



# Farm to Fork Traceability of Farm Produced

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## Abstract:

In recent many events related to food and public health occurs. Many country established strict rules to ensure the food traceability "Farm to Fork" to meet the demand of customers safety and to ensure public health. Traceability has been an important subject in the research world to be investigated. In software engineering, traceability has been crucial for software development processes. In food domain, traceability has also been seen as an important topic for tracing food content of various food products and operations. Companies in food production sector must evolve and change their organization and management chain to satisfy increasingly stringent governance rules to respond to the requirements of market. The aim of this work is to develop a farmer ID and then providing the necessary information of the farmer with their contact detail and productivity information. This web based application which is used for providing active, interactive, and persuasive communication among customers and farmers. Mobile application is developed to scan the QRcode which has been generated. The data collected by a traceability system will be stored in a database and any one can access that database to get information about their product from anywhere.

**Keywords:** Agriculture; Mobile application; Web application; QRcode.

## I. INTRODUCTION

Agriculture is one of supporting aspect for the majority of people life. The agricultural sectors become one of the main component government programs and strategies to solve poorness. Now the main drawback in agriculture is lack of knowledge about where our food is coming from. One of the factors which cause decreasing the agriculture productivity is the lack of information access for farmer to develop their products(They are not recognized). Increasing knowledge, information access and developing farmer capability can be increased by carrying out disseminations regarding the latest update of world agriculture development. So the remaining sections of the paper explains the proposed system, related works, hardware and software components used in the proposed system, block and circuit diagrams of the proposed system, experimental results, conclusion and future works.

## II. PROPOSED SYSTEM

We proposed a product traceability system where the consumers can view the details of the farmers who produced their food by scanning the QRcode or by entering the identification number; the details of the farmer can be viewed by the customer. This proposed system will be helpful for the consumers to identify under what condition the farm was produced and what are the fertilizers and chemicals used. Mobile application is developed to scan the QRcode to get the farmer detail.

## III. RELATED WORKS

According to [1] gamification can be implemented on a website-based application in order to enhance motivation, concentration, effort, loyalty and other common positive values to all user.[2]One of the factors which cause decreasing the agriculture productivity is the lack of information access for farmer to develop their products.[3]In this paper, the details

of a mobile application that will allow smart phone users to easily track packaged food product content using bar code information on food labels and bar code reading capabilities with smart phones. This application aims to provide a clear understanding of the food contents, energy and nutritional values, additives, food ingredients that can cause food allergy, and certifications that the product has. to the users by reading the bar codes of the food products using the smart phones, querying the data through a food database created on the Internet. In addition to the information on the package, explanations about additives, contents that may cause allergies can also be presented to the users within the application.[4] In the last decade, we are faced with a dozen food crisis, which have impact on human health. EU as response to food contamination applies a set of laws and standards for food traceability through all stages of production, processing and distribution, forcing that all food and feed operators implement special traceability systems.

## IV. HARDWARE AND SOFTWARE COMPONENTS

### SOFTWARES:

**1. HTML,HTML-5,CSS:** Used to create a front page and style sheet is used to design the pages in a effective and attractive manner.

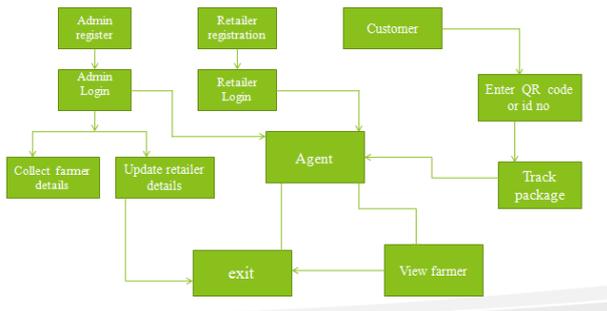
**2. JSP:** Technology that helps software developers to create dynamically generated webpage's based on HTML,XML or other document types. JSP allows Java code and certain predefined actions to be interleaved with static web markup content, such as HTML, with the resulting page being compiled and executed on the server to deliver a document. The compiled pages, as well as any dependent Java libraries, contain Java byte code rather than machine codes. JSPs are usually used to deliver HTML and XML documents, but through the use of Output Stream, they can deliver other types of data as well.

## VII. EXPERIMENTAL RESULT

**3. Tomcat:** Apache Tomcat is a open source web server that is developed by Apache software foundation .It basically make our Java Web application to run on host and server based system and it is configured on local host port 8080.Tomcat Implements several Java specifications including Java Servlet, Java Server Pages(JSP),Java EL, and web socket, and provide a pure Java HTTP web server environment in which java code can run .

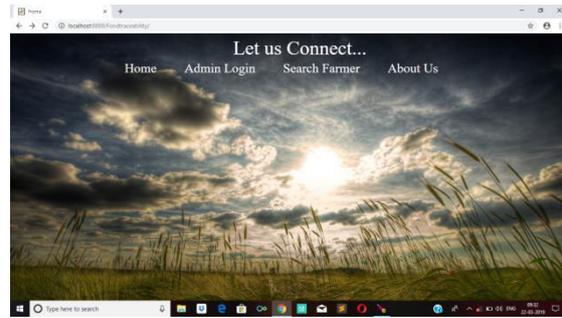
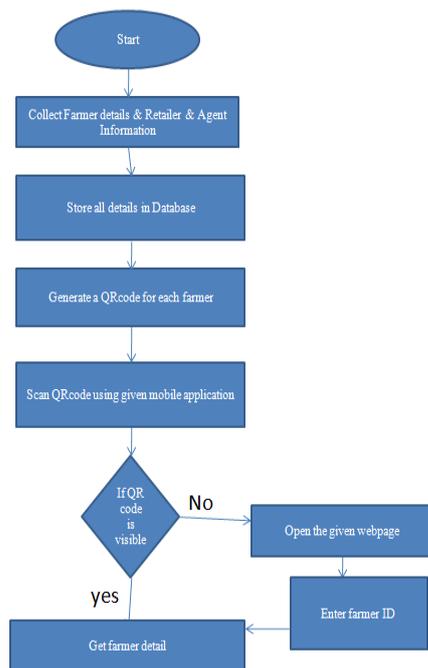
**4. Android Studio:** Android studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains IntelliJ IDEA software and designed specifically for android development.

## V. BLOCK DIAGRAM



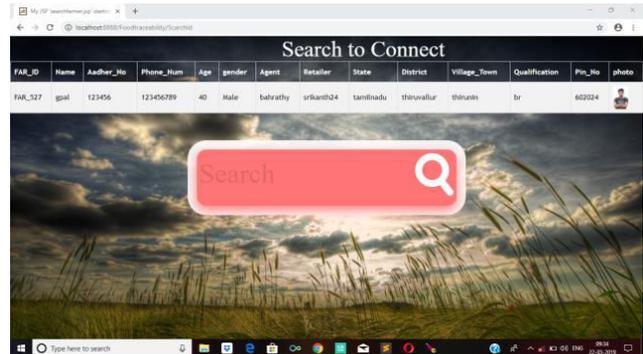
The architecture of the proposed system contains admin login where the admin can able to include every farmer data and only he can able to change the information whatever it may be a search module is created to display the details of the farmer if the QRcode is not clearly visible to the customers. They are allowed to enter the given/particular farmer id to get the information about the farmer. QRcode is generated automatically after the information about the farmer is inserted in the database. Agent and Retailer information's are inserted by admin. The output contains the information about the farmer and this information can be gained either by scanning the QRcode or entering the farmer ID.

## VI.WORKFLOW



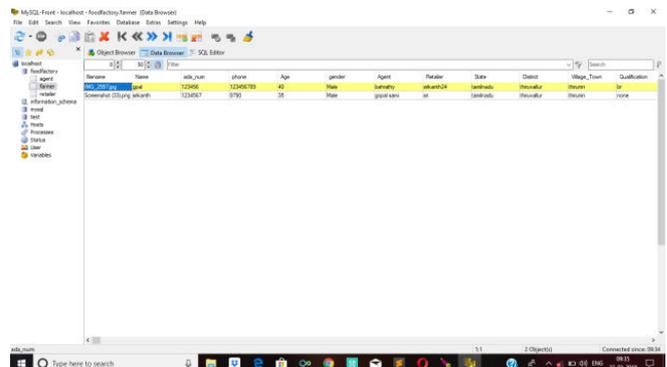
**Figure.1. Front page**

The Front page contains 1.Home, 2.Admin Login, 3.Search Farmer And 4.About Us



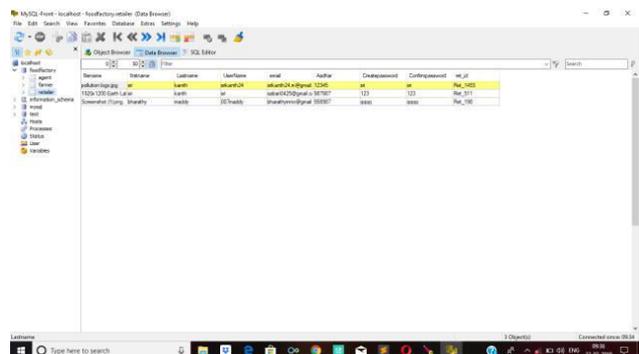
**Figure.2. Search Farmer**

Searching farmer is given to enter the farmer ID it is used when the QRcode is not properly visible to the customers (consumers) who are willing to know more about their food packets products, by entering the farmer ID .



**Figure.3. Farmer Database**

Information's of the farmer are stored here.



**Figure.4. Retailer Database**

Information's of retailers are stored here.

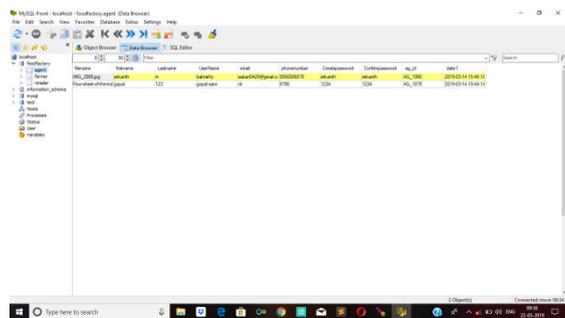


Figure.5. Agent Database

Information's of the Agents are stored here.



Figure .6. Generated QRcode

QRcode is generated after entering the farmer details by the admin. Along with QRcode farmer ID is generated, if the QRcode is not properly visible to the consumer's then consumers uses farmer ID to get the details of the farmer.

### VIII.COMPARATIVE STUDY

The existing system is used for providing active, interactive, and persuasive communication among farmers, farmer communities and professionals as space for sharing information each other to improve science and technology knowledge in agriculture. This application is developed by implementing gamification concept for increasing user interest within using this application. Gamification is used as one of strategy end-user engagement to attract enthusiastic farmers, farmer communities, and professionals in utilizing SociAg applications to interact with useful information sharing especially in agriculture. Through gamification concept, the active SociAg application user will earn reward be in the form of point in each the use of SociAg application activities. Our system QRcode is generated after entering the details of the farmer along with the farmer ID either consumer can use QRcode to get the details of the farmer We created a mobile application with the help of that consumers can scan the QRcodes which are been provided in the food packets and get the details of the farmers.

### IX.CONCLUSION AND FUTURE WORK

**Conclusion:** With the help of this web application the farmer can gain reorganization among consumers. The mobile application is used to scan the QRcode which has been generated after inserting the farmer details in database. If suppose the QRcode gets damaged or not clearly visible to the

consumer we provided a Farmer ID through which a consumer can search the details of the farmer. All those details are stored in the database which has been accessed by regional administrators only.

### X.REFERENCES

[1]. F. Llorens-Largo, F. J. Gallego-Durán, C. J. Villagrà-Arnedo, P. Compañ-Rosique, R. Satorre-Cuerda and R. Molina-Carmona, "Gamification of The Learning Process: Lessons Learned," vol. 11, no. 4, pp. 227-234, November 2016.

[2].Badan Penelitian dan Pengembangan Pertanian, "Lima Faktor Penyebab Rendahnya Produktifitas Pertanian," Kementrian Pertanian Indonesia, 27 1 2011. [Online]. Available:[http://biogen.litbang.pertanian.go.id/index.php/2011/01/lima\\_faktor\\_penyebab\\_rendahnya\\_produk\\_tifitas\\_pertanian/](http://biogen.litbang.pertanian.go.id/index.php/2011/01/lima_faktor_penyebab_rendahnya_produk_tifitas_pertanian/). [Accessed 22 7 2016].

[3].F. Llorens-Largo, F. J. Gallego-Durán, C. J. Villagrà-Arnedo, P. Compañ-Rosique, R. Satorre-Cuerda and R. Molina-Carmona, "Gamification of The Learning Process: Lessons Learned," vol. 11, no. 4, pp. 227-234, November 2016.g.

[4].A. Kardinawati, H. Haryanto and U. Rosyidah, "Penerapan Konsep Gamifikasi Appreciative pada E-Marketplace UKM," vol. 15 (4), 4 November 2016.

[5].N. Kapur, "Shep Hertz," 7 6 2016. [Online]. Available: [http://blogs.shephertz.com/2016/06/07/gamification-ultimate-strategyboost-app-user\\_engagement/](http://blogs.shephertz.com/2016/06/07/gamification-ultimate-strategyboost-app-user_engagement/). [Accessed 5 2 2017].

[6]. A. Toth and S. Tovolyi, "The Introduction of Gamification," in 7th IEEE International Conference on Cognitive Info communications (CogInfoCom 2016), Wroclaw, Poland, 2016.