

E-farming using Cloud Computing

Abhishek Pandey

Departement of Infromation Technology, Mumbai University

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ABSTRACT

The main objective of this project is building a website which will help farmers from Indian villages too sell their products to different cities. Here if suppose some village farmers want to use this facility and want to learn how is it possible and how they can use e-farming to sell their products, If they have knowledge of computer then they can directly register in the site and sell their product otherwise they can contact company's computer professional who will schedule classes to teach them basics of computers and internet like how they can open this site and register with it and sell their products online etc. On the other side, wholesaler from town can also register and buy products as per their needs. Cloud computing encompasses a whole range of services and can be hosted in a variety of manners, depending on the nature of the service involved and the data/security needs of the contracting organization .Cloud computing is fast creating a revolution in the way information technology is used and procured by organizations and by individuals.E-farming means not whole farming done electronically instead whole transaction is managed electronically through web-site.Farmer did not do anything only he had to register on website.The main objective of this project is building a website which will help farmers from Indian villages too sell their products in different cities to different customers.

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Corresponding Author:

FirstAuthor,
Thakur College of Engineering and Technology, Mumbai, India
Email:zak.abhishek@gmail.com

1. INTRODUCTION

Electronic Farming (also known as e-farming) is a term encompassing several different types of farming activities like weather details, price details and buying/selling different products. Remote e-Farming where Farmer or Customer are directly communicate with each other. Internet Farming systems have gained popularity and have been popularly used in the Australia, United Kingdom and Switzerland. Electronic Farming systems may offer advantages compared to conventional farming technique. The main objective of this project is building a website which will help farmers from Indian villages too sell their products in different cities to different customers. Here if suppose some village farmers want to use this facility and want to learn how is it possible and how they can use e-farming to sell their products, If they have knowledge of computers then they can directly register via the site and sell their product else they can contact company's computer professional who will schedule classes to teach them basics of computers and internet like how they can open this site and register with it and sell their products online etc.On the other side, wholesaler from town can also register and buy products as per their needs. We are going to implement e-Farming with the Help of Cloud Computing. The project to be produced will be focusing on converting the current Farming system currently being used by the Farmers. The current Farming system being used by the Farmer/Customer

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is currently suffering from not allow to do transaction. The system to be created will address this issue by providing Farmers/Customers with the id with capability of performing transaction via internet enabled computer. The project will focus on the current Farming method being used by the Government or Farmers/Customer, and identify a way in which the method can be modeled with the internet Farming system to be implemented. In this project we are focusing on taking the whole Farming procedure over the internet. This basically will help individuals to perform transaction from their places of convenience (E.g.-Home, Office). Thus we aim at that both Farmers and customers can get equal profit margin by directly communicating with each other. The purpose of using the cloud was the reliability and availability offered by it. We are using the Google App Engine Cloud Environment.

2. LITERATURE SURVEY:

The Macro Management of Agriculture Scheme is one of the centrally-sponsored schemes formulated with the objective to ensure that central assistance is spent on focused and specific interventions for the development of agriculture in states. It became operational in 2000-01 in all states and UTs. The scheme provides sufficient flexibility to the states to develop and pursue the programs on the basis of their regional priorities. Thus, the states have been given a free hand to finalize their sector-wise allocation as per requirements of their developmental priorities. Furthermore, in efficient farming (Australia) out on the tractor one day, the concept of building a one stop shop for the farming community was born. The aim: to provide a rich source of customizable news and information. With the onset of drought in the Northern Agricultural regions of Western Australia there were the normally unattainable resources of time and energy available for research to be conducted into whether a project such as this could come to fruition.

The people behind Efficient Farming are young and successful farmers who are similar in their proactive approach to sustainable agriculture and advancing the Agricultural Industry and together they could see the endless possibilities for expansion and enhancement that would guarantee the success of Efficient Farming in the Agricultural Industry. The Agriculture Marketing Information Network is a central website which contains all the statistics of the food products in the country. The site contains all the latest prices of the food grains and the crops grown in the country. Above mention two projects based on E-farming system. Both projects having common features like providing price details, information about different products (Corps). But none of the above projects allows us to do Transaction between Farmer and Customer. Also both are not directly communicate with each other.

Since 1970-71, Agricultural Censuses have been conducted in India regularly at five yearly intervals to meet demands of data for planning of agricultural sector and also to meet the requirements of World Census of Agriculture organized decennially by Food & Agriculture Organization of the United Nations. Prior to 1970-71, National Sample Survey Organization, Ministry of Planning in 1950-51 and 1960-61, conducted sample surveys. Though, the information collected through these surveys were broadly the same as that in the present Agricultural Census, these surveys were not able to provide estimates at lower administrative levels such as districts or tehsils due to inadequate sampling proportions. Keeping in view the importance of data on structural aspects of agriculture and the periodicity of Five Year Plans, National Commission on Agriculture recommended conducting of Agricultural Censuses at five yearly intervals.

3. PROPOSED SYSTEM AND IMPLEMENTATION

In this project we are describing the Farmer/Customer as an entity that's attributed will be stored and maintained by a Data-store. When the Farmer/Customer registers for an account he will be provided by a user id and password with which he can access the account any time anywhere. At the time of the registration the Customer/Farmer will have to provide details such as:

Name (First, Middle, Last), Age, Date of Birth, Income, State/Dist./City and Regional Address

These entire fields will be validated and then only they will be recorded by the Datastore. Similar maintenance will be done by the Datastore Administrator. At the time of Registration the values in the Datastore will be checked for whether a similar account is being created. If found then the registration process will be suspended. Datastore Administrator can also be able to look into the various records entered into the Datastore. Traditionally, the transaction part of farming was carried out by the farmer himself where he had to face losses. The manufacturers and the traders of the village would purchase the raw food grains and food products at a lower rate from the farmers. And in turn would sell it at a higher price in the market. Hence, the farmer was the lone sufferer. By taking all the features on the internet, the farmers would be better aware of the prices of the seeds and commodities. In turn, the manufacturers and traders would also be able to make transactions online to their clients in any part of the country.

3.1 Design and Implementation

Our project was based on the Java Programming Language and had to be deployed on to the cloud ,not many options were available to us some of the shortlisted tools we considered were as follows:

1. Microsoft Azure Platform
2. Google App Engine
3. Amazon Cloud Services
4. IBM Cloud Services
5. Ubuntu One Cloud Service

After considering all these options we had an in depth study of them to decide which particular service we required that would suit our needs. Further analysis showed that the google app engine platform would be the best choice due to their support for the java programming language and their dependable services

3.2 Google App Engine:

The Services Providers considered are: 1GB of Cloud Storage Space, Datastore Service Api for storing data, Blobstore Service Api to handle images and store them, and 4x7 Maintenance Support. Google App Engine (often referred to as GAE or simply App Engine, and also used by the acronym GAE/J) is a platform as a service (PaaS) cloud computing platform for developing and hosting web applications in Google-managed data centers. Applications are sandboxed and run across multiple servers. App Engine offers automatic scaling for web applications—as the number of requests increases for an application, App Engine automatically allocates more resources for the web application to handle the additional demand. Google App Engine is free up to a certain level of consumed resources. Fees are charged for additional storage, bandwidth, or instance hours required by the application. It was first released as a preview version in April 2008, and came out of preview in September 2011. This process is explained below in figure 1.

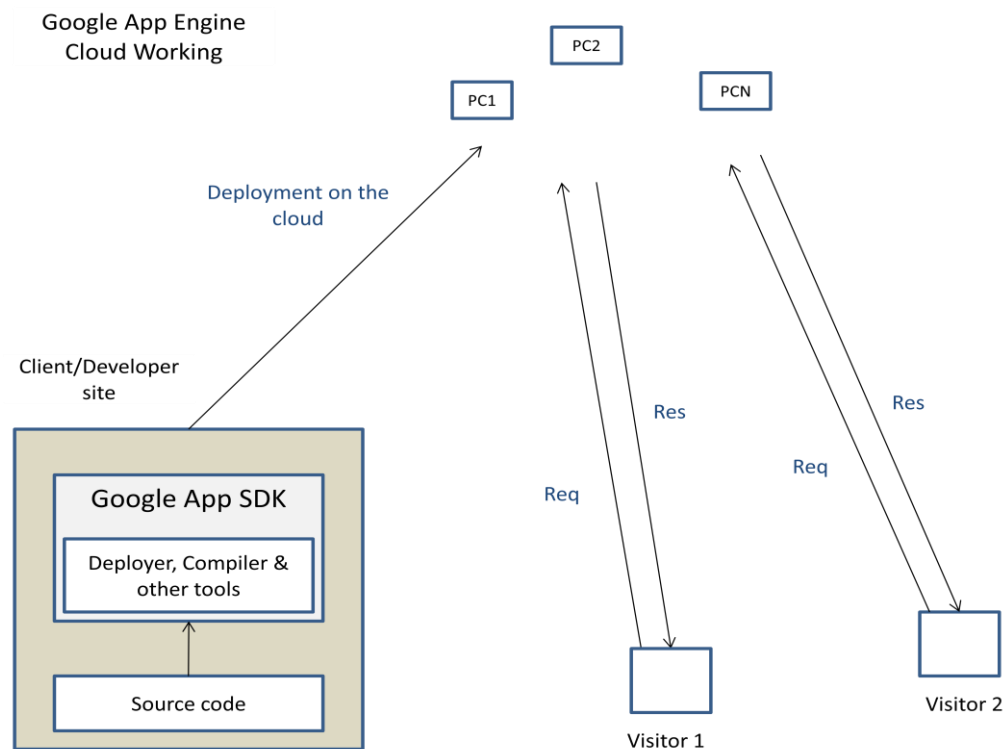


Figure 1: Working of the Google App Engine

3.3 Stage wise Implementation

Our project was divided into different stages or can say modules, these modules helped to decide the actual flow of the application and implementation of the project was achieved smoothly with the modular approach. The modular Approach was achieved with the help of the class diagram scheme.

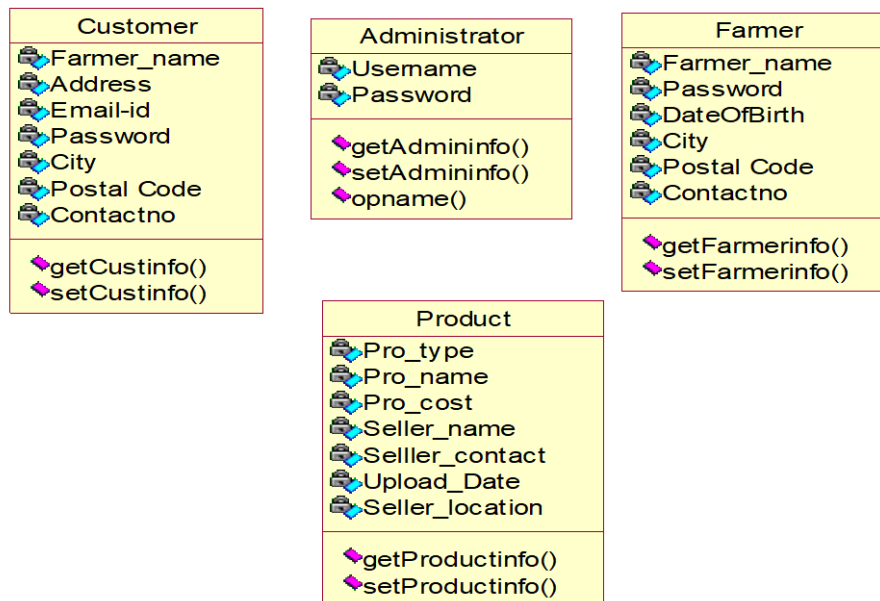


Figure 2: Implementation Modules

1. Implementation Stage. After the development of the individual modules of the project we looked in to the implementation of each of the module and defined the relation between them, this was achieved by the use of flow charts which described the functions of each of the modules used in the project.
2. Cloud Implementation: Working of the Google App Engine. The implementation scheme of the project was categorized as per the configuration of the google app engine, the google app engine working can be illustrated by Figure 1.
3. Customer Registration. The Customer Registration process involves that the customer enter his personal details and one or more required fields those are then validated by the application and the success or failure of registration is decided if the registration process fails then the customer has to register again of course with the genuine details required for the registration process.
4. Farmer Registration. The Farmer registration process is similar to the Customer registration process the customer also has to fill genuine details in order to successfully perform the transaction process of the farming process.
5. E-Farming Process Implementation. This is the most important phase of the project development this phase provides the implementation of the farming process it provides details on how the farming process will be carried out efficiently.

3.4 User Interface:

1. Home Page: This is the Home page where users or administrators can login.
2. Login page: The website has three modules for login. One each for the Farmer, customer and the administrator. The farmers, once logged in are directed to the product upload page wherein they can upload the details of the product they want to sell. Similarly, the customers are directed to the product buying interface. The administrator can search for a particular customer or farmer or can make modifications to the system.

3. **Products Upload Page:** The farmers upload page has various details about the product for example, the product cost, product name etc. The farmer also has the option to search for a product or a particular customer by his ration card number which is unique.

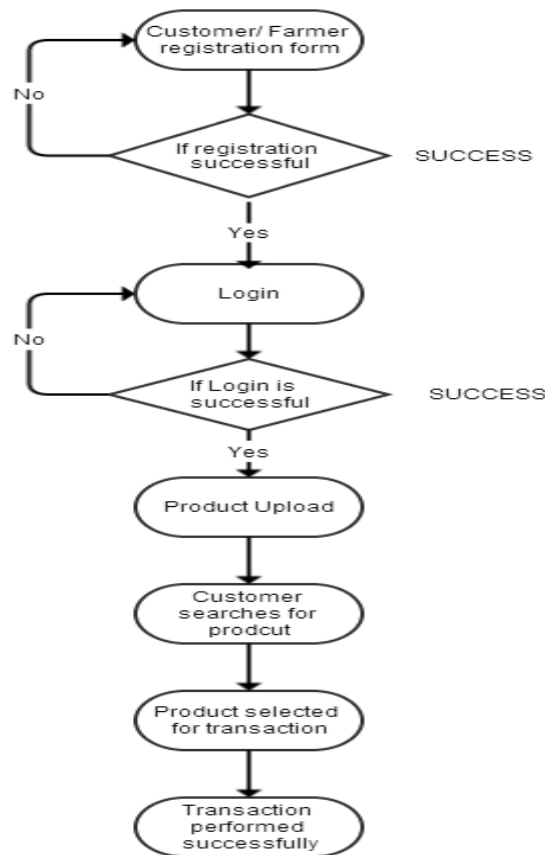


Figure 3: E-farming Process Flowchart

4 CONCLUSION:

This Project will thus pave the way for an efficient means to carry out the buying and selling of the products. Farmers will earn money as per the work they have done and will not suffer losses. Also the system will be supported by Cloud Computing thereby reducing the price aspect of the system tremendously. This system is proposed to replace the existing system where the farmer has to suffer between the manufacturers and the traders. Also the main advantage of this project is that it uses Information Technology. The User only needs basic products like a Computer and an internet connection.

The Future Scope of this Project is that it will incorporate Contract Farming. Contract farming is agricultural production carried out according to an agreement between a buyer and farmers, which establishes conditions for the production and marketing of a farm product or products. Typically, the farmer agrees to provide established quantities of a specific agricultural product, meeting the quality standards and delivery schedule set by the purchaser. In turn, the buyer commits to purchase the product, often at a pre-determined price. In some cases the buyer also commits to support production through, for example, supplying farm inputs, land preparation, providing technical advice and arranging transport of produce to the buyer's premises. Another term often used to refer to contract farming operations is 'out-grower schemes', whereby farmers are linked with a large farm or processing plant which supports production planning, input supply, extension advice and transport. Contract farming is used for a wide variety of agricultural products. This Project will thus pave the way for an efficient means to carry out the buying and selling of the products. Farmers will earn money as per the work they have done and will not suffer losses. Also the system will be supported by Cloud Computing thereby reducing the price aspect of the system tremendously. This system is proposed to replace the existing system where the farmer has to suffer between the manufacturers and the traders. Also the main advantage of this project is that it uses Information Technology. The User only needs basic products like a Computer and an internet connection.

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