

Figure 1: (Sequence of a Application Execution)

To provide a client(farmer) different soil type drop list(Approximately 8 Types of soil), water supply requirement options ( Different 4 Ranges), Provide temperature ranges(3 Ranges ) and different average climate options and Soil PH(4 Range) and month Duration (Kharif/Rabbi)

Use this Statistical data plus Neural Network Function to calculate a preferred crop list. If particular crop get selected from client from preference list then provide a detail of information related to that particular crop cultivation for e.g

- 1) Where to get seed or plants
- 2) How to crop cultivate process
- 3) How to manage crop maintenance etc.

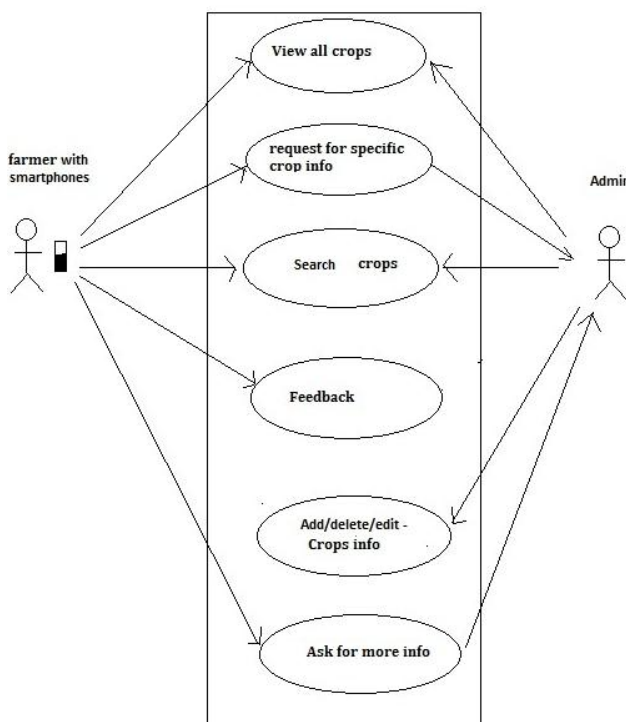


Figure 2: (Case Diagram of App)

Different Functions are provided to Farmer as first List of all Crops approximately production wise available from Maharashtra that will help to farmer to take a particular decision clue or overview of crops.

### 3.4 Expert System for Decision Making

The conventional decision support have predefined set of input data, after that they begin analysis. They precede the data, step by step as directed by algorithm, to reach conclusion. They rely on extensive knowledge base (in their mind) which may contain facts, assertions, past mistakes, trial – by – error method. The machine equivalent human experts are expert systems. The expert system works with cognitive approach and stress the knowledge in knowledge base which is separate component. So that changes in knowledge do not change whole structure of expert system. Another advantage is reasoning capability. They can explain reasons for arriving at particular decision.

Classic decision support system design comprises of components for i) sophisticated database management capabilities with access to internal and external data, information, and knowledge, ii) powerful modeling functions accessed by a model management system, and iii) simple user interface designs that enable interactive queries, reporting, and graphing functions

### 3.5 Mobile Use in Agriculture

Advance technology use in agriculture which will help to increase productivity of farm. Mobile is now very commonly use by all people so make use of that to increase agriculture production.

Android is one of advanced Operating System of Mobile which has lots of advantages. Android is a Linux-based, open-source operating system designed for use on cell phones, e-readers, tablet PCs, and other mobile devices. Mobile technologies provide a clear opportunity for sharing and exchanging knowledge more widely and in a more cost-effective way than has previously been possible.

Now in Advanced Technology era maximum number of people use Mobile Phones not only for communication but also increased their knowledge, learn new things, more and more farmers now own mobile phones and this, coupled with recent developments in Information Communication Technologies (ICTs), has created a new opportunity to ensure that farmers can get the information they need. But up till now for this inherited or traditional method are used which are not 100 percent assured Profitability. As in this era of advanced technology lots of uses of mobile in different fields and one of them is agriculture field.

### 3.6 Different Functionality

There are two users for this application. 1) **Admin** 2) **Farmer**, there are different options are available to different as per user

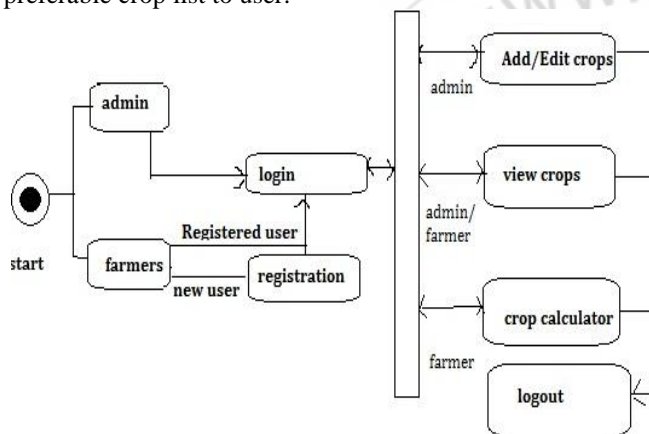
1) Admin login have facility of

- a) Add crop
- b) Edit/Delete
- c) Search Particular Crop
- d) View All Available Crops

2) Farmer has to register first and provide personal information and its create a user id. Next sign up first using a username and Password and there are different options are available of

- a) View all Crop List
- b) Feed back
- c) Crop Calculator

Login options for different users as per there login different facility. View all crop is a display of all available crops and Feedback is a option for farmer to write some suggestion, advice or any related improvement for app. Crop calculator is main module from which farmer can give different available inputs to app, on these input backend calculation using different statically backend data and provide a list of preferable crop list to user.



**Figure 4:** (Overall Data Flow Design of App.)

## 4. Results & Discussion

However 80% of farmer said the use of Mobile Phones improved their livelihood. This application provide a preferable crop lists to user(Farmer) after providing inputs of environmental data to app. However this can be helpful for those who are new to agriculture which will help farmer to take a decision which crop productivity will be more and increase a income from farming

## 5. Conclusion

This Decision support System will be Useful in Agriculture System to suggest Farmers to select a crop for cultivation mapping using different ground parameters Soil type, Average Weather, Water consumption, Temperature and soil PH. As this system more helpful to increase productivity of crops and indirectly to increase GDP of India reduce poverty.

## 6. Future Scope

Modern agriculture offer a range of benefits including greater production and higher income for farmers in both developed

and developing countries for e.g using a mobile for take a decision in crop selection so that increase a production of field in available environmental situation.

Farmer empowerment can be successfully achieved by providing them right information at right time. Informed decision making by effectively utilizing the different new technology and different agriculture model tools will increase productivity. This will not only motivate the farmers in the rural area, but also drive urban youth towards hi-tech farming.

## References

- [1] International Journal of Advanced Research in Electronics and Communication Engineering (IJARECE) Volume 4, Issue 1, January 2015, "An Artificial Neural Network Approach for Agricultural Crop Yield Prediction Based on Various Parameters" Snehal S. Dahikar, PG Student (EXTC), Dept. Of EXTC, Sipna College of Engineering, Amravati, Maharashtra, India
- [2] International Journal of Emerging Technology and Advanced Engineering Website: www.ijetae.com (ISSN 2250-2459 (Online), An ISO 9001:2008 Certified Journal, Volume 3, Special Issue 2, January 2013) National conference on Machine Intelligence Research and Advancement (NCMIRA, 12), INDIA. Shri Mata Vaishno Devi University (SMVDU), Kakryal, Katra, **INDIA Predicting Suitability of Crop by Developing Fuzzy Decision Support System.** Rajeshwar G Joshi1, Parag Bhalchandra2, Dr.S.D.Khmaitkar3
- [3] **Analysis of Trends in India's Agricultural Growth by** Elumalai Kannan, Sujata Sundaram ISBN 978-81-7791-132-9
- [4] **Agriculture Productivity In Solapur District Of Maharashtra: A Geographical Analysis** International Journal of Agriculture Sciences ISSN: 0975-3710 & E-ISSN: 0975-9107, Volume 4, Issue 2, 2012, pp-186-189 Available online at <http://www.bioinfo.in/contents.php?id=26> AWATE S.J.1 AND TODKARI G.U.2 1Dept. of Geography, Walchand College, Solapur, MS, India.
- [5] An Open Access Journal published by ICRISAT **Changes in Climate will modify the Geography of Crop Suitability:** Agricultural Biodiversity can help with Adaptation A Lane1 and A Jarvis2, 3 1 Bioversity International, Via dei Tre Denari 472/a, 00057 Maccarese, Rome, Italy 2 Bioversity International, Regional Office for the Americas, c/o CIAT, AA6713, Cali, Colombia
- [6] **A Decision Support System for Enhancing Crop Productivity of Smallholder Farmers in Semi-Arid Agriculture** Ayubu J. Churi1, Malongo R. S. Mlozi1, Henry Mahoo2, Siza D. Tumbo2, Respickius Casimir3 1Department of Agricultural Education and Extension, Sokoine University of Agriculture
- [7] **A Decision Support System for Agriculture Using Natural Language Processing (ADSS)** Prof. Mrs. J.R.Prasad, Prof. R.S.Prasad, Dr. U.V.Kulkarni.

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