Mobibush : A Cloud Enabled Mobile app for Farmers

Vivek M. Patil[1],Sonakshi R. Yadav[2],Sneha R. Sathe[3],Snehankita B. Sandbhor[4]

Under Graduate Students, Siddhant college of Engineering, pune-412109

[1]patilmvivek@gmail.com,[2]sonakshi.sy1414@gmail.com,[3]sathesneha183@gmail.com,[4]snehasandbhor@gmail.com

Abstract - Mobile technology is increasingly being adopted in the agricultural space as a measure to assist farmers in decision. The aim of the project is to enable farmers to have mobile access to up to date information on pesticides and further make decisions on which pesticides to refer, how to appertain them, when to use them, and so on. Due to its complexity, Mobibush is designed as a mobile distributed system that follows a three-layered deployment; mobile clients(users or farmers), middleware(proxy layer), and a database server. Since the data that is being drive to the mobile is resident on the database server, caching policy on the mobile has been proposed to support offline affordability of pesticide information. However, there are oppugn that arise due to the intermittent loss of connectivity which leads to stale data on the mobile. In this project, we have accomodate the dual caching technique where we reserve data on the mobile and on the middleware. The approach makes the Mobibush architecture now robust and reliable for offline data accessibility.

Keywords-Mobile Devices, Middleware, Web server, Pesticide, Caching, cloud computing.

_____*****_____

I. INTRODUCTION

There is a relentless ascent in the quantity of horticulture applications that are being conveyed. Because of the high differing qualities of the recorded, we have seen the outline of versatile applications that guide agriculturalists to finish undertakings, for example, figurings, choice guides, compound audits, GPS-based administrations, thus on. Cell phones serve as an auspicious data access point and all the more essentially, they are advantageous to be conveyed around. Likewise, the late advances in distributed computing, the period where ICT-based administrations are outsourced from suppliers over the Internet, is being grasped inside of the agrarian scene. As indicated by the works in and further , distributed computing has seen three major taxonomic layers known as the: Infrastructure as a Administration (IaaS) where equipment and systems are offered as virtualized administrations, Platform as a Service (PaaS) where application advancement is facilitated by the supplier, and Programming as a Service (SaaS) where programming is made usable to customers by administration. Having seen the prospects, the Mobibush project was proposed as an appropriated portable application with cloud-arranged back-end. The objective of the Mobibush undertaking is to help crop ranchers to settle on snappy choices on pesticide applications. For the most part, the agriculturists are empowered to know which pesticide to apply, when to apply the pesticide, how to blend chemicals, how to focus weeds, et cetera. In the beginning outline of the application, the reserving strategy is proposed as a measure to bolster disconnected from the net availability of information in the case of a system disengagement.

 The test however is that, the reserving technique can prompt circumstances of stale information on the portable, which implies, the agriculturists won't have the capacity to get to crisp (redesigned) data yet obsolete data. This circumstance emerges at the point when agriculturists are on the homestead where system signs are feeble or absolutely distracted. Moreover, the at first planned storing redesign strategy is not helpful for data transfer capacity administration.
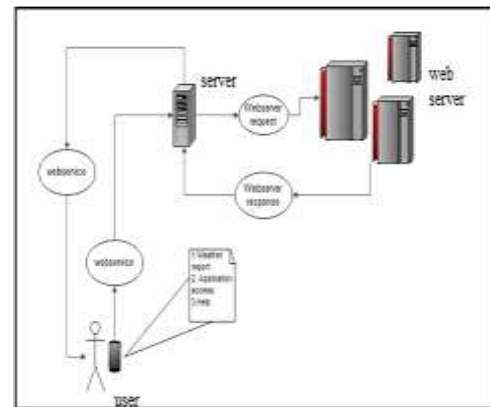
II. HOW DO IT WORKS?

Fig. System Architecture of MOBIBUSH

In the system user makes request for any app operation, if the requested data is available in the server it send back to the user. And if the requested information is not available at the server, it finds the requested information in web server with the help of proxy server. The proxy server contains three parts:

- HTTP garcon
- cache recollection
- Resource Cache recollection

HTTP garcon communicates with the mobile clients which are registered. Farmers are connected with the database server through proxy layer. Proxy layer act as middleware between farmers and database server.

Cache recollection stores all the data requested by user. The data in the cache recollection gets updates when user comes in contact with high speed internet connection.

 RCR implements the obligatory call on which resource cache gets result back. It is connected with database server through http garcon.

Database server reserves all obligatory data for farmers such as information about pesticides, fertilizers, crops and also it stores the data collected from sesors such as soil properties, water level in wells, weather forcasting.

III. MODULES

o MOBIBUSH (Android App)
o Soil Quality Anatomy
o Water Balance Spotting
o GSM kitbox

MOBIBUSH

If farmers want to use this app, first they have to register. Only registered farmers can get the information about crops with the help of mobibush app. With the help of this app user can get the information about soil properties, water level by sending a single messege STATUS. This messege goes to GSM toolkit and reply with the requested information.

SOIL QUALITY ANATOMY

In this we are testing the soil properties like moisture, humidity, temperature etc. For testing this properties we are using different types of sensors such as LM35, soil moisture sensor. The sensed data is send to the user after he makes request for soil properties.

WATER BALANCE SPOTTING

To measure level of water in the well farmer can use this facility. If level of water in the well is too low then sensor send this information to the farmer and avoid damage of motor which is used to get the water from well.

GSM KITBOX

This is the most important part of the mobibush architecture. GSM is nothing but GLOBAL SYSTEM FOR MOBILE COMMUNICATION. In which GSM sim card is inserted. When farmer wants information he will send a message to gsm toolkit and gsm toolkit replies with the help of this GSM sim. Information sensed by sensors is stored on this GSM toolkit.

Fig. GSM kitbox

IV. ALGORITHMIC PROCEDURE

1. User has to make registration and login.
2. Then user can make request for various app operations.
3. If the requested information is available at server it sends to user.
4. Otherwise it will be searched in web server with the help of proxy layer.
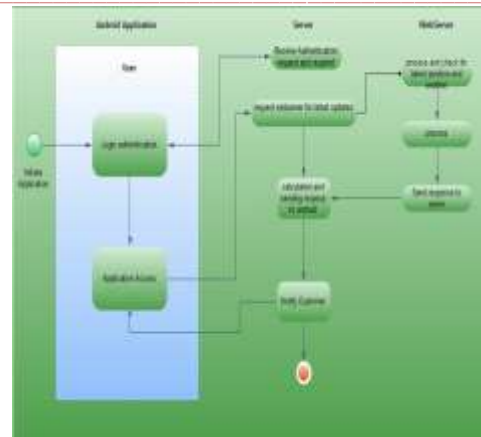5. The retrieved information send back to user.

Fig. Activity Diagram

V. CONCLUSION

Thus we conclude mobibush is a project that is aimed at supporting crop farmers to make decisions and caching technique is used to support offline acccessibility of pesticide information in the event of network loss we have studied quality attributes of the system.

VI. ACKNOWLEDGMENT

VII. REFERENCES

[1] M. Hori, E. Kawashima, and T. Yamazaki, "Application of Cloud Computing to Agriculture and Propects in Other Fields," FUJITSU Sci. Tech. J., Vol. 46, No. 4, pp. 446-454 (October 2010)
[2] Canvas Application tore, http://www.gocanvas.com/mobile-formsappstag=Pesticide
[3] R. Buyya, C. S. Yeo, S. Venugopal, J. Broberg, and I. Brandic, Cloud computing and emerging IT platforms: Vision, hype, and reality for delivering computing as the 5th utility, Future Generation Computer Systems, Volume 25, Issue 6, June 2009, Pages 599-616.
[4] H. Li, J. Sedayao, J. Hahn-Steichen, E. Jimison, C. Spence, and S. Chahal, Developing an Enterprise Cloud Computing Strategy, Intel White Paper, January 2009.
[5] H. E. Schaffer, "X as a Service, Cloud Computing, and the Need for Good Judgment," IT Professional, vol.11, no.5, pp.4-5, Sept.-Oct. 2009, doi: 10.1109/MITP.2009.112.
[6] Falaki, H., Lymberopoulos, D., Mahajan, R., Kandula, S., and Estrin, D., 2010. A first look at traffic on smartphones.