

EFFICIENT FARMING SYSTEM USING ANDROID

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Abstract : Farmers are well too behind in using technologies and advanced methodologies to grow the crops. Every year we see that the farmers are committing suicide due to the bad crop (various reasons), or bad rates for the crops and loan sharks. If there is a platform for the farmers, which is easy to understand and use, to enable them to utilize the power of technology in their farming. Indian farmers face lot of problems when it comes to buying seeds & fertilizers from authorized channels at the right price. Same applies to selling the farm produce at the right price so that farming becomes cost-effective occupation. Need of an hour is to build a mobile app for farmers where-in they can buy seeds & fertilizers at the optimal price. This portal should also allow consumers to bid/ask for the farm produce thus eradicating middle man and benefiting both farmers and consumers. A mobile application that the farmers can use to take into service tractors as well as other computerizations at a supposed amount all using their mobile phones , This would not only help them avoid labor-intensive labor but can be also be

considered as an important step to encourage this profession.

Keywords – Agriculture, Agricultural marketing, Economic Development, Temperature, Humidity, light detection, soil moisture, IOT

1. INTROUCTION

India is predominantly an agriculture country with the ability to grow a large variety of crops but does not feature among the top producers. Indirectly another 10-15% people India has a much larger population of small and marginal farmers who cultivate on lands between 0.01 to 0.4hectores. 55% of India's total cultivated land is still worried by humans andanimals.

The farmingsegment of India is short-lived through a go-ahead phase in the recent era of development. It provides 65% of payopportunity for the working inhabitants of India. Since post-independence period, the Government of India has been initiate its policy scaffold for the structural, scientific andinstitutional

changes for cultivation. During 1st five year plan (1951-56), the special address was for the crop growing sector to deal with the food catastrophe. Since then there is found nonstop decline in the masterpiece of GDP from the gardening and allied activities. With the concern of agricultural crisis and lower productivity, the 11th five year plan (2007-08 to 2011-12) made a target to reverse the deceleration in agriculture growth and productivity. On 12th five year plan the main focal point is for the quick and wide-ranging increase of the gardening. The world market has been witnessing the slow expansion rate since 2008-09 which has resulted in listless growth in all the sectors of India. Although the farm efficiency is low as compared to other developed countries, some improvements have been found due to certain developmental actions. These include, technological advancement, adoption of (High yielding Varieties) HYVs of seeds, usage of improved quality of fertilizers, insecticides, pesticides, new cropping pattern, new irrigation facilities, farm research and management practices. India's already large population is expected to become the world's largest in the next 20 years, while its economy will soon overtake Japan's to become the world's third largest. The ensuing augment in the command for food will need to be met through higher rural efficiency or by mounting food imports. This article discusses some of the key areas of progress and challenges for India's agricultural sector, including: productivity, water management, government policies and programs, and food distribution and storage. Augment in the making of various farming products is not plenty for the economic development process in this country. It also requires an organized and scientific promotion system for the function of promotion undeveloped

products in marital market as well as in international market. Advertising of farming products means a sequence of actions involved in the group of agricultural products from the end of production to the end of expenditure. According to Thomsen, the study of agricultural marketing comprises all the operations, and the agencies conducting them, involved in the movement of farm produced foods, raw materials and their derivatives. Prof. Faruque observed: "agricultural marketing comprises all operations involved in the movement of farm produce from the producer to the ultimate consumer because independence in India, **farming promotion is characterize by enveloping** government involvement. This intervention took place for various purposes in various forms. by means of the way of time the require for agricultural marketing in addition changed. In the early period, marketing for agriculture was required to add to productivity, supply a market for agriculture products, bargain for agricultural credit, and so on. But in the at hand situation, farming promotion is desirable to enhance the competence of the producers to market their agriculture produce so that they can get good market margin. It also helps in eliminating or rather minimizing the role of middlemen. Agriculture production system in India is characterized by small size building and seasonality of invention and insist. Beside this, it poses various problems which will be discussed in the paper.

Objectives

1. To recognize the chief harms of rural promotion.
2. To stress the role of government for the increase of agricultural selling.
3. To provide suggestions for their progress.

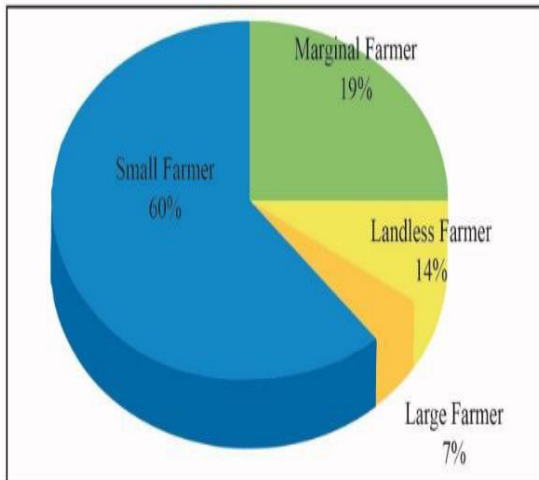


Fig: Farmers Distribution

lands and increased food demand. The paper deals with the steps to improve the agricultural forecast

2. LITERATURE SURVEY

In [1], the authors tried to reveal the present trend of agriculture productivity and its future prospects. Some resulting data have been cool to search upon the reasonable scene of agriculture and a selection of policy initiatives made by the government. Agriculture is the spinal column of Indian economy as the economic development of this country is very much relied upon the agricultural behavior.

Agriculture provides not only food for the nation's population but also provides opportunities for employment generation, saving, contribution to industrial goods market and earning foreign exchange. promotion of agricultural products means a series of activities caught up in the movement of agricultural produces from the point of making to the point of consumption. Agriculture production system in India is characterized by small scale production and seasonality of production and require and many more.

In [2], the authors mentioned the importance of the soilless agricultural technique, as expansion of the habitable zones has led to the depletion of agricultural

Supporting in sequence system, so that real-time estimate will be possible. The major stress will be on providing favorable impression for plants. These agricultural perfunctory systems will help in managing and preserve safe environment especially the agricultural areas. Environment real time monitoring is an imperative factor in stylishundeveloped. The authors proposed a monitoring unit for Controlled Environment

three parts: relation analysis, statistical prediction, and IOT service. This system is

Agriculture (CEA) that is designed using the state-of-art hardware specifications and multiple sensors. The planned device can be gamely used in live outin the Hydroponics environment and has great latent for other applications like green house agriculture, vertical farming etc. In adding up, the device has been purposelycalculated to analyse the setting and report to the farmer, round-the-clock, using the Wi-Fi connectivity incorporatedinto it. Further, the readings from the device has been plotted for various regions of India over the four seasons and has been proven consistent for the situation of Indian agriculture. Summing up the results, the system demonstrates ubiquitous as it can be monitored distantly, analyzed and displayed asneeded.

In [3], that study focused to understand how they have adapted to different climatic conditions across India. District level data is used for the analysis. The revise also explores the pressure of annual weather and crop price on the climate answer function. . The purpose of this study is to improve the agricultural forecast supporting information system, so that real-time forecast will be possible .

To this end, it will be needed to manage IOT devices and gather information on them more appropriately. The IOTbased agricultural production System consists of

Designed an agricultural decision support system to predict crop growth by monitoring periodically using the IoT sensor technology

added to the System. If a new Fertilizer information is received it

In [4], the authors presented a connected farm based on IoT systems, which aims to provide smart farming systems for end users. A thorough design and implementation for connected farms are illustrate, and its advantages are explain with service scenarios compared to previous smart farms. We hope this work will show the power of IoT as aunrulyknowledge helping across multi industries includingcultivation.

In [5], the authors explained need of expert system in agriculture and review of various expert systems in agriculture. The main aim of this paper is to reach farmers for their alertness, usage and acuity in e-Agriculture. The cram used numerical survey design practice to collect data from farmers for their attentiveness in e-Commerce. The results obtained indicated the level of responsiveness is less such that there is a need for e-agriculture for their support. e-Agriculture is a raised area for at the bottom of marketing of agricultural products.

3 . PROPOSED WORK

This work has four main modules. there are administrator, Farmers, Machinery Renter, Agent/ User.

Admin Module

□ Soils andFertilizers:

This module is usedto maintain the various Soils and Fertilizers Details. This ingredient will be enabled only to the organization type of user. This module contains: A separate screen should be provided to maintain the Soils and Fertilizers Details. It should provide a way to add, modify and delete the both details. If a new Soil Information is received it should be

Should be added to the system with the corresponding details like soil name, crop type, crop name etc.

the machinery request and they can accept the request.

□ **CropDetails:**

This module is used to maintain the various details about crops. This component will be enabled only to the admin type of users.

This module contains: A separate screen should be provided to maintain the Crops Information. It should provide a way to add, modify and delete the crop details. If a new crop information is received, it should be added to the system with the corresponding details like Soil Name, Crop Type, Crop Name and Season.

□ **MarketDetails:**

In this module we can maintain the market details. This component will be enabled only to the supervision type of users. This module contains: A separate screen should be provided to maintain the market related information. It should provide a way to add, modify and delete the market related information. Administrator type of user can add the commodities in the market. He can add the information about new markets into the system. He can add the market report into the system regarding a particular market and commodities prices details in that market in a day.

FARMER MODULE

□ **SearchMachinery**

This module is used to search the machinery based on category such as tractor, cutting machine, showing machine and etc.

□ **MachineryRequest**

This module used to give the request for machinery to the renter. The renter can view

MachineryStatus

This module is used to View the status of the machinery request. Whether the request is accepted or not.

MarketAnalysis

The farmer can set the price of their crop, vegetables and etc. These market price details are displayed in the consumer. The consumer can between the crop, vegetables and fruits.

○ **Bidding Process**

This module used to bid the crop, vegetables and etc. The bidding amount is mentioned by the consumer the farmer can accept their Favorable price. After accepting the bidding the details are sending to the consumer.

RENTER MODULE

This module is used to list their machinery details. Renter is nothing but to give the machinery for rental.

MachineryDetails

The renter can give their machinery details such as tractor, cutting machine, showing machine and all. This machinery can give rental for hour's days.

MachineryRequest

This module deals with machinery rental details. Which are came from farmers. The renter can accept the machinery request. Those details are sending to the farmer.

RenterPayment

This module used to mention the received payment details from the farmer. After receiving the amount the sms will be send to the farmer.

USER MODULE

To enter this system the users has to login to this system. Basically there are 3 types of users in this system.

- Admin users – Is primary user who can access allfeatures.

- Farmers and Agriculture Students – access only formodules.

- Agricultural officers: Has also restricted access.

Bidding

This module used to bid the specified crop, vegetables and etc. The consumer can give their own rate get the farmer can accept their rate remember taken by the crop.

Payment

This module used to mention the received payment details from the user. After receiving the amount the SMS will be send to the user.

REPORT MODULE

- Area Wise Crops report – This contains variousinformation about the crops in a particulardistrict.

- Soil Based Fertilizers report – This contains variousinformation about the fertilizers based on the state, district, crop type andseason.

- Commodity Wise report – This gives the different details about a particular commodity in a particular state and district.

- Market Wise Daily report – This gives the daily information about the various Markets in a particular state anddistrict.

- Market Wise Monthly report – This report gives the market information in state and district in a particular month.

4. EXPERIMENTATION RESULT

In this work, we have used scheduling algorithm for selecting best price bidding for crops from agent using priority queue. The renter can select the farmer's machinery rental on the basis of First Comes First Send scheduling algorithm.

SCHEDULING ALGORITHM

Scheduling of processes/work is done to finish the work on time.

Main worry Based setting up (Non preventive): In this scheduling, processes are planned according to their priorities, i.e., highest priority development is calendar first. If priorities of two process match, then schedule according to coming time.

Priority Scheduling

- Priority is assigned for each process.
- Process with highest priority is executed first and soon.
- Processes with same priority are executed in FCFS manner.
- Priority can be decided based on memory requirements, time requirements or any other resource requirement.

Work flow of Priority Scheduling in bidding process

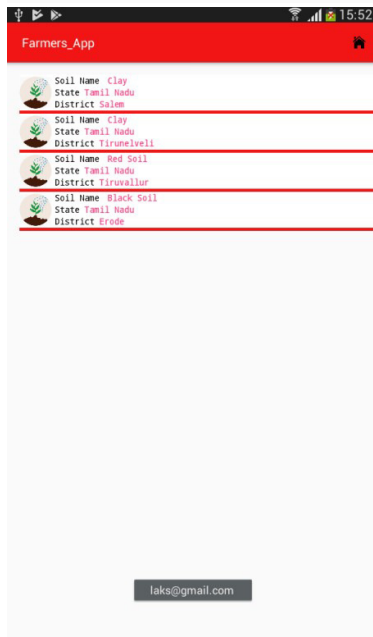
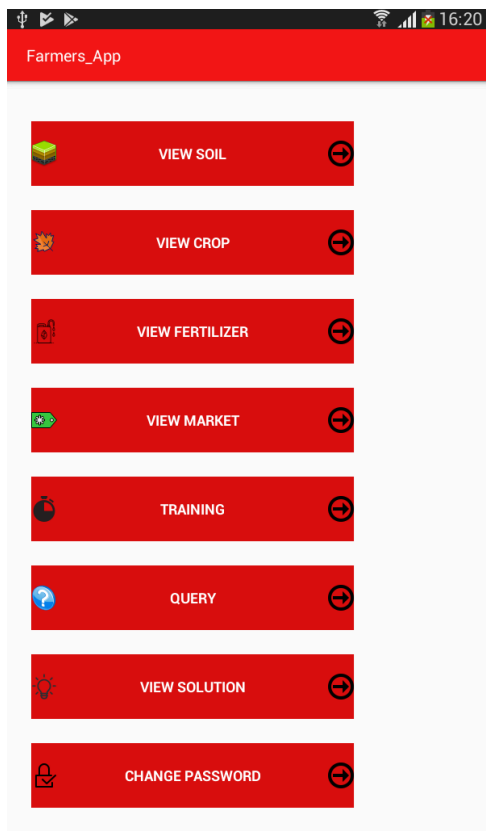
- Priority is assigned for each bidding which comes from users.
- Process with highest priority is executed first and soon.
- Processes with same priority are executed in First Comes First Send manner.
- Priority can be decided based on bidding amount requirements.

First Come First Serve Scheduling

In the "First come first serve" scheduling algorithm, as the name suggests, the process which arrives first, gets executed first, or we can say with the purpose of the development which requirements the CPU first, gets the CPU allocated first.

- First Come First Serve, is just like **FIFO** (First in First out) Queue data structure, where the data element which is added to the queue first, is the one who leaves the queue first.
- This is used in Batch Systems.
- It's easy to understand and implement programmatically, using a Queue data structure, where a new process enters through the tail of the queue, and the scheduler selects process from the head of the queue.
- A perfect real life example of FCFS scheduling is buying tickets at ticket counter.

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