEY, farmer_email TEXT NOT NULL,FOREIGN KEY (worker_email) REFERENCES worker (worker_email) ON DELETE CASCA |
| › ▦ produce | | CREATE TABLE produce (category_id INTEGER NOT NULL, produce_id INTEGER NOT NULL PRIMARY KEY, produce_name TEXT NOT NULL,FOREIGN KEY (category_id) REFERENCES category (cate |
| › ▦ sqlite_sequence | | CREATE TABLE sqlite_sequence(name,seq) |
| › ▦ variety | | CREATE TABLE variety (category_id INTEGER NOT NULL, produce_id INTEGER NOT NULL,variety_id INTEGER NOT NULL PRIMARY KEY, variety_name TEXT NOT NULL ,FOREIGN KEY (category_id) |
| › ▦ worker | | CREATE TABLE worker (worker_name TEXT NOT NULL,worker_contact_number TEXT NOT NULL, worker_email TEXT NOT NULL PRIMARY KEY,worker_password TEXT NOT NULL,district_id INTEGE |
| ▦ Indices (0) | | |
| ▦ Views (0) | | |
| ▦ Triggers (0) | | |

UTF-8

**Fig 4.2.2 Database Structure**

| le_type | publish_date | title | article_des |
|---|---|---|---|
| Filter | Filter | Filter | Filter |
| | 2016-02-13 | Raise agriculture productivity | The Challenge of Sus |
| | 2016-02-11 | Modern Farming helps farmer improv... | Kurwa Nyaroche is a |
| | 2016-02-09 | Improvements on agriculture method... | Improvement of agric |
| | 2016-02-01 | Sustainable Agriculture Techniques | Sustainable agricultu |
| | 2016-02-02 | Improving Soil Quality & Cover Crops | Improving Soil Qualit |
| | 2016-03-01 | Check soil health before use of ... | A deficient monsoon |
| | 2016-03-05 | An IT Revolution in Farming | Present era is an era |
| | 2016-03-07 | A Price Stabilisation Fund to help ... | Since horticultural pr |

Table: ▦ category

| | category_id | category_name | category_type |
|---|---|---|---|
| | Filter | Filter | Filter |
| 1 | 1 | Fruit | Produce |
| 2 | 2 | Cereals-and-Pulses | Produce |
| 3 | 3 | Seeds | Produce |
| 4 | 4 | Spices | Produce |
| 5 | 5 | Vegetable | Produce |
| 6 | 6 | Dry-Fruit-and-Nuts | Produce |
| 7 | 7 | Edible-Oil | Produce |
| 8 | 8 | Fertilizers | SellingProduct |
| 9 | 9 | Fodders | SellingProduct |
| 10 | 11 | Herbal-Products | Produce |
| 11 | 12 | Machinery-and-Equipments | SellingProduct |
| 12 | 14 | Other-Agro-Products | Produce |
| 13 | 15 | Beverages | Produce |
| 14 | 19 | Compost | SellingProduct |
| 15 | 20 | Biofertilizers | SellingProduct |
| 16 | 21 | Chemical-Fertilizer | SellingProduct |
| 17 | 23 | Urea-Fertilizer | SellingProduct |
| 18 | 24 | Organic-Fertilizers | SellingProduct |
| 19 | 25 | Organic-Manure | SellingProduct |

Table: ▦ farmer_kit

| | selling_product_id | category_id | selling_product_name | kit_quantity_type | kit_price |
|---|---|---|---|---|---|
| | Filter | Filter | Filter | Filter | Filter |
| 1 | 1 | 8 | Natural-Fertlizer | Kilogram | 135.0 |
| 2 | 1 | 8 | Natural-Fertlizer | Kilogram | 135.0 |
| 3 | 2 | 23 | Urea-Fertilizer | Kilogram | 249.0 |
| 4 | 3 | 12 | Hand-Carts | Piece | 899.0 |
| 5 | 4 | 12 | Composter | Piece | 12680.0 |
| 6 | 5 | 20 | Bio-Fertilizers | Kilogram | 200.0 |
| 7 | 6 | 12 | Digging-Shovel | Piece | 350.0 |
| 8 | 7 | 24 | Organic-Fertilizer | Kilogram | 460.0 |
| 9 | 8 | 26 | Seeds... | Gram | 100.0 |
| 10 | 9 | 12 | Transfer-Shovel | Piece | 300.0 |
| 11 | 10 | 12 | Spades | Piece | 399.0 |

**Fig 4.2.3 Database Tables**

**4.3 Preliminary Results**

*Welcome Page:* User is greeted with the welcome page on starting the application.
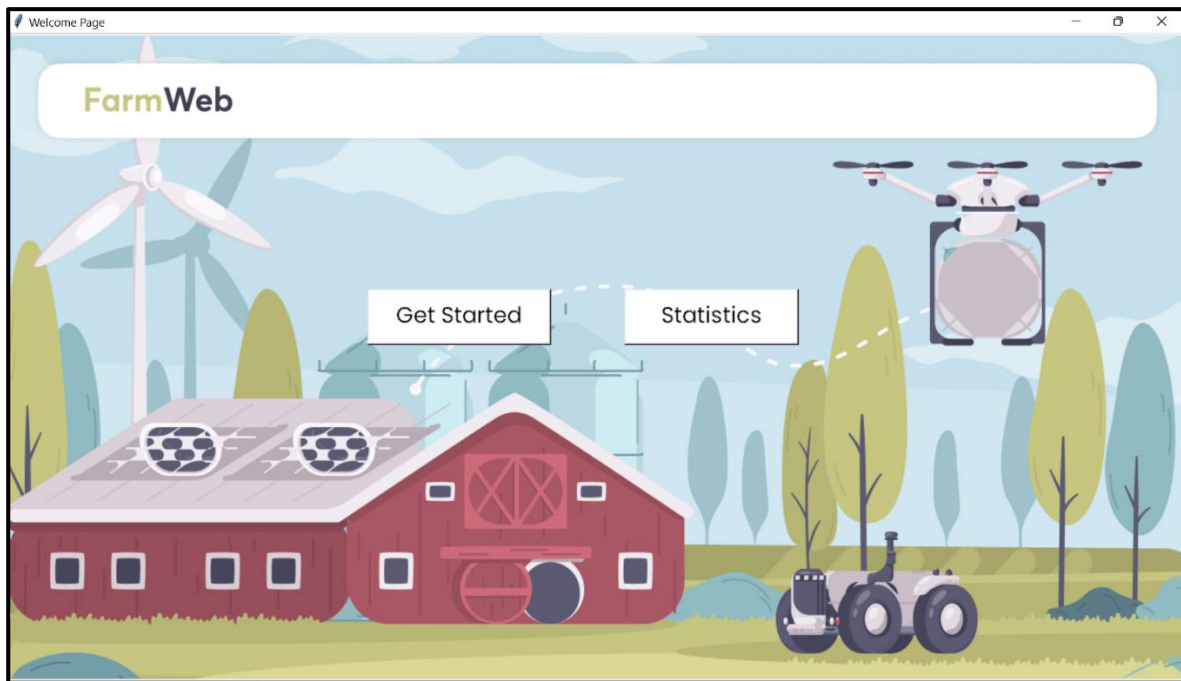


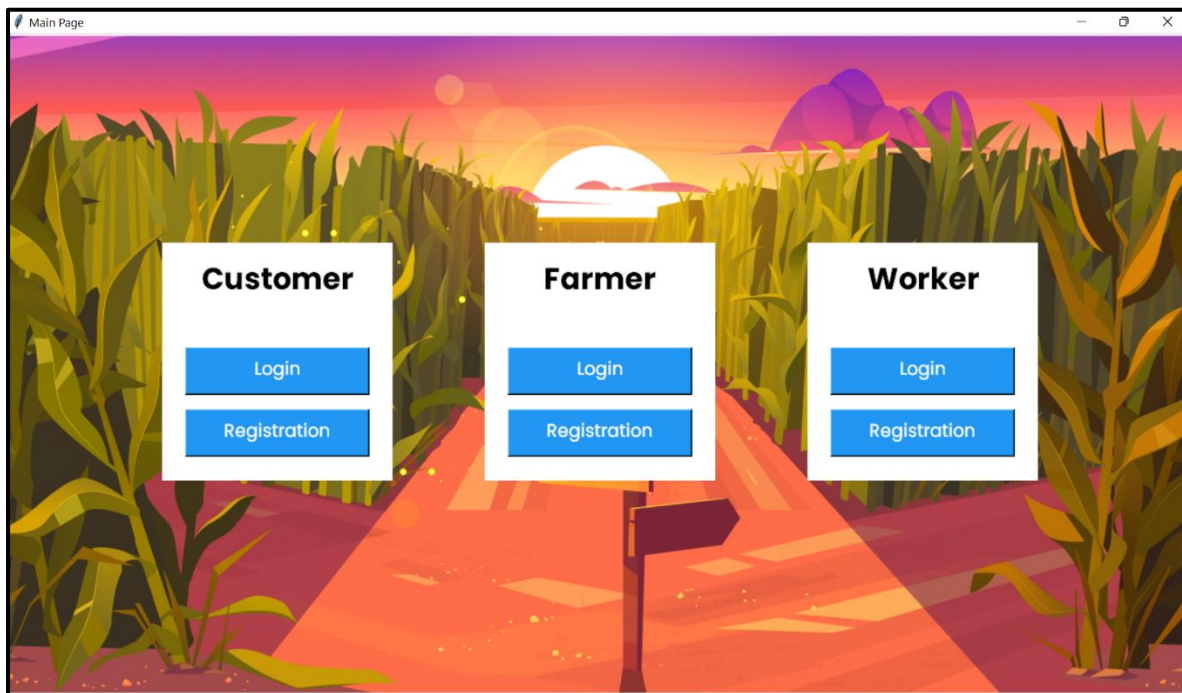**Fig. 4.3.1 Welcome page**

*Statistics Page:* User can see various statistics related to agriculture.



**Fig. 4.3.2 Statistics Page**

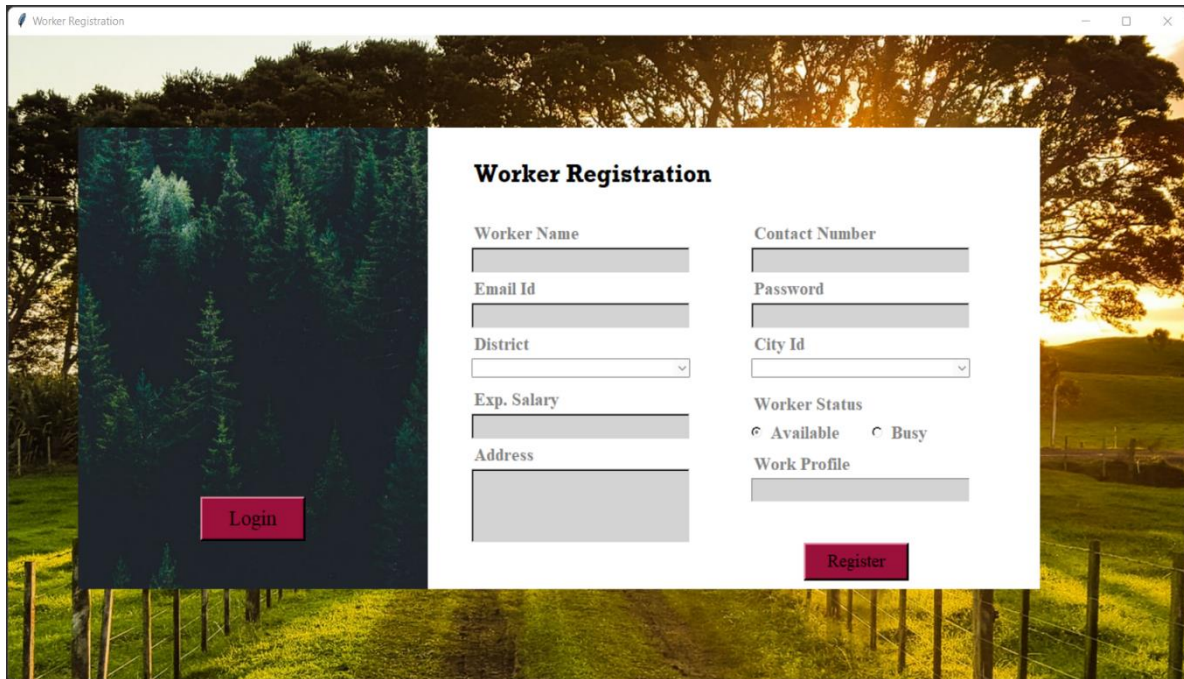*Main Page:* From this page the users get separate features to avail based on their type.



**Fig. 4.3.3 Main Page for user to login or register**

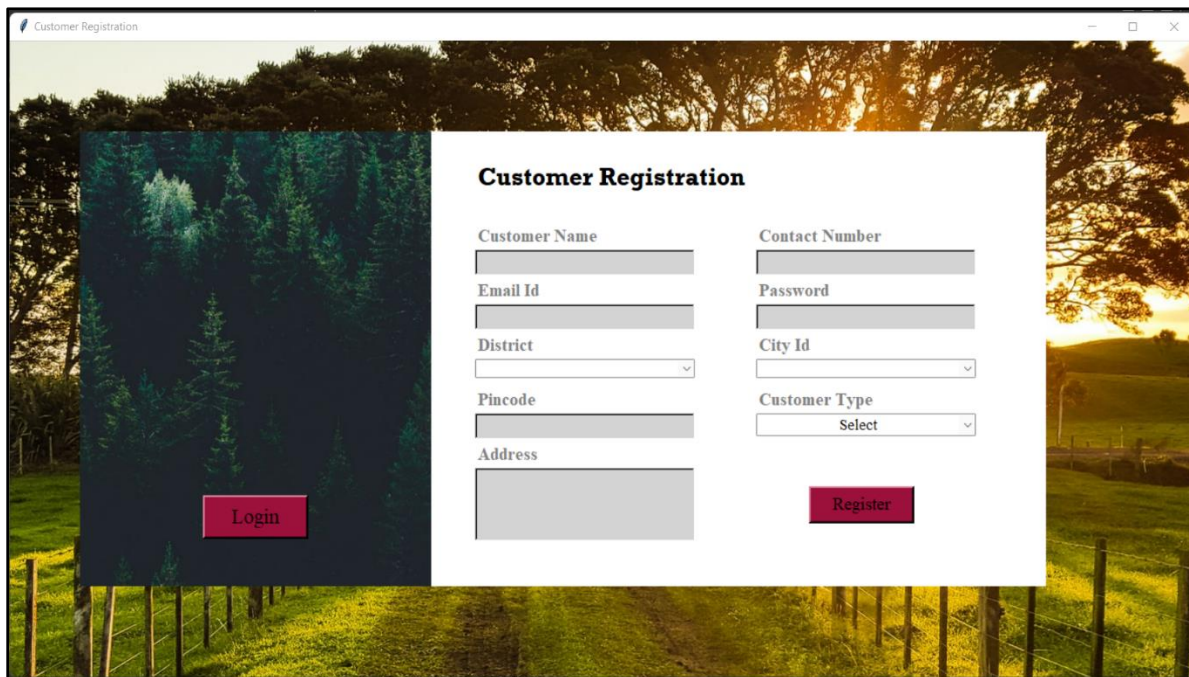*Registration Pages:* The new users can register in their respective category.



**Fig. 4.3.3 Registration page for Farmer**

**Fig. 4.3.4 Registration page for Worker**



**Fig. 4.3.5 Registration page for Customer**

*Login Pages:* Already registered users can login to their accounts via these login pages.
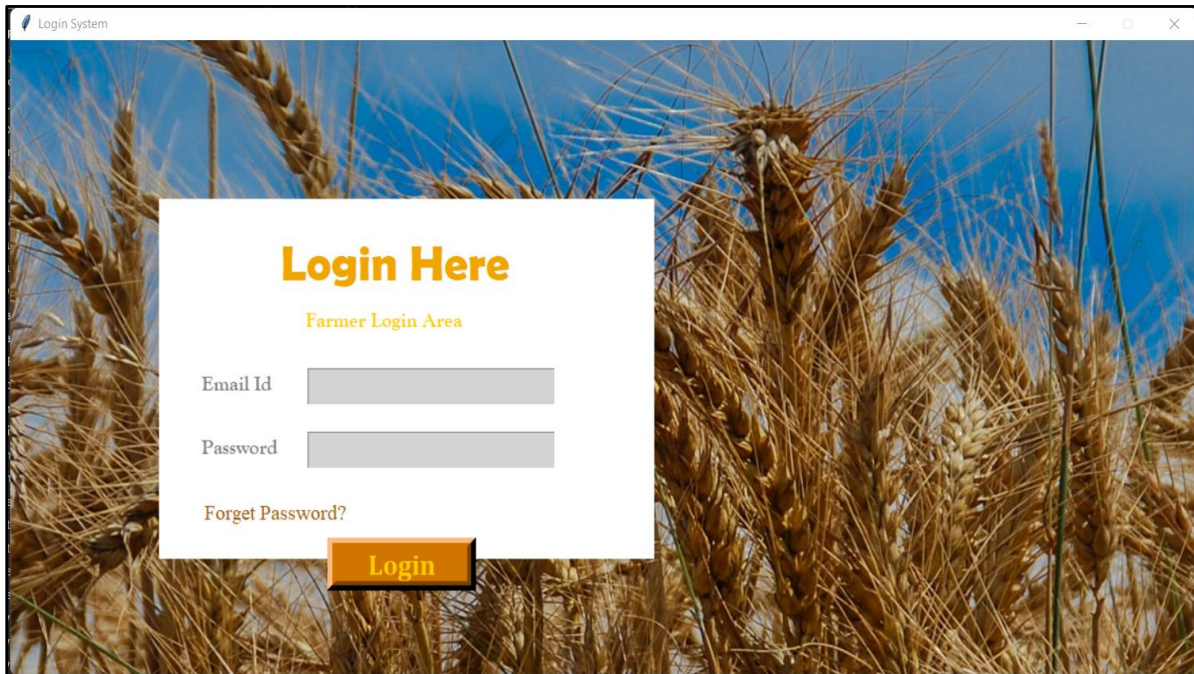


**Fig. 4.3.6 Login page for Farmer**
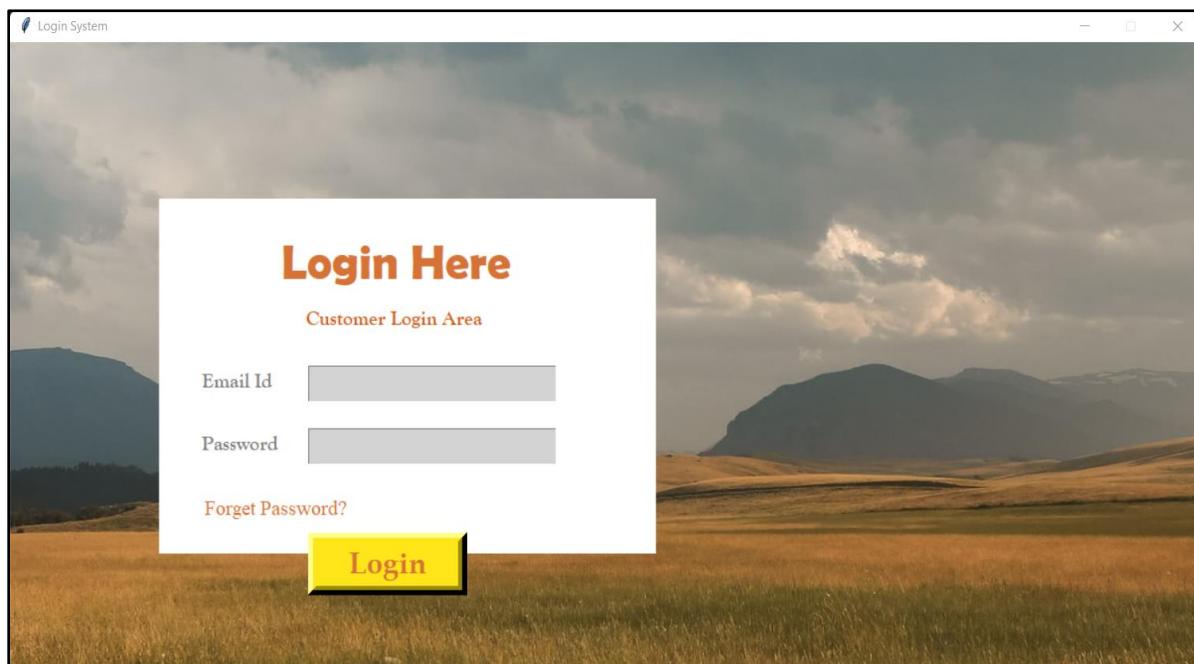


**Fig. 4.3.7 Login page for Consumer**
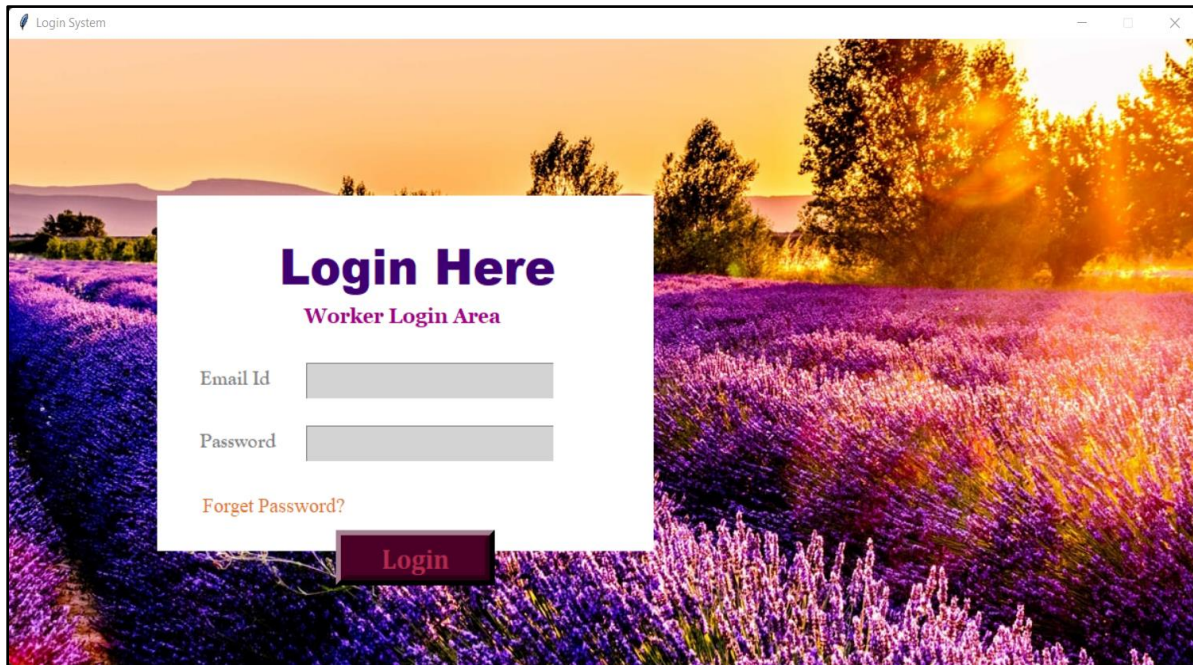
**Fig. 4.3.8 Login page for Worker**
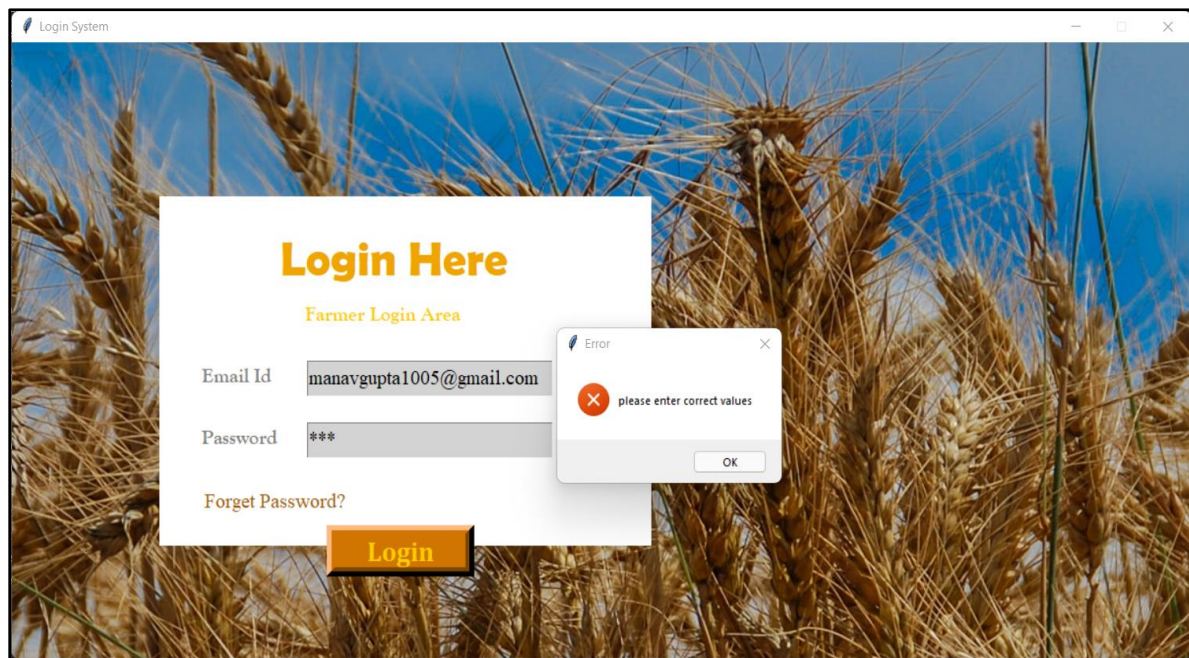


**Fig. 4.3.9 Unsuccessful login response**
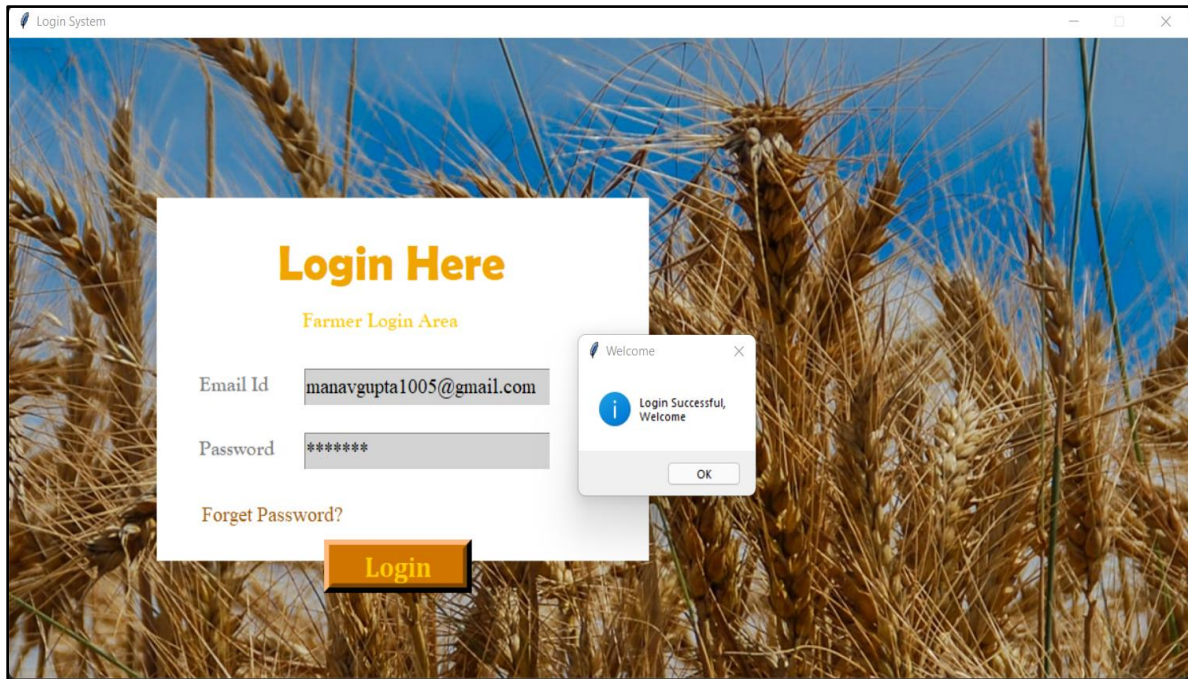
**Fig. 4.3.10 Successful login response**

*Dashboards:* After the user logs-in to their account, they are directed to the respective dashboard where they get various features at their disposal.
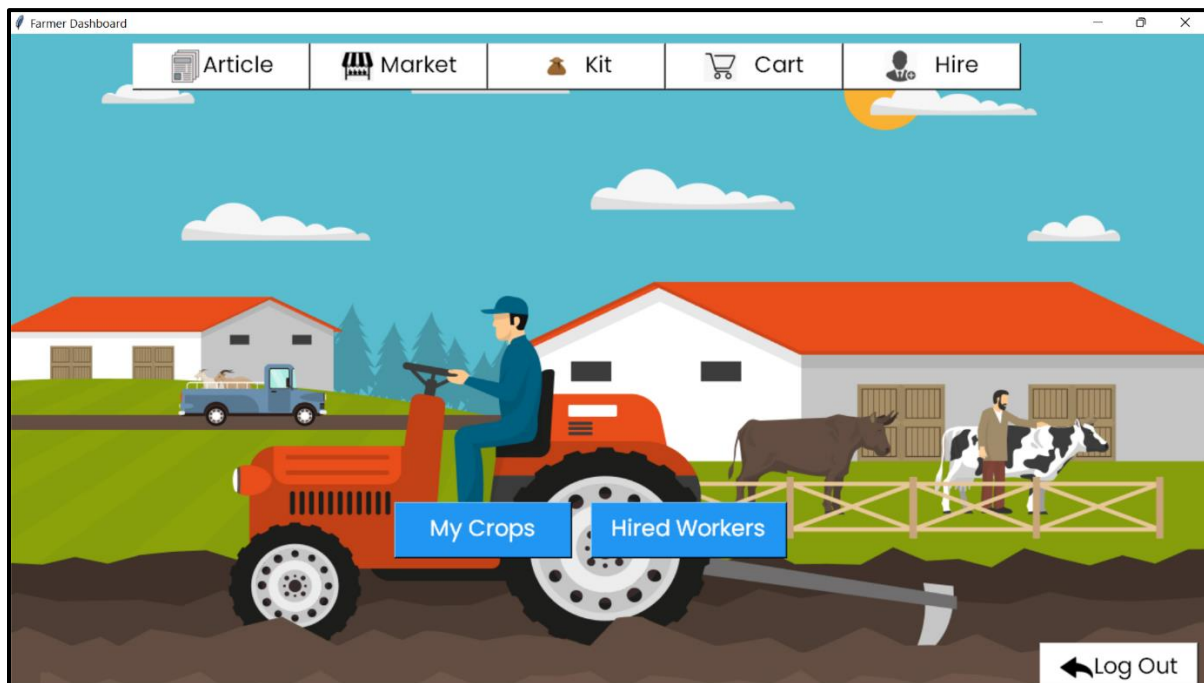


**Fig. 4.3.11 Farmer Dashboard**
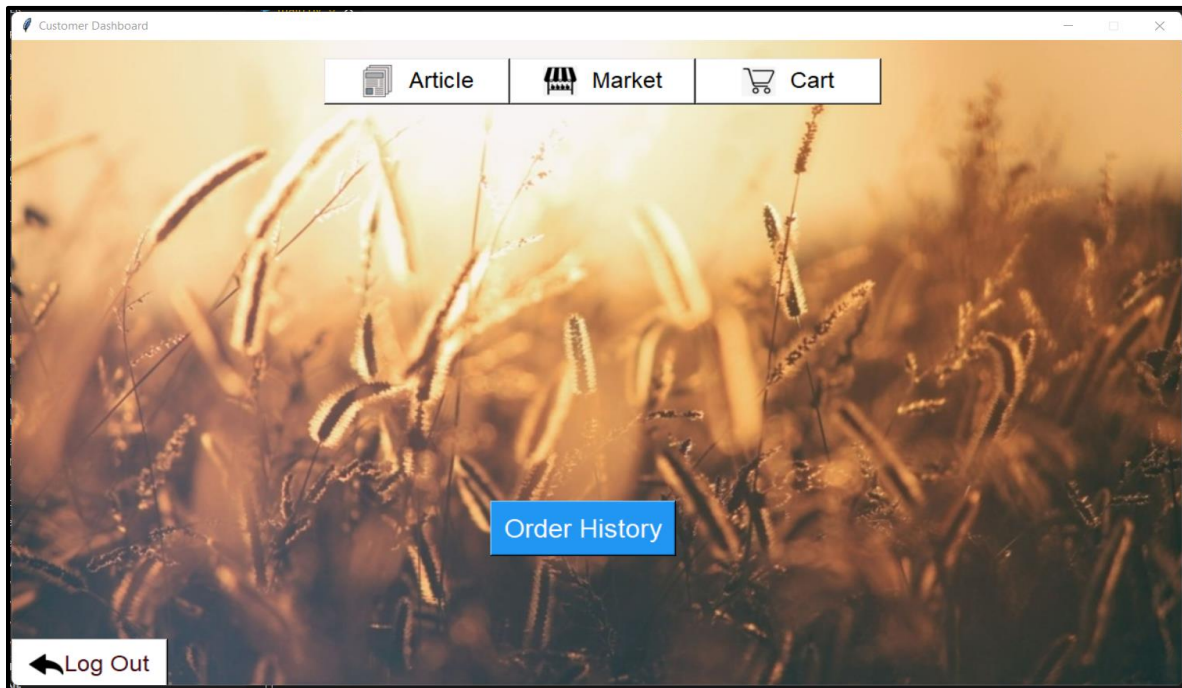
**Fig. 4.3.12 Customer Dashboard**
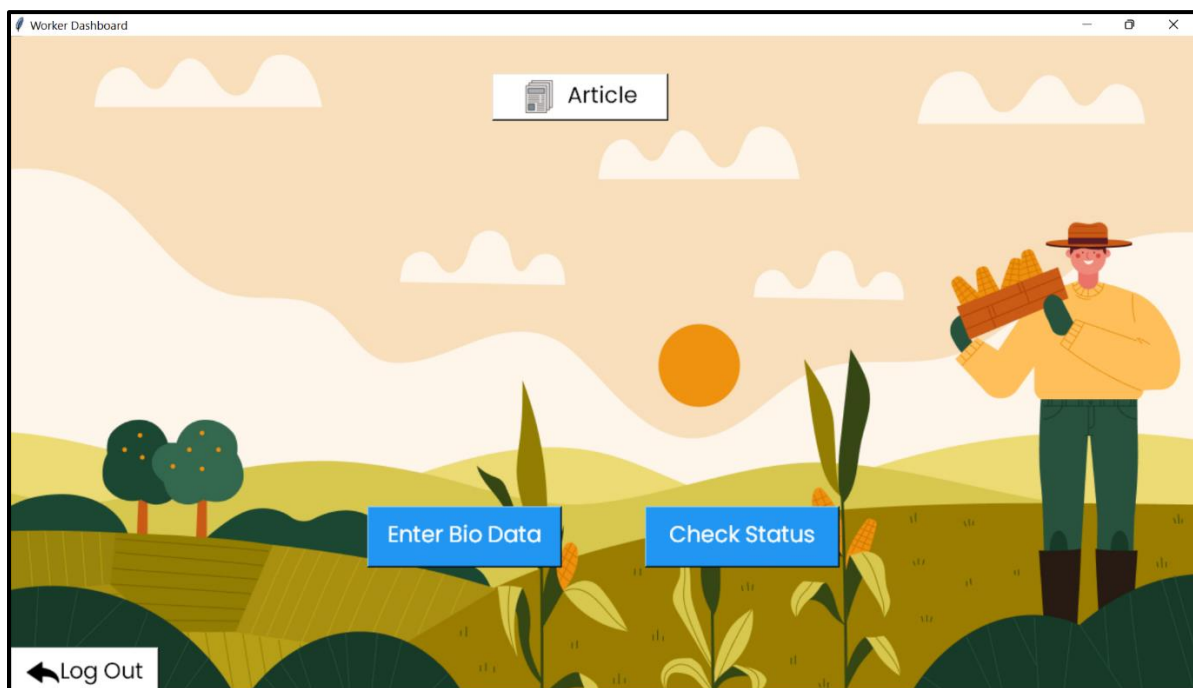

**Fig. 4.3.13 Worker Dashboard**

*Farmer Feature:*


**Fig. 4.3.14 Add produce to inventory**


**Fig. 4.3.15 Buy equipment and farm products**


**Fig. 4.3.16 Hire Workers**

**Fig. 4.3.17 Customer Market Window**



**Fig. 4.3.18 Customer Cart**

*Worker Feature:*



**Fig. 4.3.19 Worker Status window**
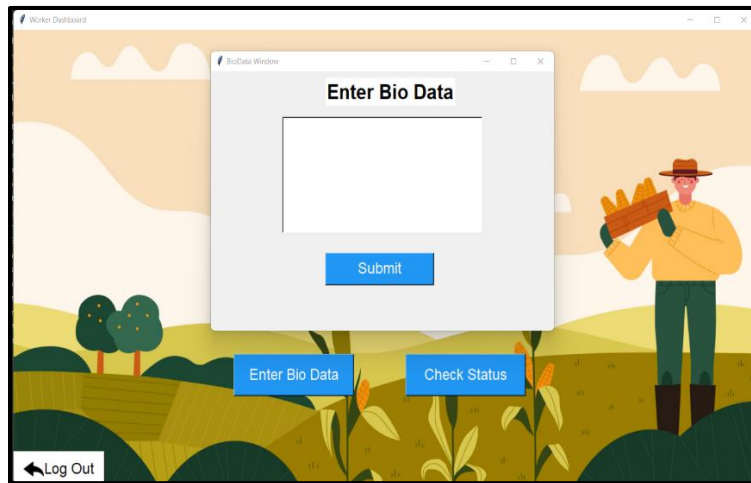
**Fig. 4.3.20 Worker Bio Data window**

# Chapter 5: Conclusion

Our application helps to provide the hardworking farmers of our country the business and clients that they need and most of all, deserve. It is free and open-source and easily accessible to even someone who is not technically sound. It helps the wholesalers and retailers in buying produce directly from a large number of farmers. Thereby, it enables the wholesalers and retailers in expanding their business. It features online shopping for fertilizers, pesticides, machinery & tools, etc. It enables farmers to hire laborers, which in turn, will help the farm laborers to find small jobs by having a work profile on the website. As a whole, 'FarmWeb' provides a concept of virtual agricultural trade to its users. Not only does this application help the farmers, it also saves the consumers from the hoarded price via middleman commissions. In modern world, where everyone has a smartphone to use, a web-based application will surely aid the farmers.

This Project will thus pave the way for an efficient means to carry out the buying and selling of the products. Farmers will earn money as per the work they have done and will not suffer losses. Also, the system it completely online (webapp/app) thereby reducing the price aspect of the system tremendously. This system is proposed to replace the existing system where the farmer has to suffer between the manufacturers and the traders.

## Future Scope:

Our application can we converted into an Android/iOS application thus making it easily accessible to the majority population of India.

There are many ways in which this application could be updated to be more efficient and have a wider scope in the future. Some of them are:

1. Readability of the application as a whole in India could be improved by adding a feature to translate its pages into local languages like Hindi and Marathi.

2. Connectivity across the users on the application could be enhanced by adding modules like Photo Uploading to allow the farmers to display their crops, or a messaging portal where the users could communicate with each other. There could also be Audio/Video calls that would be made available to the users.

3. Transportation, travel and other miscellaneous commodities could be incorporated into the app itself so the users would not need to refer to third-parties for it.

4. In app crop testing and quality check facility can be integrated in the app.

5. Language Translation API for the website.

6.  Dataset to bet appended from the user after their individual experience for an efficient algorithm.

7.  Customized timeline for each user according to all the crops he/she chooses.

All these steps can help in making this web-based application more effective and ready for use nationally and worldwide. With proper and more advanced implementations in this application, one can make it more user-friendly, with lots of features to help the farmers in need.

# Chapter 6: References

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