

Virtual Fruits Market

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Abstract: India is one of the world's biggest producers of fruits and vegetables but its share in the global horticulture market is insignificant. The fragmented supply chain and inadequate health, safety and quality mechanisms (means the quantity and quality of fruits and vegetables) often do not meet the demands of high-end or international markets. Moreover, Indian farmers receive less than a fifth of the end price for the fruits and vegetables they produce, while a long line of middlemen, transporters, wholesalers and retailers get the rest. So, the aim behind developing this app is to give India's huge farming community a fair and consistent price for their produce. Using this android based app "Virtual Fruits Market", will help some of the farmers to overcome this problem. Using these app farmers can directly connect with the end users and supply the product directly to them. This will increase the profit of the farmers and also end users can get good quality product in fewer prices as they will directly buy from farmers.

Keywords: Farmer, Android, GPS, SQLite, sandbox

1. Introduction

The role that agriculture should play on economic development has been recognized for years. The adoption of new technologies designed to enhance farm output and income has received particular attention as a means to accelerate economic development [6]. However, output growth is not only determined by technological innovations but also by the efficiency with which available technologies are used. The potential importance of efficiency as a means of fostering production has yielded a substantial number of studies focusing on agriculture.

The rising cost of food that has hurt both Indian pockets and politicians' electoral prospects in the past year is often blamed on a multi-layered system of middlemen involved in the distribution of produce from farm to fork. Introduced in the 1960s [7], these legally-enshrined committees prohibit farmers from dealing directly with buyers and require them to sell to licensed middlemen. The aim was to give India's huge farming community a fair and consistent price for their product. But over the years, the system has created several layers of intermediaries, lengthening the supply chain and increasing the opportunity for cartels to form, which in turn drive prices down for farmers and up for consumers [9]. Removing fruits and vegetables from the control of these committees would allow the product to find its true market value and damp down inflation, according to analysts.

India's poor infrastructure in crop producing regions also enables middlemen to deceive farmers as to the true value of the produce they are selling[6]. Most of the warehouses are near the cities, increasing post-harvest losses through rotting. India is currently the world's second-largest producer of fruits and vegetables and the post-harvest losses are estimated at nearly 30%. Farmers have little option but to send their produce to urban markets as there are no warehouses close to their fields[6].

So, the goal of this project is to design an application using "Android Technology", which will use to connect farmers & consumers (it may be people or final product development companies like fruit juice making company) & also will pinpoint farmer's products shop or farm within 1 Km range

with the message with location, name & distance from current location of the purchaser. By using this application, farmers can sell their products to end users directly.

2. Literature Survey On Clipboard

The situation here in India is totally different than what it is in foreign countries. There, farming techniques are far advanced than what we see in our Country. Overall, the image of a farmers' market doesn't immediately evoke "high-tech." Over the years, however, farmers' markets have slowly adopted digital technologies to reach an increasingly connected consumer [6]. Today's farmers' markets are embracing digital technology in a number of ways just like a few taking advantage of online tools to connect to their customers. In foreign countries, promoting farmers' markets and other local agricultural businesses is the goal of the MI Farm Market Finder. Using a smart-phone's GPS, the app reveals farm markets, cider mills, farmers' markets and pick-your-own orchards closest to a user when they search the app. More than 350 listings in the app include hours of operation with a link to a market's website, a map to the market and a list products.

Also, the creators of food information app Food tree took a cue from the local food movement and launched an app allowing farmers to broadcast their daily harvest, along with details on where to buy their food locally[6]. The app launched in collaboration with the Vancouver Farmers market Association and this app expanded to include 15 North American cities.

In foreign countries, online Farmers' Markets are available. They provide a new way for the local food movement to grow and combine it with a grocery delivery service and easy-to-use website. By allowing such kind of technology in Indian farm product market will encourage farmers in selling their yield. But there are some problems associate with the farmers such as middlemen, climate, etc.

a) Effect Of Middlemen On Farmer

Farmers sell their produce to licensed middlemen at the APMC (Agricultural Produce Marketing Committee) mandis. These middlemen resell the same produce to

wholesalers at the APMC market in urban areas. At these urban APMC markets, the produce passes on to retailers and then to the end-consumers at the urban retail markets [9]. In the absence of market information farmers do not get remunerative prices and the middlemen get the major share in profit. Thus there is wide gap between the wholesale and retail prices with middlemen consuming the best of the pie. The suicide incidence among the farmers is on the increase for reasons of high indebtedness, low productivity, less remunerative agricultural produce prices, fragmentation of land holdings because of population growth, harassment by the middlemen and money lenders and the widening gap between the urban and rural incomes.

b) Android Platform

Android was built from the ground-up to enable developers to create compelling mobile applications that take full advantage of all a handset has to offer. It was built to be truly open [1]. For example, an application can call upon any of the phone's core functionality such as making calls, sending text messages, or using the camera, allowing developers to create richer and more cohesive experiences for users. Android is built on the open Linux Kernel. Furthermore, it utilizes a custom virtual machine that was designed to optimize memory and hardware resources in a mobile environment. Android is open source; it can be liberally extended to incorporate new cutting edge technologies as they emerge. The platform will continue to evolve as the developer community works together to build innovative mobile applications [1].

Android provides access to a wide range of useful libraries and tools that can be used to build rich applications. In addition, android includes a full set of tools that have been built from the ground up alongside the platform providing developers with high productivity and deep insight into their applications. Android allows background processing, provides a rich user interface library, supports 2-D and 3-D graphics using the OpenGL libraries, access to the file system and provides an embedded SQLite database [4].

c) Data Base

SQLite is an Open Source Database which is embedded into android. SQLite supports standard relational database features like SQL syntax, transactions and prepared statements [5]. In addition it requires only little memory at run time (approx. 250 Kbyte). SQLite supports the data types TEXT (similar to String in Java), INTEGER (similar to long in Java) and REAL (similar to double in Java). All other types must be converted into one of these fields before saving them in the database [1]. SQLite is available on every android device. Using a SQLite database in android, does not require any database setup or administration. The SQLite statements are defined for creating and updating the database only once. Afterwards the database is automatically managed by the android platform [8].

d) Global Positioning system (GPS)

GPS is a space-based satellite navigation system that provides location and time information in all weather

conditions, anywhere on the Earth. The system provides critical capabilities to military, civil and commercial users around the world. It is maintained by the United States government and is freely accessible to anyone with a GPS receiver. A GPS receiver calculates its position by precisely timing the signals sent by GPS sidelight high above the Earth. Each satellite continually transmits messages that include: the time the message was transmitted and, satellite position at time of message transmission. The receiver uses the messages it receives to determine the transit time of each message and computes the distance to each satellite using the speed of light. Each of these distances and satellites' locations defines a sphere [3]. The receiver is on the surface of each of these spheres when the distances and the satellites' locations are correct. These distances and satellites' locations are used to compute the location of the receiver using the navigation equations. This location is then displayed, perhaps with a moving map display or latitude and longitude; elevation or altitude information may be included, based on height above the geoid.

e) Security

Android has security features built into the operating system that significantly reduce the frequency and impact of application security issues[1]. The system is designed so you can typically build your apps with default system and file permissions and avoid difficult decisions about security. Some of the core security features that help us build secure apps include:

- The Android Application Sandbox, which isolates app data and code execution from other apps[10].
- An application framework with robust implementations of common security functionality such as cryptography, permissions, and secure IPC.
- An encrypted filesystem that can be enabled to protect data on lost or stolen devices.
- User-granted permissions to restrict access to system features and user data.
- Application-defined permissions to control application data on a per-app basis.

3. Proposed work

More than half of Indian farmers have small holdings and they don't produce enough to dictate the price of their produce. Most of the farmers don't have storage facility. So middlemen take advantage of weakness of farmers & purchase their produce at less price than the market as well as most of the farm produce are having less life such as vegetables & fruits need immediate selling, but middlemen himself sells that product with profit or to others with share in profit. So to resolve the problem due to middlemen & direct connecting farmers to the consumer, so that they get complete profit of their product & consumer also get fresh & tax free farming produce.

So, I am going to design an application using "Android Technology", where farmer can login to app & give the complete details of farms & fruits. Also purchaser can see the various ranges of fruits & they can select the fruit of their choice & get the price & location of farm from their current

location. This application will be used to connect farmers & consumers (it may be people or final product development companies like fruit juice making company) & also pinpoint farmer's products shop or farm within 1km range with the message with location, name & distance from current location of the purchaser. Buyer will get the road map along with farm location.

4. Conclusion

Various reasons have been conjectured as the causes behind farmer's apathy, ranging from droughts to debt. But middlemen problem is very crucial problem now days, so to remove this chain of middlemen this app will help. Using this app buyer can find particular fruits farm & they can directly buy that fruits from farmers buy going there. This will be beneficial to both buyer & producer of fruits.

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