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Research paper

Connect Farmer

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Abstract

The issues faced by farmers has become the most paramount in these days, especially towards their profit rate. We intend to create an application in order to connect the farmers and the retailers directly and to provide regional languages for the farmers automatically, based on the location detected through GPS. This application also provides facility to farmers for buying seeds, fertilizers and pesticides. It also notifies to consumer and retailer about the amount of pesticides used.

Keywords: *Retailers; Fertilizers; Regional language; GPS; Farmers.*

1. Introduction

In India, trading and selling of produced product is an exhausting work and it involves involvement of third party sellers. So to make work of farmers easier we are developing an application named ”CONNECT FARMERS”. This application is mainly for connecting farmers directly to the customers. Customers can collect the fresh produce directly from the farmer .In this application GPS is enabled and specialized to adapt to the local language. Farmers can also purchase pesticides, fertilizers and insecticides through this applications, recommendations of fertilizers will be shown according to the nature of the crop the farmer sells. Sensors are placed in the field used to detect the external danger in the field and an alert will be provided through the app.

2. Existing System

MANDI TRADES is an existing application available which provides connection between retailers and the farmers by providing the farmers details about the price of different items grown. The great disadvantage of the existing app includes inconvenience based on language and lack of providing facilities to sell seeds and other materials required for farming. The existing application provides facilities for farmers in connect but the only language in which the application operates is English which cannot be understood by many farmers.
There are applications which consists of text with regional language of their own locality but does not reach out to a wide range of people since it can be used only by particular people who are locally available. Local language disability is the main disadvantage of this application
only by particular people who are locally available. Local language disability is the main disadvantage
where it is not language specific.

3. Disadvantages of Existing System

The application allows farmers to sell their products to the retailers but the application fails to help farmers in growing their crops and protecting them from external danger at the farm yard.

Table1: Existing system

APPLICATION	DISADVANTAGES
MANDI TRADES	Locality language dis-adaptability No online payment service No services provided for buying seeds , fertilizers and pesticides.

3.1. Locality Language Dis-Adaptability-

The application does not adapt itself based on the location of the farmers and the only language which the application provides is English**.**

3.2 No Online Payment Service

The application does not provide the facility of online payment and follows the cash on delivery method.

3.3. No Services Provided for Buying Seeds, Fertilizers and Pesticides

This application does not provide service to buy seeds, fertilizers, pesticides other products which are required for farming.

4. Literature Review

Developers of a new online grain trading system are hoping the technology will simplify the buying and selling of grains, and help expand export markets in the process.

A desire to help growers focus their time more effectively and do a better job of bringing buyers and sellers together led Ag Exchange Group Inc. of Saskatoon to build their new marketing platform.
"Grain marketing in general continues to be a challenge for growers, and the interaction between buyers and growers is antiquated," explains CEO Lyle Ehrmantraut, who presented the system at the Agri Innovation Forum in Winnipeg in November. "Growers have told us that they can spend up to 70 to 80 per cent of their time on the phone trying to market their grain, and buyers have limited knowledge of on-farm grain inventories."
The AgEx system is GIS-based. Once a grower signs up for the service (membership costs $1,500 per year), the company will map all of their land, including locations for their grain and chemical storage units, and document grain inventory on the farm. Not only is AgEx a marketing tool, it will also serve as an on-farm inventory management system.
Buyers who become members can search the database for the exact specifications of the quality and quantity of grain they are looking for. When they find a match, they can easily upload a contract with their terms and conditions. That contract is then sent electronically to the grower for review and, hopefully, acceptance.
"For growers, the biggest benefit is exposure to new buyers and having the opportunity to sell their grain at the best possible price," says Ehrmantraut. "For buyers, we're reducing their acquisition risk and giving them a clear understanding of what is available, in what quantities and at what grade."
The current process of the actual buying and selling of grain isn't changing, he adds, but they're making it easier and more efficient for buyers and sellers to find each other.
Growers who don't have the particular product a buyer is looking for won't show up in the buyer's search results, for example, and won't be contacted about commodities that they do not have available.
Ehrmantraut is happy with the response they've received from the industry so far, and says AgEx is the only grain marketing platform that also works directly with major grain buyers which will help Canadian growers to ultimately take advantage of more export market opportunities.
His long-term vision is to get growers a better price and help streamline the grain industry through the three Ms: manage (understand what is in stock), market (market to as many new buyers as possible), and move (get grain to market).
"We grow the best crops and we're not out there like we should be. We have to make Canada a more viable market, so we have to share information with buyers to help reduce their risk when pursuing international opportunities," he says, adding that they only deal with buyers recognized by the Canadian Grain Commission so there is no risk to farmers.

5. Proposed System

Our system connects farmers, retailers and customers directly. Automatic Regional language conversion is present in the application. It provides easier way to sell and buy. It provides the amount of pesticides used while cultivating, which helps customer to buy harmless frowned crops. It acts as an intermediate for farmers for buying seeds, pesticides and fertilizers
Sensors like area reflective sensor and PIR sensors are used to detect the external dangers and to detect fire and notify.

6. Technologies Used

- Raspberry Pi – to exchange data

A **Raspberry Pi** is a credit card-sized computer originally designed for education, inspired by the 1981 BBC Micro. Creator Eben Upton's goal was to create a low-cost device that would improve programming skills and hardware understanding at the pre-university level.

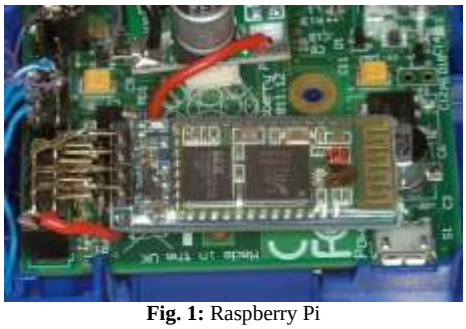

Fig. 1: Raspberry Pi

- FRONT END-Android Studio

Android Studio is the development environment for Google's Android operating system and designed specifically for Android development to create mobile applications.

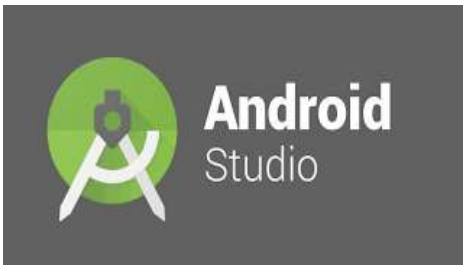

Fig. 2: Android Studio

- MySQL database –

MySQL is an open source relational database management system (RDBMS) based on Structured Query Language (SQL)

- Sensors- PIR sensors, flame detector

Fig.3: MySQL

7. Architecture Diagram

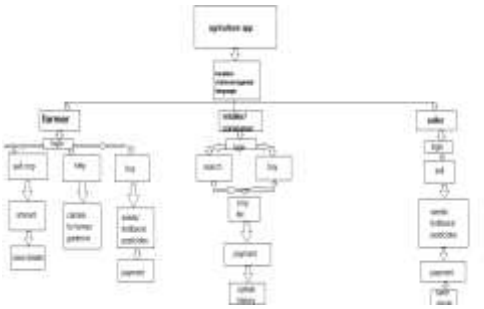

Fig. 4: System architecture

8. Modules

- Login module-Here the farmer login in to the application either through gmail account. First the farmer has to create an account and register himself into the app. Farmer has to enter

his username and password. If it matches the password in the database logs in to the application.

- Compatibility of language module-First after entering into the application it checks for the location. Location is detected using GPS and the application adjusts to the local language according to the area it is present.
- Module for posting selling of crops , seeds , pesticides , and fertilizers
- Here the farmers can sell their crops here. Several retailers and individual consumer can view the crops and also buy the crop directly through the application. The consumer can know about the chemicals used in the crops. Farmers can also buy pesticides and insecticides through this application.
- List generation module
- Secure Payment module

9. Conclusion

The application will track the location of the users and provides us the facility to sell and buy the crops in an efficient way with language adaptability based on the location .It detects the amount of fertilizers has been used to grow the crops and tops the crop list in the application.

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