

FarmAssist, Efficient Cost Planning and Disease Identifier

Sharishth Singh¹, Ayush Mishra², Dr. Baljit Singh Saini³

¹B. Tech. (Computer Science & Engineering) Lovely Professional University, Phagwara, India

²B. Tech. (Computer Science & Engineering) Lovely Professional University, Phagwara, India

³Associate Professor (School of Computer Science & Engineering) Lovely Professional University, Phagwara, India

Abstract - FarmAssist is a website that will help farmers to increase productivity simply by entering basic inputs without making it complicated and get analytical feedbacks. Almost more than 50 percent of India is involved in agriculture; hence it will be difficult to counsel every farmer of India in a short period. Also, a contribution of agriculture to the GDP of India despite involving more than half of the country's population as the workforce was almost 20 percent in the year 2020, however, we believe that this can be further leveled up by simply connecting farmers to the internet, hence this is where our platform comes in place. The purpose of this website is to provide the least cost supply list, connect to an expert by chat if further assistance is needed and guessing the disease of crops, and taking precautions. To process the data we are using SQL, and to make the application interactive we are using ASPX, JavaScript and, Nodejs.

Key Words: Agriculture; productivity; identify

INTRODUCTION

This capstone project will define its research and applications in the agriculture sector mainly the prediction of produced cultivation, maximum yield, and crop disease detection by symptoms. The main aim of this project is to help farmers to increase their profits and efficiency. This application will take input from farmers and then analyses and compare from dataset to give the best possible prediction and advice. The system will make use of cloud computing and little data science to further analyse the solution.

The datasets should be updated on yearly basis by contributors and data providers, as this will be only in effect if farmers are updated with latest information. There are several farmers who make unintended bad decisions one after another and reduce their chances of profit.

Unsustainable farm practices in unpredictable environment and weather conditions are to be focused upon. Agriculture need smart and quick system based on traditional and modern knowledge that improves the use of natural and artificial resource while raising productivity.

Farmers also needs consultancy for their crop health, which is difficult to get in remotes location especially in India where its in huge numbers, which will cause individual consultation to be over-whelmed.

Farmers can get consultancy from website to get access to immediate help. A similar government website <https://manage.gov.in> where they can get information for training from crop doctors however its not as effective for immediate consultant. As it only provides information about experts, but farmers must then contact themselves further.[1]

Our chat option will immediately connect to online expert for help: (and conversations can be as followed):

Hi! I am Corp Expert How may I help you?

Type "diseasecom" to compare to two similar disease and identify the right one

Hello, I am here for you to consult online, please send me queries.

User(farmer) and assistant(expert) roles are present. The whole data can be transcribed or downloaded to to be used later to help local centers. Data will be updated after every 30 days, to provide information of restock of growth materials for crops. It can also be further shared with local newspaper of a district to widespread the information

RELATED SURVEY

The main goal of this project is supporting those farmers who cannot get assistance. The platform we made is based on preexisting government portals, mkisan[2] and FARMER'S PORTAL[3].

Farmer's portal is the system used in online agriculture service to automate and represent data to farmers like, input(seeds, fertilizers, pesticides, farm machinery), crop management, post crop management, harvest, risk management, soil type, etc. This online portal is set-up with combination of different modules and applications. The platform has been developed with MSSQL and aspx.net. The database is generated through MSSQL and the represented through server to client with aspx files.

[5]Numerous web site provides farming data associated with fruit, flowers, and vegetables. however of these knowledge are in English and in Text kind.[8] that's why Indian farmers United Nations agency are illiterate don't seem to be able to cash in of those services. though that person needs to, he

desires a laptop computer or alternative device that makes him/her enthusiastic about somebody.

IFFCO Kisan Sanchar restricted (IKSL) and Routers Marker lightweight (RML) are the agencies that are presently providing agriculture data via SMS and decision. However they take cash for the usage of their services and don't work wherever mobile network isn't obtainable. This application additionally provides extra options like Government Notifications, Bank notifications etc.

[6]Nidhi Dwivedy has planned that: call Support Systems are a lot of necessary and typically avoids risk developing environments. it's been recommended that the World Trade Organization is stipulating reductions for export subsidies on farm merchandise and can create Indian exports a lot of competitive. it's been calculable that the export potential could increase up to \$ one.5 billion by 2020. The advantage of the rising order, is that the Indian farmer has to be equipped with data that are expedited by enterprise a proper[2] SWOT associate degree analysis and its comparison could LED to standard knowledge and satisfy himself on an acceptable course of action. The obtainable data doesn't satisfy that comes on the weaknesses of the adverse result of World Trade Organization on any specific agricultural product can facilitate in taking the mandatory corrective measures. within the gift state of affairs, the competitive advantage is essentially needed to be absolutely exploited for increasing the export potential.

[7]Market and value data the subsequent are samples of initiatives to boost food production and security by up market linkages and access to native and international markets for husbandman farmers' merchandise. They place confidence in many levels of data generation and dissemination, together with at the farmer and community levels:

Rural information Network test for East Africa: This project encompasses market access networks in Kenya, African country and Uganda, with actors at national, district and native levels United Nations agency keep a relentless and effective communication link (e.g. via e-mail, telephone, SMS, faceto-face conferences, Internet) for information-sharing and business-to-business learning. Initiated by FAO, the test ran from 2007 to 2010; its most well-established and active offspring is Agri web Uganda.³⁸ Market Linkages Initiative Bridging Activity (Malawi):[1][5] This USAID funded project helped improve post-harvest handling, developed a clear mercantilism atmosphere and enlarged access to correct market data for husbandman farmers through a partnership with Esoko Networks and also the Agricultural exchange. girls groundnut producer farmers were trained in ICT skills for sourcing market data via associate degree Esoko SMS-based subscription service, and consequently were able to sell their manufacture at a fairer value, organize transport in additional efficient ways that and quintuple their earnings.³⁹ Krishi FM (Nepal): A rural radio depends on

farmer-generated market data to tell its listeners. Farmers United Nations agency rove or sell at native markets phone in to the area people radio to share data on current market costs. SIM-Agri (Burkina Faso): IICD and its partners launched SIM-Agri, a platform giving three 000 farmers access to very important market data via mobile phones and computers. market value collectors round the country gather data at numerous farmers markets then send data concerning costs and merchandise at those markets to the SIM-Agri platform.[7] For the value of an everyday text message, the farmers will ascertain {the values|the costs} of their crops in numerous markets and learn once and wherever they will earn the simplest price for his or her manufacture.

[8]FarmManager-The management of small farms, designed and developed to respond to the needs and Characteristics of farmers of Greek. It can store database, do farm customization, easy field management, land field data, easy job recording process, employees and equipment.

[9]AgroMobile-Develop Especially for the Indian farmers to assist them in agricultural needs. It is used for botanical species recognition and disease detection using a simple mobile phone with camera

[10]Krishi Ville-It takes care of the updates of the different agricultural commodities, weather forecast updates, agricultural news updates. The application has been designed taking Indian farming in consideration

[11]Agriculture Supply Chain Management-The complete package for farmers who want to do farming on sugarcane and obtain good production with proper management

[12]Scheduling, Controlling And Monitoring of Agricultural Devices-Used to farmer in controlling the motor pesticides proportion, monitoring the farming activities going on in the farm remotely and also allow for improving the efficiency of the irrigation process.

[13]E-agree-Used to detect detects leaf diseases. Also provides online market place, market rate guide, weather report and soil information to the farmer

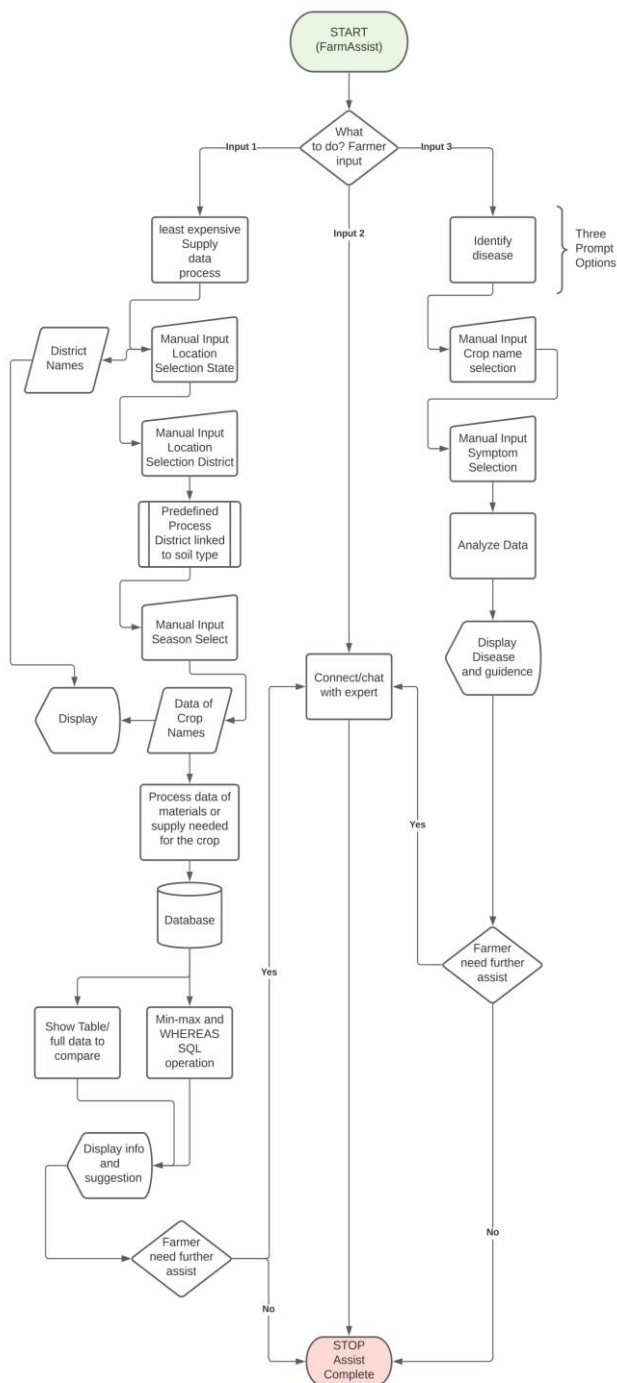
PROPOSED WORK

Our key goal is this project is to give out detailed information and suggestion to the farmers, so that they do not have to put much effort finding it elsewhere near the local authority. Adding to that we have also further created a webapp to chat which can be independently hosted on service like netlify or Heroku. It is an authenticated process where user should have unique room id provided by the app to get consultation from specific expert. We have extracted and represented data from farmer.gov.in, which we further simplify into more easy and understandable data. Both our platform and database (aspx + mssql) along with our chat web app

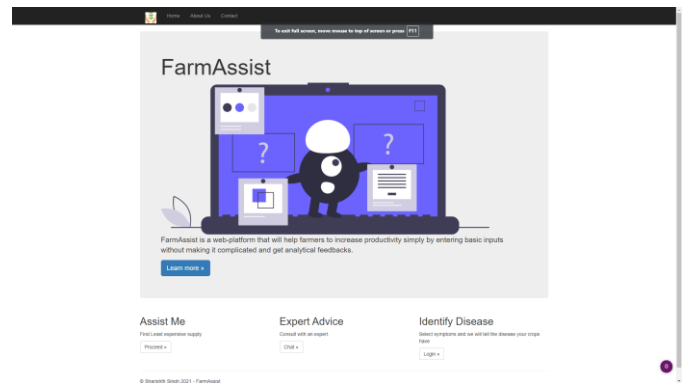
(NodeJS + Express + Reactjs + socket.io) can be further on hosted on cloud services of any choice, i.e. AWS, Azure or GCP.

Helping farmers is duty of our system and society to endorse the concept of sustainability. As the scale of farming and agricultural material is increased, it is necessary to have a application for farmers to enable them online tom let them know the best method for their yield.

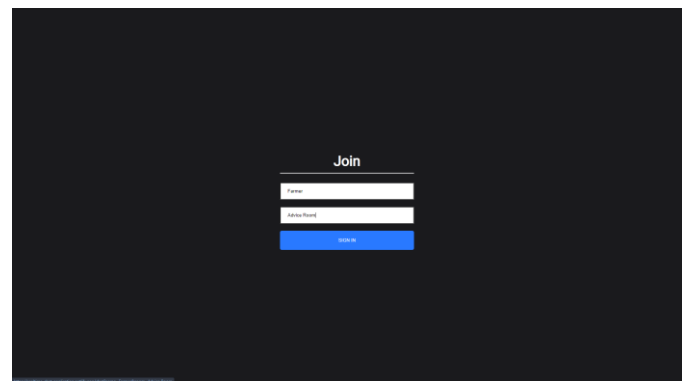
Flow Chart



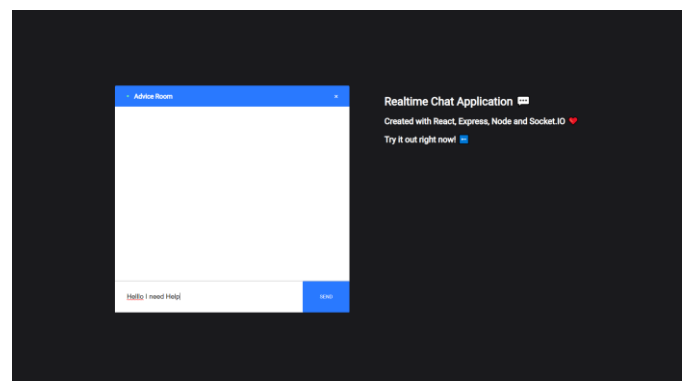
SIMULATION RESULTS



Description- This will be the project home page. As shown, there are three major choices for user to get further assistance.



Description- expert advice login



Description- expert chat room (from advisor perspective)

CONCLUSION

To give easy help to farmers, we must support all so that they can help the next generations farmers. So, we came to realization that we need to help by breaking down information to on our platform. It also shows the weather report and climate for every district selected. 30% of our Indian farmers are still illiterate then we thought its our duty to make information comprehensible for them. Every time,

new solutions and technological advancements are introduced, making tasks more efficient and less time consuming. It is impossible to go to every farmer to consultate them and by doing this we thought of reducing the gap. In pre seasonal periods, the procedures and estimations can be perceived using this to predict loss or profit. People who want to volunteer to chat or update the database can further help to make this better.

This platform is also making the fertilizer and crop medicine manufacturers to reach out their potential customers, and promoting the healthy business competition. The weather API, OpenWeatherMap in this website will give farmer forecasted information. This Web development project is designed with open-source tools making it easier to audit and recreate into better platforms.

We hope that these suggestions and tabulated information will help farmers all around nation and other developing worlds too.

Our research indicates that simply providing information access to its users does not contribute to more understandings of methodology and investments of farming. Social workers and Agricultural engineer can participate further to enhance the liability of information and spread of better cultivational methods. On national farming day (Kisan Diwas) if engineers and biologists can be motivated, it will inspire others and set an example for the world to protect environment and have better farming methods. Better farming methods will also reduce shortage of food supply also contributing to reduce world hunger.

REFERENCES

- [1]<https://www.manage.gov.in/> by government of India
- [2]mkisan.gov.in by government of India
- [3]farmer.gov.in – farmer’s portal by government of India
- [4]K. Elissa, “Title of paper if known,” unpublished.
- [5] Hongdong Guo. –An analysis about factors which affect farmers
- [6]Marcel Fafchamps and Bart Minten “Impact of SMS-Based Agricultural Information on Indian Farmers” in Oxford journals VOL. 26, NO. 3, pp. 383–414, 2012
- [7]LUAN Jingdong and CHENG Jie; Establishment of the Agricultural Risk Management System Based on Industrial Chain[]; Issues in Agricultural Economy;2007-03
- [8]Lantzós, T., Koykoyris, G., & Salampasis, M. (2013) -FarmManager: an Android application for the management of small farms[], Procedia Technology, 8, 587-592

[9]Prasad, S., Peddoju, S. K., & Ghosh, D. (2013) -AgroMobile: A Cloud-Based Framework for Agriculturists on Mobile Platform[], International Journal of Advanced Science and Technology, 59, 41-52

[10]Singhal, M., Verma, K., & Shukla, A. (2011, December) -Krishi Ville—Android based solution for Indian agriculture[], In Advanced Networks and Telecommunication Systems (ANTS), 2011 IEEE 5th International Conference on (pp. 1-5). IEEE

[11]Monika Chirmade, Komal Tayade, Gaurav Sham Bankar, Shounak Sugave (2015) -Agriculture Supply Chain Management Based Android Application[], International Journal of Advanced Research in Computer and Communication Engineering, Vol. 4, Issue 4

[12]Mukesh Choudhary, Sumeet Dhone, Akshay Jadhav, Chetan Dhandal, Prof. J. M. Nighot (2015)-Scheduling, Controlling And Monitoring of Agricultural Devices Using Android Application[], International Journal of Advanced Research in Computer Engineering & Technology, Vol. 4, Issue 4

[13]Santosh Reddy, Abhijeet Pawar, Sumit Rasane, Suraj Kadam (2015) -A Survey on Crop Disease Detection and Prevention using Android Application[], International Journal of Innovative Science, Engineering & Technology, Vol. 2, Issue 4