Smart Farm Application: A Modern Farming Technique Using Android Application

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I. ABSTRACT - *Today, everyone is familiar with mobile devices. Also including the farmers and countryside people. Mobile plays vital role in daily life of farmers as well as other people. The farmers, who were dependent on clouds for rain, now are looking into the Cloud Computing for their solutions towards cultivation of superior crops in today's modern agricultural world. The traditional methods used by the farmers, peculiarly in India, are very slow and understandable. Although most people can see the benefits of using more precious approach to manage crops with additional information, the tools provided for farming and other information technologies have not yet moved into mainstream agriculture management[1].*

KEYWORDS: Information and Communication Technologies, Mobile Computing; Cloud Computing, farm security, mobile connectivity, remote monitoring, smart farm.

II. INTRODUCTION:

This will effectively help farmers to sell their product in global market and earn remarkable profit. Hence, this frame work uses MC, which in effect, puts power into a farmer's hand. The experimental setup uses tools like Android SDK, Xampp Server, etc. Farmers often struggle for basic information like weather updates, crop prices, crops information and expert advice, ending up soften relying on hear says. The agriculture is basic reason of production of food and raw materials, which eventually is reason of survival of the population. In Indian most of the population is dependent on agriculture. However, there is also need to review and revitalize the mechanism for updating the technology. In the upcoming years agriculture will see major changes. Unlike the earlier 'green revolution' which had a foundation of advanced pesticides and fertilizers, now the agriculture will be revolutionized with the help of technology. Every developing economy has agriculture sector as irreplaceable pillar and so does India. In India the agriculture sector contributes close to 20% of GDP(Gross Domestic Product). Either directly or indirectly, 60% of total population of India depends on agriculture. The vast majority of Indian farmers, which includes small-scale producers, are often unable to access the information and technological resources that could increase the yield and lead to better prices for their crops and products. The wide spread network of mobile phones could be the game changer in this problem. It will put agriculture field to its zenith. The main purpose for such project is to develop a mobile phone based solution that helps in farm management, leads to agricultural yield improvement and helps in care/maintenance of the farms. Smart farming methods increase the production in almost every sector. Using modern agriculture and farming is a must because modern farming ,methods can increase production and can feed the world. The economy of some country is mostly depend on agriculture and farming related business. A major part of the population are directly or indirectly involved with agriculture and farming business. Income source of people are limited.

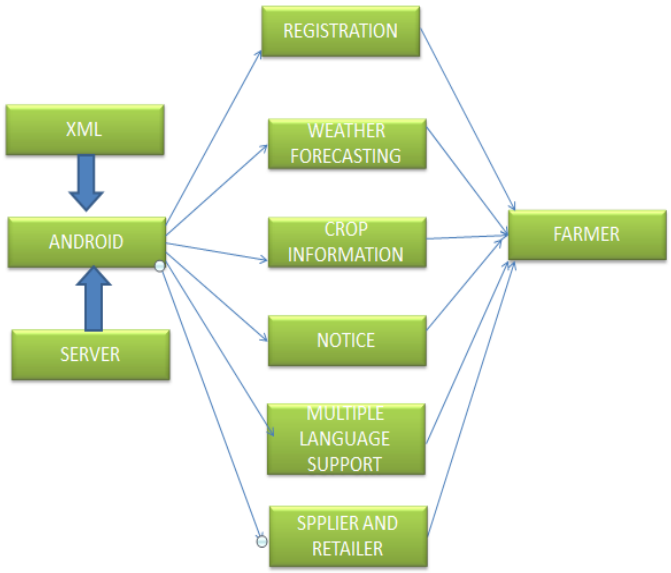
III. RELATED WORK:

Today's the mobile phone is used worldwide. As the price of smart phone is decreasing and its popularity is becoming increasing day by day. Moreover, android is the mobile operating system used in smart phone, most of its applications are freely available. The use of smart phone is increase in every sector of business, education, etc[2]. India being an agriculture based developing country has more than 70% of its population depending on agriculture and farming . The growth in the agriculture production directly increases the Indian Economy and vice-versa is also true. the life style of Indian farmers and farming is varying rapidly due to increase in non-agricultural opportunities. The technological innovations in agriculture are not reaching to the farmer's, either because most of them are illiterates or due to unawareness. Hence, most of the farmers are failing to acquire the possible production rate. The loss growing more than 40% in worldwide which includes more than 19.1% of loss. So, to overcome all these problems the Smart Farm application will introduced. This paper is proposed to focused on Indian farmers as it addresses the key problems of getting the market updates of different products, weather updates and information about the rain and also provides multiple language support. This will effectively help farmers to sell their product in global market and earn remarkable profit. This application will provide the all type of information within an one system. Like it includes the crops related information, includes new technologies related news or other agricultural news, weather information (i.e. current, historical). This system can provide information using android smart phone from anywhere. This is android application which will be useful for farmers & agricultural institutes for cultivation of various kind of crops in various type of

atmosphere. This smart phone app is easy to use and in affordable cost as well as require less memory

IV. SYSTEM FEATURES:

[A] SYSTEM ARCITECTURE:



[B]MODULES:

1] Registration: Registration form will take information of farmer. The information includes like farmers name, Residential Address, City, State, Mobile Number, Email Address. The location of farmer by zip code for providing daily weather forecast report of that location. Mobile number of farmer to give the daily updates by text message. If the user first not register then he/she must need to register first. Once the user registered the page then he/she can directly access the application by login.

2] Weather: In weather forecasting report application will provide weather forecasting report of particular location ,and perfect location of farmer will be taken from zip code which is already registered on registration page .The application gives the weather forecasting by using url through the respective weather site. And the Weather forecasting is depends on the farmers entered location. According to location of farmer daily news will be provided on mobile phone which is already registered on registration page and also on application.

3] Supplier and Retailer: A Supplier relationship is one in which a reseller buys from a supplier for the purpose of reselling and making a profit In this field Retailers play a big role in maintaining the sustainability of consumption and production who is supplying the crops. In this feature all information related to retailer and suppler are saved in database.

4] Crops Information: In this field farmer will get the information about different crops. Which crop should get in which season. Crop information will be displayed in many languages like Marathi, Hindi, English. On one click farmer can access the crops information in his/her own language.

5] Notice: Notice field is used to display the notice related to farming .In this application farmer will get notifications related to crops and crops price means total information about crops and he/she will get also information about weather forecasting information.

6] Voice Speech: This is application provide voice typing feature .This feature makes farmer very easy to type what they want information. By continuously holding this button he/she will speech which information they want and he/she will get information about they entered.

7] Multiple language support: In multiple languages support application will provide all information in various languages according to regions, like application will provide all information in Marathi, English, and Hindi etc. All the information will be already stored in different languages, just user has to press button of particular language and information will be displayed in particular language.

8]**Market trading:** Application will provide daily updates and changes in prices of crops in market. This all information will provide on mobile phones and also on applications home page. The market price button shows latest price of all crops traded in a mandi or registered agriculture market of the particular district a farmer belongs to. Additionally, he gets to see the maximum price in the district, state and the entire country on a particular day.

[C]TECHNOLOGIES REQUIRED:

1] ANDROID: Android is an open-source, Linux-based operating system for mobile devices such as smart phones and tablet computers. Android was developed by the Open Handset Alliance, led by Google, and other companies. Android programming is based on Java programming language.[3]

2] PHP:PHP is a server side scripting language is used for general purpose programming language .PHP Scripts are executed on the server .It can generate the dynamic page content. It can create, open, read, write, delete and close the files on the server, it can also add ,delay ,modify data in your database. It is compatible with almost all the servers used today (Appache, IISetc).[4][5]

3] XML: Extensible markup language is a markup language that defines a set of rule of encoding documents in a format that is both human readable and machine readable .The design goals of XML emphasize simplicity, generality, usability across the internet. It is textual data format with a strong support via Unicode for different human languages .Although the design of XML focuses on documents, the language is widely used for the

representation of arbitrary data structure such as those used in web service.[6]

4] JSON: JavaScript Object Notation is an independent data exchange format design for representing simple data structure JSON was originally derived as a subset of the JavaScript specification (ECME-Script). And it is therefore directly supported in JavaScript [7].

5] JAVA: Java is general purpose computer programming language that is concurrent, class based, object oriented it is intended to late application developer.[8]

V. PROBLEM DESCRIPTION:

Computer vision, machine learning, mobile are the immerging techniques and are used in almost all fields of research as well as in our day-to- day activities such as medical imaging and agriculture. India being an agriculture based developing country has more than 70% of its population depending on agriculture and farming. The growth in the agriculture production directly increases the Indian Economy and vice-versa is also true. An expert system in the field of agriculture can be the best option to expand countries agriculture production. But the life style of Indian farmers and farming is varying rapidly due to increase in non-agricultural opportunities. The technological innovations in agriculture are not reaching to the farmer's, either because most of them are illiterates or due to unawareness. Hence, most of the farmers are failing to acquire the possible production rate. The loss growing more than 40% in worldwide which includes more than 19.1% of loss. To overcome all the this problems which the farmers are facing, this system will effectively help.

VI. APPLICATION:

Modern agriculture offer a range of benefits including greater production and higher income for farmers.

Effectively utilizing the different new technology and different agriculture model tools will increase productivity.

Provide Market updates of different products, weather updates and information about the rains and also provide multiple language support.

The farmers will derive greater benefit when they can make better decisions about where to sell their output after getting market prices for variety of local and distant markets[1].

VII. CONCLUSION:

Finally, with the analysis of current farmers knowledge about modern farming techniques and actual development of modern techniques this application will more helpful them to get all kind of information only in one touch on anytime at any place.

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