Kisan Monitoring System Focused on Android based Application

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Abstract - *Agriculture is one of the most important field with the majority of rural population depend on it. So, ICT(Information and Communication Technology) can be used in agriculture which plays an important role in the development of agriculture sector in India for connecting rural areas to rest of the country for overcome the challenges which the farmers facing day by day. The ICT based applications and services particularly by providing access to information, price of produce and inputs from nearby markets, technology transfer and other extension functions lead to better socio economic development of farmer community. ICTs are acting as info delivery catalyst for better livelihood of rural areas. Coordination and cooperation to deliver mobile services in Agriculture can provide for the future sustainability of such initiatives.*

To enhance farmer income, raise in productivity and revenue by using this technology because of agriculture has been one of the important sector in many countries for connecting rural areas to other countries. As, Communication between the farmer and user is important, the Kisan Monitoring System plays very important role in real.

For this purpose, In this paper, the focus is on the Android-based agriculture system namely Kisan Monitoring System with the proper framework and also the database used for the System. The android application framework is designed to simplify the reuse of components .Then How it became helpful for the farmers when compare to some old web-based application ,etc. we use ADT 22.6.0 With SDK 22.6.0 latest tool in March 2014 as a plugin and Eclipse as a platform.

Key Words: Agriculture, Information and Communication Technology, Android, Database

1. INTRODUCTION

ICT in agriculture means Information and Communication Technology that helps in agriculture for connecting the people,who are living in villages to the urban cities. Kisan or Farmer to dispatch their food in a proper way to the particular customer ICT is useful. ICT

is already touching to the rural areas by ATM,TV and Radio Stations, etc. But, Moreover Mobile based Technology is also the fastest or proper way for peoples satisfactory requirement now a days which also provides facility towards agricultural improvement. Kisan Monitoring System is the new approach towards the development of agriculture. This provides all important features which are necessary for the enhancement of the application which is useful for the farmers in their day to day life and for the profit in very less amount of time. As, Communication between the farmer and user is important, the Kisan Monitoring System plays the Administrator role which is the owner of the system and this communication is handled via use of Android mobile or tablet pc application development.
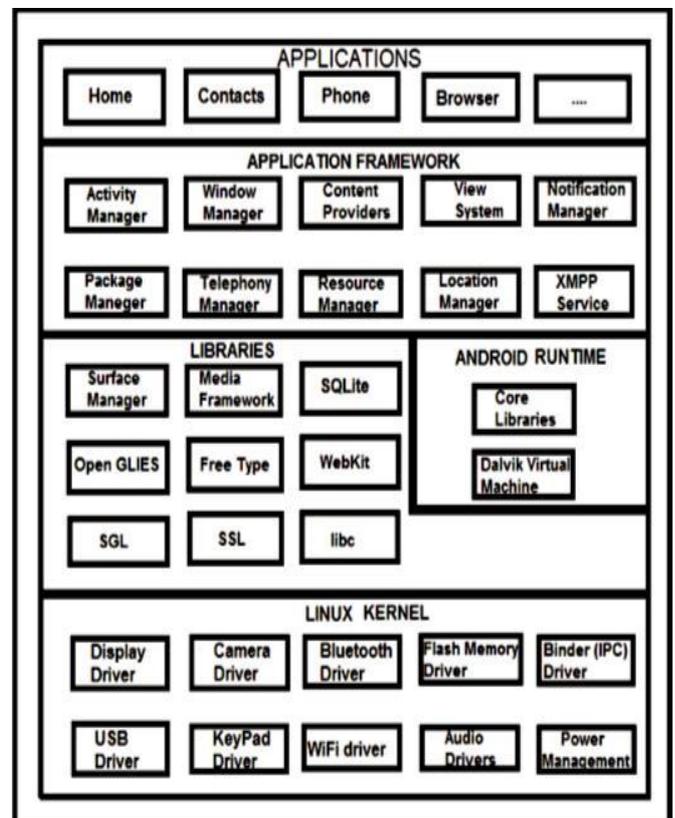
2. ANDROID ARCHITECTURE

Fig -1: Android Architecture

Software Frame can be divided into following four levels from top to bottom.

1. Applications

2. Application Framework

3. Libraries and Android runtime.

4. Operating System

2.1.Applications

Android development of a particular application always includes the interaction between user interface and user. Java programming language is use for the implementation of the framework. Now a days, Many Android applications are used by many users like clock, calender, google play, browser, maps, many types of small apps, etc. At the same time, the application developers can use the API of application framework to achieve their programs; it is also the source of the enormous potential of Android [2].

2.2.   Application Framework

Many developers have may full access to the same framework APIs used by the core applications. The application framework is designed to simplify the reuse of components; any application can publish its capabilities and any another application may then make use of those capabilities.

2.3.   Libraries and Android Runtime

Android includes many types of libraries like C, C++ used by components of the Android system. These capabilities are exposed to developers through the Android application framework. Android also includes a set of core libraries which provides functionality available under Java programming language. With the use of specific instance of Dalvik virtual machine,every application of Android run efficiently its specific (own) process. Dalvik has been written so that a device can run multiple VMs efficiently. Dalvik Executable (.dex) is the format available under these files. For threading and low-level memory management Dalvik VM relies on Linux kernel.

2.4.   Linux Kernel

Android relies on Linux version 2.6 for core system services such as security, memory management, process management, network stack, and driver model. The kernel also acts as an abstraction layer between the hardware and the rest of the software stack [2].

3. PROBLEM STATEMENT

Previously many application ideas and implementation done on which includes all the facilities which the farmer requires and improvement in ICT for connecting people to rest of the country. For e.g Agropedia, E-sagu, E-chaupal, DTU concept uses web based applications for the information and communication technology in the rural development.

The ICT based applications and services particularly by providing access to information, price of produce and inputs from nearby markets, technology transfer and other extension functions lead to better socio economic development of farmer community. ICTs are acting as info delivery catalyst for better livelihood of rural areas. Coordination and cooperation to deliver mobile services in Agriculture can provide for the future sustainability of such initiatives.

Current developed application in android namely Krishi Ville addresses key problems for getting proper update of market prices. Because, it only involves weather forecast and update feature which includes maximum temperature, minimum temperature, max humidity, min humidity, etc.

4. PROPOSED SOLUTION

Mobile based android application which includes all the facilities or cover all the needs of farmers.

4.1.   Features

Kisan Monitoring System Provides (Administrator) features like Soils and fertilizers update, Contact us, Help information, Crop details with proper price, also the user (customer) search available with their proper feedback or comment in fig2.

4.2.   Detailed Explanation

User is the customer who needs the ingredients with the proper price and Farmer who updates crop details with proper price .So, User can search particular item which he/she wants and purchase it and make payment online

by credit card/debit card such that farmer can easily get that amount in his account. If that item is not present in particular amount then it is the responsibility of the farmer to make note it and update the crop details likewise with the proper price.

Both user and farmer have to register to the system with the proper basic details like name, address, phone number, land area, location and bank account.

Farmer module is responsible for communicating with farmers who can update all crop details for example vegetable crops(tomato, chilies, lady finger(bhendi), brinjal, pumpkin, onion, etc.), fruit crops, plantation crops, soil crops, flower crops, medicinal crops, etc. with the proper price .

Transaction - when user search on the page for a

particular product then it will display the proper list of that product available with the proper price and by giving the certain quantity of product and by clicking on purchase button certain transaction page on which he can perform transaction online.

User and Farmer both have the mail facility i.e both will get proper mail on successfully transaction performed. User feedback is also available.

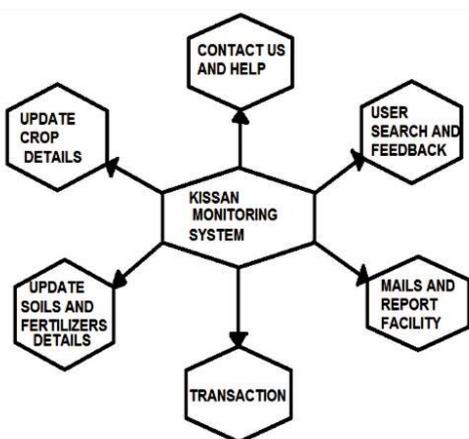For any queries Contact Us and Help is available.

Fig -2 : Features provided for Kisan Monitoring System

4.3. Database

The SQlite is one of the embedded database present under Android system. By using this database manager system anyone can view the private databases present under the particular application. For example. If we have

User database present under this module then it can be seen to the user.

Two methods have been used for calling by the database i.e. query and insert.

4.4. Implementation

By providing facility of information and communication for the farmers easiness more as compare to existing android applications. Most important thing is to use this application on Android based mobile phone or tablet pc which is more useful in day to day life to handle and install application on the tablet and Wi-Fi or Internet Connection using GPRS he can use it properly for the marketing purpose. For that ADT 22.6.0 With SDK 22.6.0 latest tool in March 2014 as a plugin and Eclipse is a preinstalled platform in our 32-bit system.

Table -1: Attributes of database

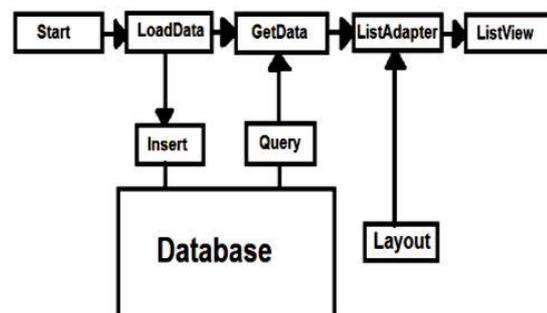| Attributes	Data Types	Description
name	string	Name of the user
userid	numeric	ID of the user,primary key which is not null
password	numeric	Password should be combination of 1 to 9 numbers
confirm password	numeric	Password should be combination of 1 to 9 numbers

Fig -3 : Database Framework of Example

5. CONCLUSION

By using mobile based ICT devices farmers need met with limitations. These limitations will overcome by using mobile based android application in ICT development.

Also enhance farmer income, raise in productivity and revenue by using this technology because agriculture has been one of the important sector in many countries for connecting rural areas to other countries.

This paper provides the facilities to the user and farmer for information and communication between them by using Android facility with the proper use of database and internet. Proposed work is to perform the implementation Kisan Monitoring System which will really help for the people in rural areas in ICT FOR AGRICULTURE field.

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