

Transforming Agriculture with Innovative Methods

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Abstract:- We eat food in our everyday lives, and our existence is largely dependent on it. Farms and other sources provide a significant portion of our food. These farmers labour tirelessly to cultivate and serve a large number of people around the country, providing them with a source of income. Farmers, on the other hand, are unable to earn a profit and are forced to live in poverty as a result of intermediaries in the sale of their final products. With the fast advancement of technology, consumer demand for agriculture is continuously increasing. Farmers will undoubtedly feel the strain as a result of the increased demand, which will manifest itself in a variety of ways, including falling commodity prices, rising debt, and the use of pesticides. Thousands of farmers have committed suicide in recent years as a result of agricultural insecurity, which ought to be addressed. Farmers must also contend with finite fossil fuel supplies, limited natural resources, and a changing climate. To address this pressing challenge, agriculture has undergone a significant shift toward a more industrialized and technologically based approach. The pressure on agriculture to feed the world's population is increasing. As a result of land and water scarcity, as well as the global need to safeguard natural resources, the demand-supply gap is expanding. This website will assist farmers in gathering all important information about their crops, as well as providing accurate information on modern agricultural technologies, as well as selling their crops at a profit and hiring labor.

Keywords:- Farmer, Shopping cart, Customer, labor, E-content, Camps.

I. INTRODUCTION

Agriculture is India's primary food supply, and farmers are the country's economic backbone. In today's language, in today's society, everyone uses a smartphone, whether they are educated or not. It is not dependent on education, but it is dependent on technology. Farmers are becoming scarcer by the day, and new farmers lack basic farming expertise. This application's goal is to give information on farming. Information about seeds is more significant than information about farming since you can use seeds in farming if you know about them. On the admin side, this application provided seeds, soils, fertilizer, and crop sealing, just like marketing. The most important thing to keep in mind about seeds and soils is that they are both dependent on the soil in which the crop grows. Because the crop or seeds yield a higher profit, soil-friendly farming may be carried out and yield higher earnings. Fertilizers and insecticides are the most important tools in farming. During that time of year, seasonal foods or crops bring in a lot of money. Fertilizers and pesticides are used to boost crop yields, but they affect the soil as well as the food test.

That is the application when that information is also provided. As we grow through the current technological period, we may see that numerous engineering-related applications are quite beneficial to society's advancement. People utilize smart phones to do daily duties such as shopping, paying bills, managing work, and much more in today's technological world. The goal of this project is to integrate its characteristics into people's life so that they may buy food directly from the farm, with earnings going to the farmers. Because we follow a supply chain for agriculture products in India, things are too indirect for the farmers, resulting in poverty for the farmers while the middlemen benefit, ultimately making them wealthy. To disrupt the indirect sales supply chain, we could utilize this app to link the farmer directly to the client and sell as required. The administrator can host a farm camp in which students from various universities may participate and provide information to farmers about new technologies, as well as allow farmers to ask questions. The E-content area includes videos on agricultural methods, such as how to turn wet waste into manure and simple tips for growing crops at home. It will also help farmers increase their output and profit margins. This website allows farmers to sell their products online as well as acquire tools and seeds directly from the vendor. Farmers can look at the profiles of laborers before hiring them. Farmers and laborers will gain from it, since farmers will be able to find employees for their farms, and jobless laborers will be able to find work.

II. LITERATURE SURVEY

In India, there are many distinct sorts of crops. There are two seasons in north India: kharif (which runs from July to October) and rabi (which runs from November to March) (which lasts from October to March). Zaid refers to crops that are harvested between March and June. Can you come up with a reason for India's agricultural diversity? The topography, climate, and soil types in India are diverse. Because India has both a tropical and a temperate environment, it has crops that grow in both climates. India is one of the few countries in the world with such a wide range of variables. Sustainable farming, which is mostly relied on the monsoon and animals, crop diversity, and the preponderance of food crops are the most notable aspects of Indian agriculture. Fruit crops, plantation crops, cash crops, and food crops are India's four primary agricultural groupings. Precision farming entails the application of technology to accomplish and expand crops or output. Field inconsistencies are monitored, recorded for management, and the upkeep of key resources. This might be the instrument that agriculturalists use to pick and manage crops with the purpose of increasing return on investment while preserving natural resources. According to this study, the quality of agricultural goods is the brand of agricultural products supply chain management, and pre-elements of the supply chain

include reduced overall supply chain costs and greater supply chain performance due to the collaboration of all stakeholders.

Two factors are critical for the crop to be grown, which can be determined mostly by market and profit. However, until today, this has been inherited, or a traditional approach has been adopted that is not 100 percent effective. Individuals, communities, and governments have made historical and present decisions, as well as their activities, that have resulted in the primary agricultural systems in each given location. These judgments are influenced by a variety of elements, including practice, tradition, predicted profit, personal first choice and resources, as well as societal and political influences.

III. PROPOSED WORK

We plan to create an e-farming application that addresses all of the issues of farmers and provides a solution. We offer several parts, such as login, for farmers and individuals to utilize at their leisure. As per the requirements of our application, who would be using it through a web application. There will be an E-content section containing information on farming, such as how to farm for less money, advanced technology, which crops are in great demand, crop availability in the country to avoid crop excess, and how to transform wet waste into manure. If the farmers encounter a problem with their crop, there will be a team of experts on hand to assist them and provide an exact solution. Our major purpose is to assist a struggling farmer by providing a user-friendly application.

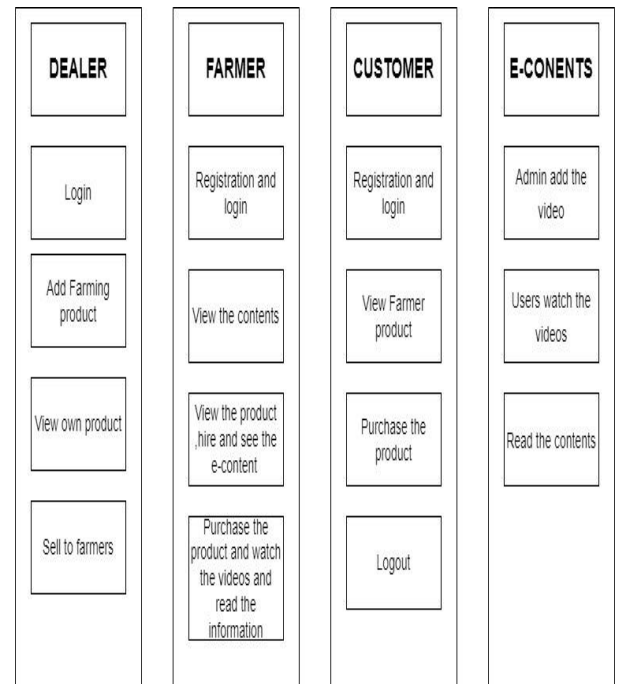


Fig. 2: Architecture Diagram

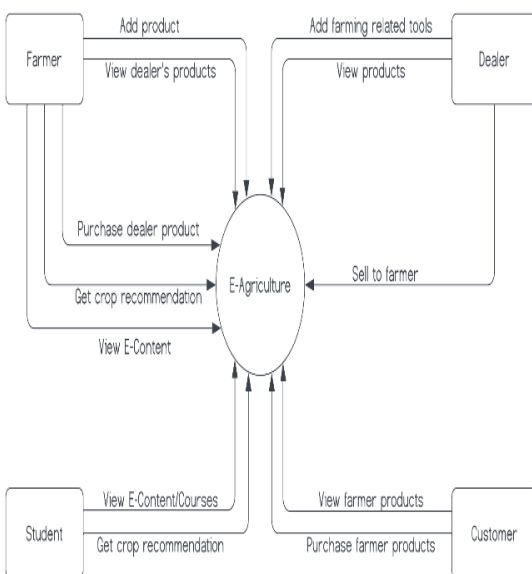


Fig. 1: Working of System

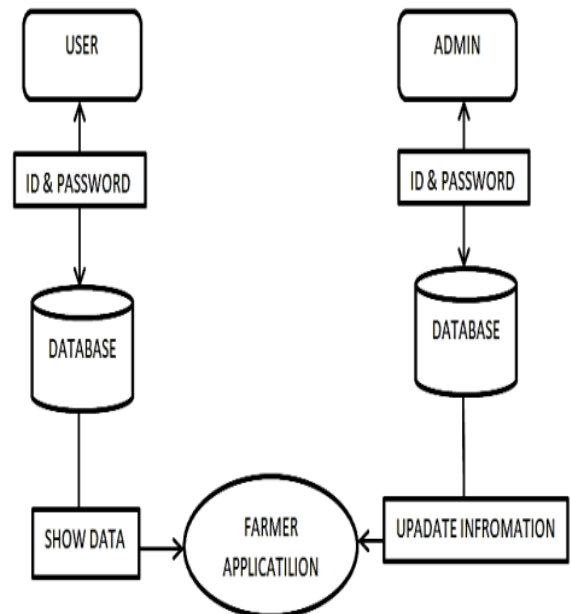


Fig. 3: SYSTEM DIAGRAM

The user, farmer application, and admin are the three essential components of the system diagram. Each Admin and User has their own User ID and Password, which ensures security and prevents the User ID or User Name from being duplicated. With their ID and password, the user may log in and submit information on farming based on the seasons. Using the admin ID and password, the Admin can also access the Dashboard. The ability to add, edit, update, and remove data was granted by the administrator. The application serves as a communication channel between the user and the administrator. Another idea is that the administrator might use the programme to market his or her own things. This is accomplished by offering a marketing interface for both the administrator and the user.

A. ADMINMODULE

The entity-relationship diagram is the foundational notation for data modelling. In order to operate and govern the software, the admin is granted a lot of authority. Any data base administration, information management, information insert, information update, or information delete authority in the hands of admin. The admin is provided with interfaces such as login, dashboard, customer, and item information. Admin Simply log in with your admin ID and password to access the admin dashboards, which include choices like as baseboards, customer information, and item information. Customer has a list of customers who have registered in the application, and you can view all of the information on the list form. Admin has the authority to delete a person's data. Item information is one choice, and it's broken down into three parts: item insert, product sale information, and product sale. Item inserts include information about farms or products. Product sale information and product sales that are according to marketing add and remove products, and any user may purchase the product that is one notice supply the Admin with all of those information.

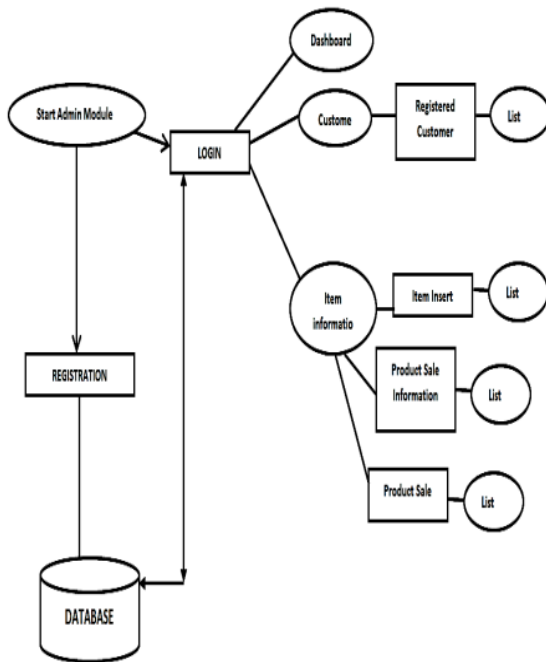


Fig. 4: Admin module

B. USER MODULE

The entity-relationship diagram is the foundational notation for data modelling. Three components are used in relational database design. The three categories are Entities, Attributes, and Relationships. User modules offer the user with one of the Web application interfaces. Login, registration, agricultural data, seed data, soil data, item porches, and contact data are just a few of the choices accessible to help the user. English and Hindi are the two languages in which this application is available. The material is organized in a list fashion. Logging in and registering are two common ways to acquire access to application data. As farming information, seeds and soil information are supplied to the user or farmer. Whatever type of seed grows best in which type of soil, and how might this information assist farmers in making more money? Weather reporting is simple

data that informs a user or farmer about the current weather conditions in their state or location. Users can purchase agricultural-related items such as seed, animals, fertilizer, and pesticides, among other things, in a similar way to sopping or E-comers. Farmers may contact specialists immediately via phone or chat under the contact us area, and this technology bridges the gap between farmers and merchants.

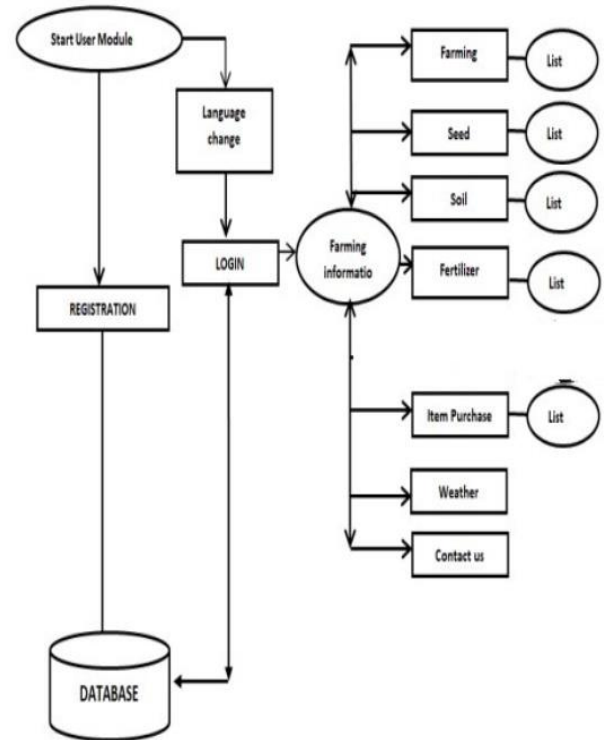


Fig. 5: User Module

C. ADVANTAGES

- We can effortlessly use and utilise this app.
- Provide knowledge about different types of crops, soil, fertilizer, and other topics.
- Professionals offering suggestions for improvement.
- Experts or agricultural officers clear the farmer's uncertainties.
- A farm dashboard and report.
- It provides a marketing platform.

D. OBJECTIVE OF NEWSYSTEM

Currently, Farmer Application is done manually with the use of papers, form pens, registers, and other record-keeping tools. This procedure is quite time-consuming. There is no data security. All of these processes are quite time consuming and need the keeping and processing of numerous records and files, which is a sluggish process. As a result, there are certain requirements for automated and computerized management:

- To conserve the system's valuable time.
- Employees are convinced.
- It's simple to enter and retrieve data.
- Maintaining the record's integrity.
- A more effective overall management of the system.
- To format reports in a specific way. This provides the records a neat and orderly appearance.

IV. METHODOLOGY

On the system's main page, there will be just one Username and Password field; the system will determine if the user is a Farmer, Dealer, Customer, Admin, or Professional based on the username and password.

A. Project Scenario

- Scenario 1: Farmer
 - Farmers may either set up new accounts or log in to their existing accounts to utilise the system's capabilities.
 - Farmers who have been verified can sell and see their products.
- Scenario 2: Dealer
 - The dealer sells the commodity to the registered farmer.
 - Dealer Take a look at their merchandise
- Scenario 3: Customer
 - Customers can acquire access to the system's services by creating new accounts or logging in to existing ones.
 - Authenticated customers may purchase and see farmer products.
 - The customer pays for what they ordered.
- Scenario 4: Admin
 - Create and maintain accounts for farmers and customers.
 - Keep the webpage up to date.
 - Login to the system
- Scenario 4: Professionals
 - Create the account or log in to their existing accounts.
 - Solve the problems of farmers or people.

V. CONCLUSION AND FUTURE WORKS

We can provide a language option that allows anyone to speak in a language other than English. If someone is unable to converse in English, they may select another language. We included a chat feature and a guest login feature to make the system more user-friendly. People will be able to eat fresh food and visit parts of their local communities to pick up their purchases and explore the region, developing relationships with farmers and profiting from saving money, thereby benefiting farmers.

The article details a project in which we created a web application that allows any farmer to communicate with their neighbors or cities. To display the photographs on the left side of the buy product, which are referred to as comparable items, we employed a basic database and a reference approach. To make the system more user-friendly, we included extra features such as customer and farmer logins. People will be able to eat fresh food and visit areas of their local villages to pick up their purchases and tour the region, developing relationships with farmers and profiting by preserving their money, which will directly assist farmers.

ACKNOWLEDGMENT

I'd like to express my heartfelt appreciation to the C AND IT department at REVA UNIVERSITY BANGALORE -560064 INDIA for their assistance. We would also want to convey our deep appreciation to PROF. PALLAVI BIRADAR our guide, for her invaluable support, instructions, recommendations, and guidance.

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