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GLEANER'S SUCCOR-AN ANDROID SOLUTION FOR GEOPONIC

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Abstract: *Things are changing fast in the world of smart phones. Smart phone to our hearts and eyes, it brings joy and thrill, to our brains and minds, Creative drill. Agriculture is the backbone of Indian Economy. With the contemporary technology phase, everything is being mobilized. So we decided why not we design an app that supports the farmer and connect them with the agricultural research center. Our app provides a facility to enable a farmer to post his query through voice or text or even he can upload a picture of his crop. This query is sent to the research center and the research people will visit the farmer in person and provide necessary solution to his query. This will benefit both the farmer and the research people. Our app also provides other services such as weather forecasting, agriculture news update and updates about current market rates.*

Keywords: *ICT, GPS, Android, AIS*

1. INTRODUCTION

Agriculture's contribution to GDP is about 18% and it employs 51% of total work force. Despite a steady decrease in GDP, Agriculture remains the major contributing sector to India's GDP. Agriculture plays a significant role in overall socio-economic growth of India. Every development has technology behind it as an important factor. Even in areas where there is hardly any development, technology seems to have changed it.[6] The enhanced operating system and small processor has led to Smart phone world from mobile world.[7-8] With the introduction of smart phones, because of its features and easy user interface it became more popular in every nook and corner of the world. Even though smart phones dominate the expensive phones today, they also have low cost categories. In the past 2-3 years, in India, the low cost smart phones have increased. People in the rural areas too use smartphone and use web services using the smart phone.

With the increased use of smart phones around the world, there has been a large number application for all most all the work which we do in our day-to-day life and also for all sort of profession. So our idea is to develop an efficient app for agriculture, as farmers still face problems to increase their crop yield. The main objective of our app is to help farmers to clear all their doubts regarding agriculture, solutions for diseased crops directly from the experts in the nearby agriculture research center in just a click away. When you submit your paper print it in two-column format, including figures and tables. In addition, designate one author as the "corresponding author". This is the author to whom proofs of the paper will be sent. Proofs are sent to the corresponding author only.

2. RELATED WORK

In [1] the information about weather forecast and provides the market price of crops by AIS. It implements security by providing the username and

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password. The decision making ability is given to the system. The match for a particular query is determined by the cube concept which uses nearest edge concept. In [2] ICT make information available to the user using technologies such as GPRS, RRS. It also provides questions that the user will ask related to a particular domain. In [3] the decision making ability is given to system. As the decision system is based on nearest edge matching the information provided in the given query, decision system can sometimes give the irrelevant result as one edge is related to two queries. It provides service through SMS. In [4] the voices based services has been incorporated to help farmers. The drawback that is found in [1] is that it uses nearest edge concept to determine the solution of cube. This may sometime leads to the irrelevant solution.

3. PROPOSED WORK

In our app we propose a way to connect the farmers to the nearby agriculture research center. The farmers can post a query regarding the problems faced by them and queries such as suitable crops for a particular soil and the remedy for diseased crop. In addition to this our app makes the work of farmer in posting a query much less by additionally providing an option to upload the picture of the diseased crop. It also has an additional voice search that enables to give voice input as query. These queries along with the picture (if provided) are forwarded to the Research center nearby by admin. In the Research center the domain of the problem is identified first. Then this is forwarded to the expert of that domain. The expert comes with the solution of the problem and he will visit the farm in person and provides the solution for the issue. Then if needed the agriculture research person may collect samples of soil and test the sample and provide solution to the farmer. In addition to this the solution is also uploaded in the app. In addition to this our app provides a facility to *Track*. This enables the farmer to keep track of his query. If Suppose the agriculture researcher going to visit his farm then the farmer will be able to track the position or status of the agriculture research person.

One of the most important factors of agriculture is weather. Farmers, to decide their day to day work they rely on weather forecast. To make the farmer's job in knowing the weather condition simple, using GPS the position will be automatically tracked and the weather condition will be retrieved using the web services. So the farmers don't have to type any location. This app also provides an additional nifty tool to the farmer by using which the farmer can determine temperature and humidity for a particular crop by querying it. [5]

Due to the lack of information about market prices, the rural farmers just get a vague idea of the market trends. To overcome this, our app provides the option of knowing the current market price. The current price of manure, fertilizers, vegetables, fruits can be known by using web services. This helps a farmer to compare the prices of various manures and fertilizers, and select the best suited for him. Government helps the farmers in a great way by making various policies. Government also offers a wide range of loan to aid the farmer to increase his yield. In order to get the updates about this news, our app has an option called *news update*. This helps the farmers to be up to date about the policies and loans provided by Government so that they can get maximum benefit out of it.

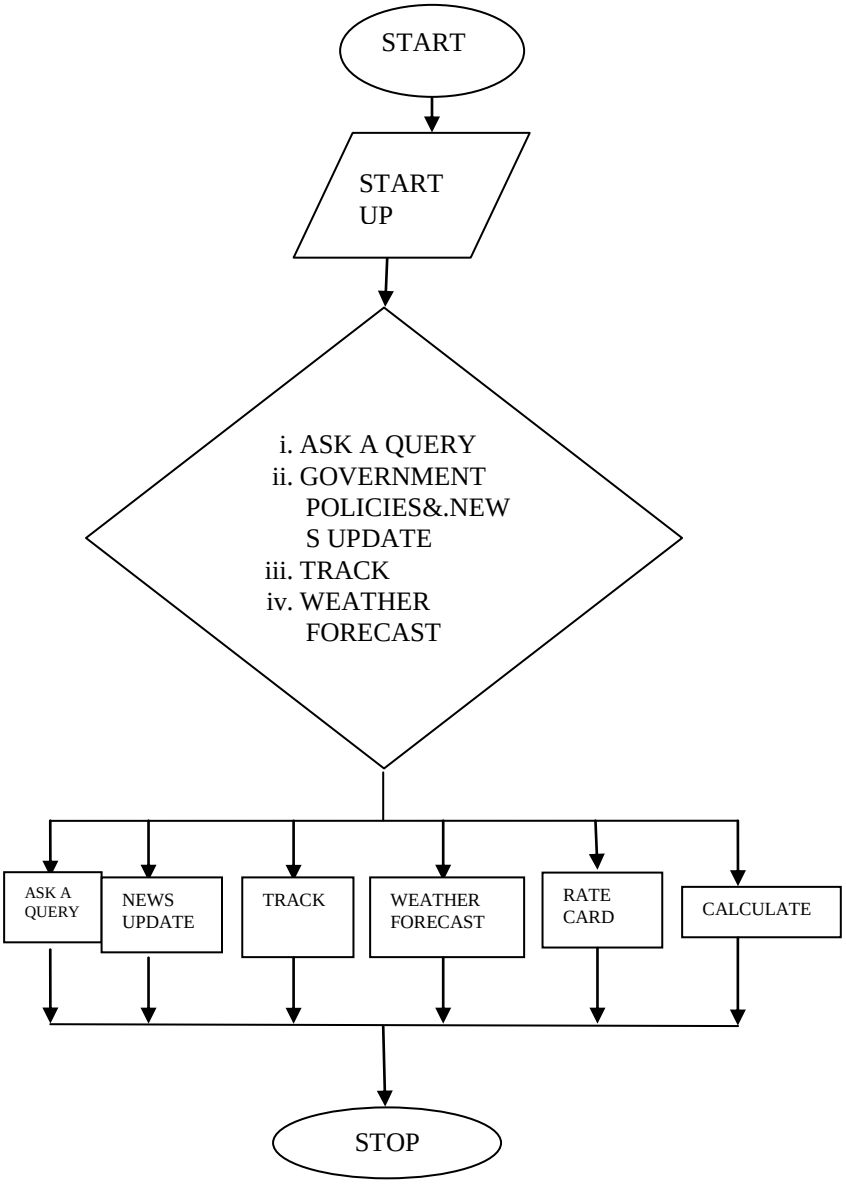

Figure 1: Control Flow Diagram

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In another module, data is per-fed from which agriculture related calculation such as feed calculation can be done. The numerical input is provided by the user, the app takes values from the pre-fed data and perform necessary calculation and provide the result.
Apart from these features this app also provides, tutorial on manure. Additional feature is that is also creates emergency plans and stores emergency phone numbers. Fig1. Depicts the control flow diagram of the proposed system. Once the user starts up the app the user can select his desired option. All the modules are arranged as tabs in the screen of our app so that it would be easy for the user to locate the desired task. The user can select his desired module such as Ask a query and he can also switch between the options just by clicking the tabs. Thus the drawbacks in [1] are also overcome by our unique approach of connecting research center to farmers.

4. WORKING

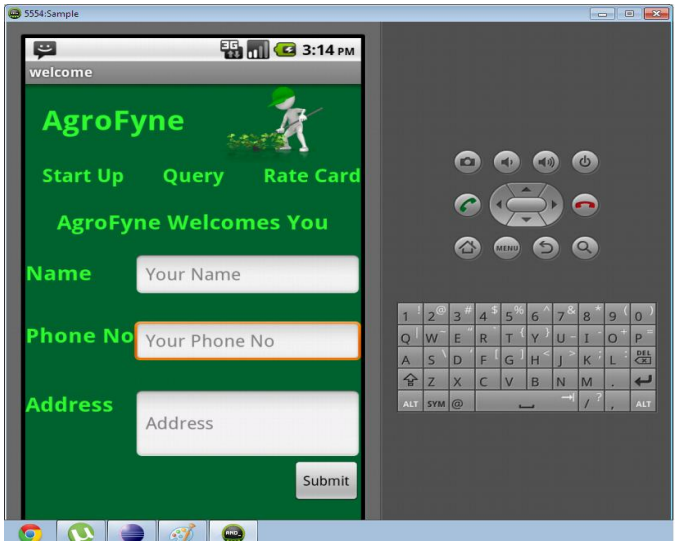

Figure 2: Start up Page

The Fig2 shows the startup page for our app. This contains Name, Phone no, Address. This makes the startup for the farmer to be easy .It would be difficult for the farmers to remember the username and password. We incorporated a simple start up that requires only little effort. [9]

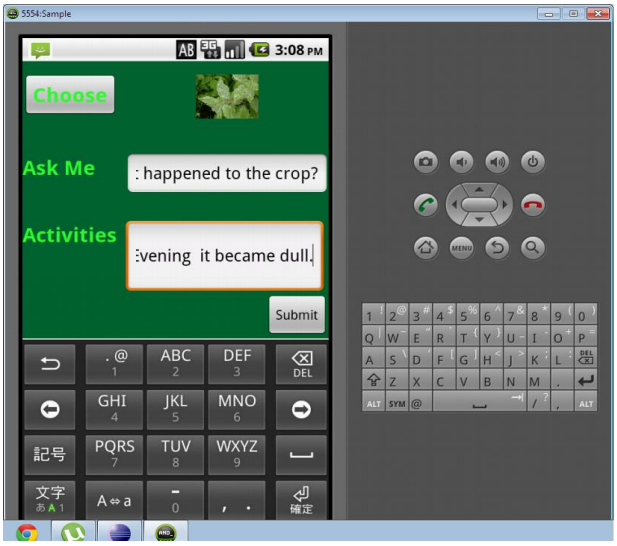

Figure 3: Ask a Query

The fig3 depicts *ask a query* option. When the farmer selects the query tab he can *choose* the picture of his diseased crop and query for the same. *Activities* are optional if the farmer wants he can include it. This may include the symptoms that the crop showed up. Once he presses the submit button. The query is sent to agriculture research center.

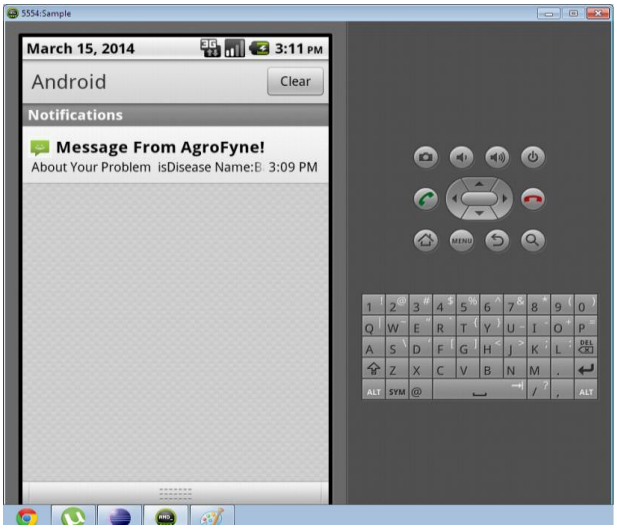

Figure 4: Message from Agriculture Research Center

In the agriculture research center the admin will forward the query to concerned domain expert. The expert will give a solution for the problem that is sent as a *SMS* to the farmer as shown in fig4. The agriculture research expert may visit the farm to collect the soil and to test them.

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Figure 5: Rate Card

If the farmer has been suggested some chemicals he could check out the rates of chemical by using this Rate card as shown in fig5.He have to select the *chemical* prescribed by the Agriculture Research Center from the drop down menu as shown in fig6.The price of that particular chemical is displayed. The Farmer can also be updated about the rate of vegetables that is sold in market. This gives him a rough estimate of how much should he sell his yields.

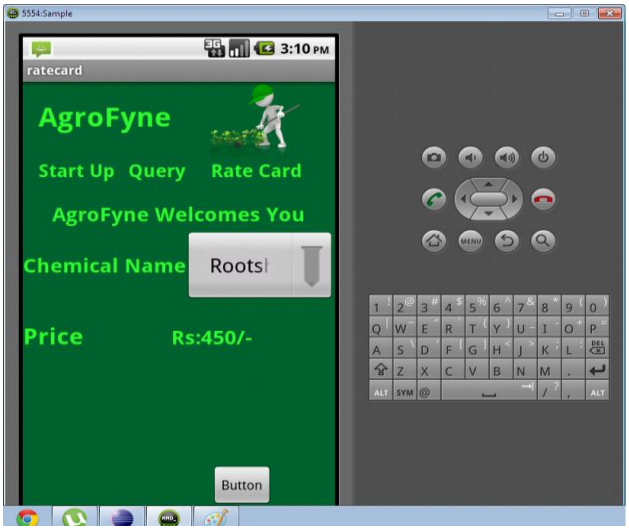

Figure 6: Rate Card displaying the price of a chemical

5. ACKNOWLEDGEMENT

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6. CONCLUSION

In the modern era, there are many services that provide agriculture information to people. Our proposed system, suggests a unique approach that is used to connect farmers to the nearby agricultural research center. This helps the farmers in various aspects such as weather forecasting, updates about the government policies and loans. In future the app can be implemented by incorporating different regional languages, effective chemical control information which helps the farmer further more. The future work may also involve

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