



Digital Crop Solutions

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ABSTRACT

Our lives are now easier because to information and communication technology (ICTs). ICTs are useful in a variety of technology-related industries, including banking, e-commerce, education, and healthcare. ICSs can assist farmers in increasing both their profit and production. This article describes a web-based system that would give farmers access to data on different crops, crop diseases, production rates, farmer-focused government initiatives, and weather forecasts. The website is also useful for purchasing supplies from merchants and selling farm-related goods manufactured by farmers, both of which are essential for farming. Farmers may buy or sell the tools they use on their farms, such cultivators and disc harrows. While farmers stand to gain the most from this approach, other businesses will also them, such as farmers' markets (by selling tractors, for instance), lodging establishments (by acquiring raw materials like milk and vegetables), and suppliers of fertilizer.

Keywords: Java, Bootstrap & js , Css , Html , Mysql , Apache tomcat.

1. Introduction

In India, agriculture is a significant industry. The majority of Indians earn their living from a variety of sources beyond agriculture. As to the 2011 census, the agriculture industry employs 144 billion laborers and over 118 million farmers in India. In 2011, there were over 121 crore people living in India, of whom about 2630 lakh were farmers. This statement sums up the entire country: if a farmer is prosperous, then the country must be as well. Data pertaining to agriculture is also easily accessible on the internet. Indian farmers lag behind in adopting new technologies and innovations. This is due to the fact that Indian farmers are not particularly proficient in English, but they struggle to distinguish between the content they are seeking for and what is already accessible due to the overwhelming amount of information available on the Internet. Information and communication technologies (ICTs) are the best way to provide pertinent information to farmers. These days, everyone has access to a cell phone. Farmers may easily browse the phone's screen for information about their problem using only one touch. They may establish direct communication with other farmers who have resolved comparable problems and get suggestions. This article describes a web-based application initiative that aims to help farmers by giving them access to all the information they need on Marathi farming on their cellphones and allowing other experienced farmers to view the same material on their PCs. With the help of the system described in this paper, farmers would have access to all the data they require to manage their crops, including weather information [1] for planning purposes, crop disease information, and ideas for using their production to create ready-to-use products. They will get updates on the government's new farmer support program and revised agricultural prices [3]. Farmers may purchase fertilizers online, among many other things. The best platform for marketing their work will be provided, along with the most earnings.

The document's remaining sections are organized as follows: Section 2 covers the literature assessment, and Section 3 presents the specifics of our experiments and recommended characteristics. We ultimately conclude our study report in Section 4.

2. Literature Survey

To formulate this strategy, we looked over a few past papers. The paper describes an Android-based system that makes use of ICTs. The system does not support local languages, but it does provide a number of services, including news, weather, and updates on various agricultural commodities. The likelihood of illiteracy among farmers from different states was taken into consideration while designing the method described in the study. This system is built on an Android-based platform called Solution for Indian Agriculture. This system was an effort to overcome the challenging interface challenge from the previous study. The system covered in this article features a recognizable and user-friendly interface. However, the system only has a large screen interface; it lacks a tiny screen interface and has not been able to support a number of regional languages. The method outlined in the paper provides crop pricing for both local and distant markets. The system also provides weather forecast data.

3. Experimentation Details and Proposed Features

From the standpoint of the farmer, the system suggested in this study would simplify and benefit the farming industry. We employed a variety of technologies, including HTML5, CSS3, JavaScript, Bootstrap 4.0, Java, and MYSQL as the database; further tools included the Xampp tool and Tomcat server 8.0. This system consists of a mobile application and a website [4-6]. Farmers can use the system immediately by launching the application or by inputting the website's URL. The user would receive fundamental farming knowledge at this level. It is required of them to register using the registration form and then log in to the system if they wish to purchase or sell something. For example, if a farmer wants to sell their produce. Likewise, individuals must register and go through the login process if they wish to make a purchase. In addition to farmers, the following two categories of individuals can profit from this system:

a) Consumer

b) Supplier

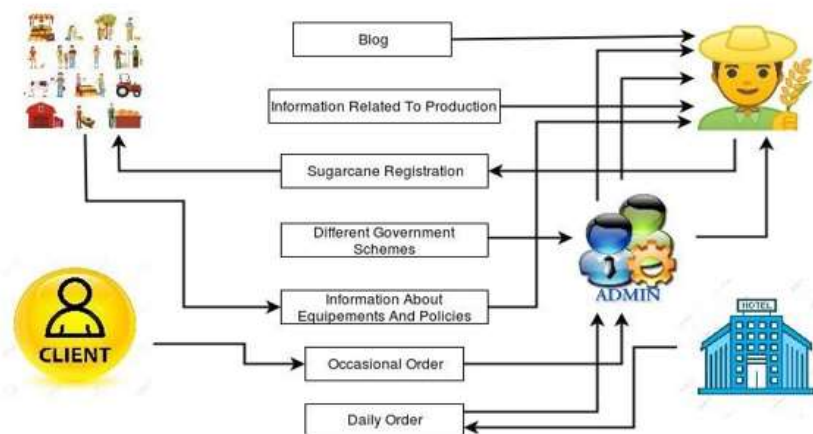
Consumer: In our system, we term 'Consumer' to those individuals who use produce of farmers as their input for their company or personal use, such as hotels. For certain individuals, there is a mandatory login process on this system. Following their login, customers will see a list of the products, including milk, flowers, green veggies, and many other goods, that they may purchase from farmers. Orders may be placed via their website by indicating the amount needed. The administrative system, which serves as a conduit between farmers and customers, will supply them with whatever they need at their location.

Supplier: The provider must likewise have a login, just like the customer. Those who will give farmers the necessary supplies and goods—such as machinery and fertilizer suppliers—so they may increase their productivity are referred to as "suppliers." After logging in, users may add product data, such as a list of fertilizers, to the system. Visitors to the farming site will be able to see this list. These days, farmers are able to purchase and apply these fertilizers to bags. Farmers have the option to purchase new or used agricultural machinery.

3. Proposed Features

Farmers need to know the prices of their products in both nearby and far-off markets in order to accurately reap the rewards of their labour; in this study, we describe a system that offers this crucial information (Figure 1). Farmers may plan their work based on the weather for the following several days by using the weather forecasting capability provided by the system.

In addition to providing information on crop diseases and variety, the system also offers information on new crops that are being introduced to the market and the newest agricultural technology. The system gives farmers access to a communication platform so they may engage and exchange success stories. Additionally, the system offers farmers and other merchants involved in agriculture a platform for buying and selling products.



4. Conclusion and Future Work

Many of the main problems that farmers face might have answers found by using the "DIGITAL CROP SOLUTIONS." The system's interface is simple because farmers have easy access to relevant information like weather, government programs, market pricing, and their crops. Farmers may be able to sell their goods for a fair price by using their phones to check market prices for commodities. Within this system, farmers would find a helpful marketplace where they could sell their crops or buy other related things and agricultural equipment. Using their basic knowledge of smartphone use, farmers may make good use of the system without ever signing in. The only individuals who must log in are those who want to buy or sell goods. Furthermore, it is

asserted that the system will act as an essential link between farmers and buyers of crops, agricultural machinery, and other relevant products. Regrettably, the system is now only available in Marathi; nonetheless, its capability may be extended to include other languages, allowing for a wider distribution of its use throughout other Indian states. Other regional Indian languages will be added to this system in the future as part of our improvement efforts.