International Journal of Technical Innovation in Modern Engineering & Science (IJTIMES)
Impact Factor: 5.22 (SJIF-2017),e-ISSN:2455-2585
*International Conference on*
Recent Explorations in Science, Engineering And Technology (ICRESET'19)
Volume-5, Special Issue-March, 2019.

# Health Alert Application for Region

Praveenkumar P.S[1] , Porselvi.S[2] ,Vaishnavi.Y[3] & Dr.S.K.Mydhili[4]

[1,2,3]*UG Students, Department of CSE, KGiSL Institute of Technology, Coimbatore, India*
[4]*Professor, Department of CSE, KGiSL Institute of Technology, Coimbatore, India*

***Abstract–Malaria and dengue is one of the most serious infectious diseases causing public health problems in the world. Nowadays, most of the people are affected by dengue and malaria due to unhygienic surroundings. At present, healthcare organizations along with hospital take precautions in required time and utilize the resources to overcome diseases in case of disaster if any. This paper makes a significant contribution by identifying hidden ecological factors of dengue and malaria. The proposed application is developed in Ionic platform, which can be used in both android and IOS. This app provides a complete set of methods to control and prevent infectious disease like dengue and malaria in a region. It could be utilized by government or any healthcare centers or organizations to identify the infectious disease in a particular region. People affected can import and check their health condition through internet. Hence it can be used by the people anywhere at any time. This platform enables health workers to digitize the patient's data in particular region and initiates the officials to take necessary actions to prevent the disease.***

***Keywords: Malaria, Dengue, Ionic, Android, JavaScript***

## INTRODUCTION

Dengue and Malaria are mosquito-borne illness have been identified as a severe threat to human lives. An aedes mosquito is responsible for most complex human disease Dengue Fever. This mosquito inject Dengue virus into human blood and will leave a liquid in patient skins and this liquid cause the dengue fever. The biggest problem with dengue fever is, it can be identified only when patient is under critical stage. Unfortunately there is no distinct tool developed for identifying dengue within two days. Dengue has highest rate of mortality [13].

Malaria is another most severe infectious diseases next to dengue causing public health problems around the world due to mosquito infection. About two-third people around the globe is said to be infected. The effects of this disease are much more profound in Asian countries due to the lack of medical resources. When an emergency situation occurs, most of these countries cannot afford medical facilities and proper treatments due to the lack of medicine, equipment and hospital facilities. It is challenging situation for a developing country like India to prevention or reduce the risk factor of the diseases like dengue and malaria. Technology is an alternative solution by providing early detection mechanisms that helps to control the spreading of these diseases and allows the organization to ensure treatment facilities in advance, which can save thousands of lives. Rural health-care mobile based applications are almost non-existent in India. Hardly any research is done in the area of usability, modeling or standards specifically for rural health-care applications. In this paper, an attempt is made to design and develop a solution to early detection of diseases in a particular region. For designing the a mobile application called mobile based health monitoring at Primary Health Centre (PHC) called as mHEALTH-PHC platform was used as a base for customization[1] . mHEALTH-PHC is a mobile based question answering system. It comprises of following building blocks 1, Mobile based application facilitating data digitization, asking question and receiving answer, 2. Radio enabled pathological devices - Battery operated field deployable devices that transfer the pathological test results wirelessly to platform and 3. Doctor's console that enables doctors to look at the questions raised, look at the data and provide the correct answers. Earlier mHEALTH-PHC application was developed for J2ME (Java) based mobiles now it is being ported to Android too considering the widespread availability, technology benefits and low cost. [1]

In existing system, the process for maternal care is considered [2] and developed for Java based Android app. This proposed system deploys an intelligent dengue and malaria outbreak early warning system, with the use of mobile application and Ionic platform. The system will help hospitals, healthcare providers, and health organizations to take precautions in time and utilize their resources in case of emergency. Data is maintained confidentially and are more secure. Relevant information are collected and stored in the database. Ionic framework is used in the application. It allows people to use this app in both android and Ios. JavaScript is used for designing frontend and Mongo DB is used as backend for data storage. Node JS is a package used in express framework to create API

## LITERATURE SURVEY

This paper introduces a mobile application called WoSApp (Women's Safety App) that provides women with a reliable way to place an emergency call to the police. [3].the above diagnosis is time consuming and it can affect the survival rate of a patient. Mostly the people who live in remote locations who don't have access to all these medical facility will be the victims of this disease. In order to overcome this problem a health alert system is designed to detect [3]. This paper captures the experience of designing a health care application for rural India, the tools and methodologies used, issues faced and how these were resolved. The paper also discusses the strategies used for optimizing the fairly large set of information to suit small form factor of mobile screens without losing data fidelity, categorization and prioritization.[4]. The application is designed for Android smart phones and tablets and it is freely downloadable from the Google Play Store. It provides various useful tools to the hospital's users such as personnel and structures finding, way-finding and the possibility to access personal medical records collected on regional electronic health record.[5]. Health indicators and uneven distribution of healthcare resources amidst impressive rise in mobile communications coverage. This opens up the opportunity for health- the application of mobile technology for healthcare [6]. However, big health system can be applied to scientific health management by detecting and evaluating risk factors for the occurrence of disease which may help people conduct targeted intervention before the disease is formed and eventually achieve the maintenance of health

## PROPOSED SYSTEM

Automated process which follows from collecting the data from the users using the mobile application in android. After collecting the necessary data from the user the analyzing process is carried out using the ionic software and analyzing the data organizing or structuring the data. The comparison will be carried out simultaneous and the future prediction is analyzed. Implement the latest technology for making the system still more beneficial to cover the core areas. The user can register their details in the application, and the details are stored in database. Managing the database, it creates new database for new users. Apart from the previous mentioned techniques some other techniques involved in the paper it is a user-friendly and easily accessible. Reduce paperwork Fast and Secure. Patient's medical records in the digital format. Health alert application is smart phone application it can be installed this is app is mobile app everyone can use.

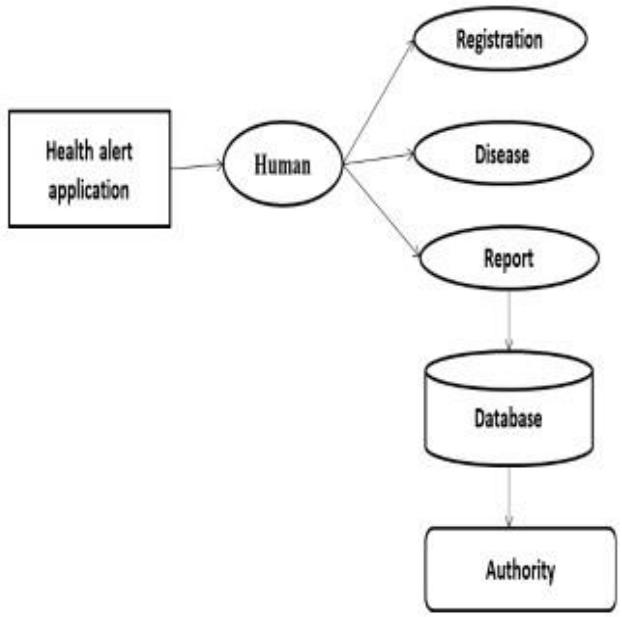


Fig.1. Proposed System Work Flow

**3.1Data flow diagram-**

**3.1.1 Level 0**

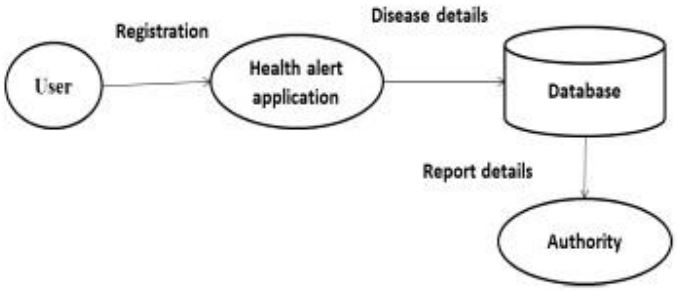


Fig.2. Data flow diagram level 0

This is the basic outline for the health alert process. All the details are saved in the database. Then the health alert application will be predicting the disease with the symptoms. Then the data's are directly send to the authority.

**3.1.2 Level 1**

The data's are read from the people inputs and it will be stored in database. It fetches the people details on registration page and gives as an output. The outputs are send to the authority.

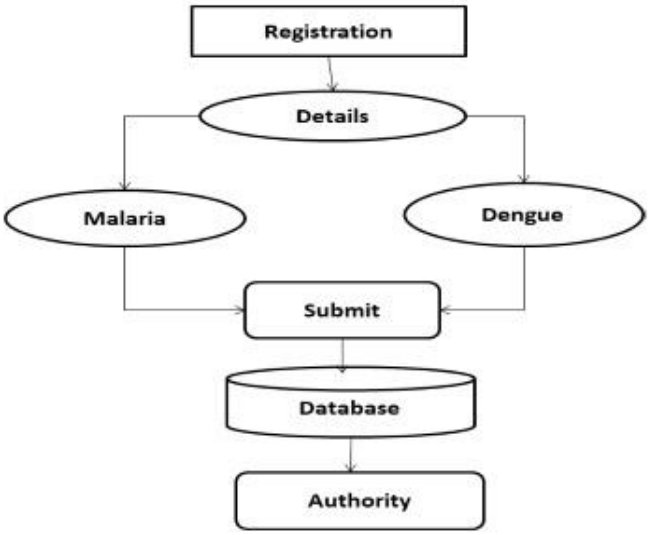


Fig.3 . Data flow diagram level

**SNAPSHOTS OF IONIC FRAMEWORK**

**4.1 Level 0**

This is the starting page for Ionic . It is to register people details. After registration, the process will be activated.

**4.2 Level 1**

This is the snapshot for the process. People will choose the symptoms of malaria and dengue.

### 4.3 Level 2

Clicking the **Disease** button and it will navigate to the symptoms of malaria and dengue page. In symptom page people should enter the all the details in given blank, if one blank is incomplete the submit button will not enable.

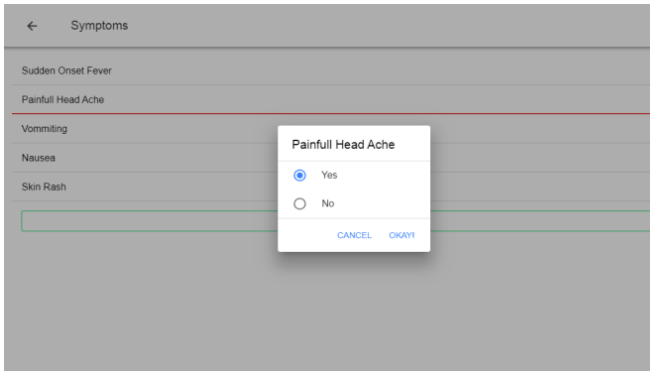


Fig. 4.Dengue symptoms page

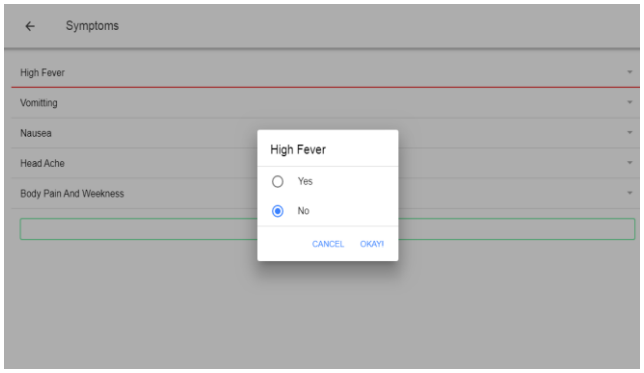


Fig. 5 .Malaria symptoms page

### 4.4 Level 3

The processed data is stored in the Mongo DB database. It is faster and secure. It will fetch their data's easily and sending to the authority.

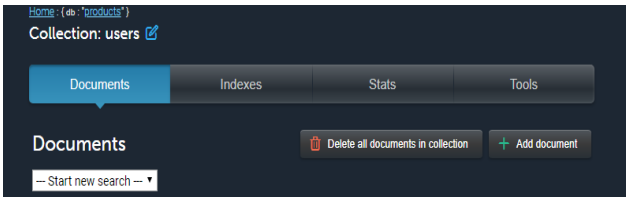


Fig. 6 .Database page

### BACKEND Node.js

The back end is designed using Node.js, whose major function is to store data strongly and recover it later, as requested by other software applications.**Node.js** platform built on Chrome's JavaScript runtime for easily build fast, scalable network applications.

## OUTPUT AND RESULTS

This section gives the output and results achieved for the automated process of data collection through android application in the Ionic platform. There will two phases where user will give details for both dengue and malaria. Hence the analysis process should exist between them to differentiate. The analyzed data will be visualized in many forms. The result is based on the symptoms. The analyzing process is based on symptoms the people fed as input. According to the data entered by the user, the process will identify the symptoms and report is generated. The result will be either in positive or negative. Prediction of future responses is must to avoid dangerous situations. However the prediction may not be accurate. Data prediction is best when carried out with data comparison.

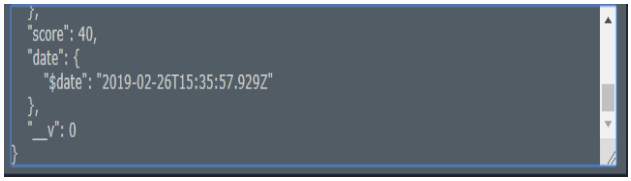


Fig. 7. Prediction in database page

## V. CONCLUSION AND FUTURE ENHANCEMENTS

The main aim of this paper is to provide the essential information to the authority to maintain hygienic environment. This helps everyone to live healthily without getting affected by the disease. The key idea applied in this paper is the automation. The automation applied save people from time, error, data missing, labour work and much more. The application developed could be managed by people and is simple to follow-up. The process starts with collection of data from the user, and transferred to authority for verification and taking necessary precautionary measures in the most affected region. In future, the collected data could be stored in data base using cloud or internet of things.

## REFERENCES

[1] Sujit R Shinde, Ratnendra Shinde , Sunita Shanbhag,Mridula, Sanjay Kimbahune "m-Health PHC – Application design for Rural health care" IEEE Explore ,2014.

[2] Dhruv Chand, Sunil Nayak, Karthik S. Bhat, Shivani Parikh, Yuvraj Singh, Amita Ajith Kamath,, "A Mobile Application for Women's Safety: WoSApp" IEEE,2015.

[3] D.Padmini Pragna, Sahithi Dandu, Meenakzshi M, C. Jyotsna, Amudha J, "Health alert system to detect oral cancer" ICICCT,2017.

[4] Sanjay Kimbahune Sujit R Shinde, Ratnendra Shinde , Sunita Shanbhag, "Application design for rural area. Pilot experience from one of the rural location in India" IEEE ,2014.

[5] A. Luschi, A. Belardinelli, L. Marzi, F. Frosini, R. Miniati, E. Iadanza, Member,"Careggi smart Hospital – a mobile app for patients, citizens and healthcare staff "IEEE,2014.

[6] Yoke S. Irawan, Soegijardjo Soegijokol, Allya P. Koesoema, Dody Q. Utama, Annisa Riyani Archie A. Isdiningrat Isa S. Isdiningrat, Farid Husin, "Towards Sustainable mHealth Applications for Maternal and Child health", IEEE,2016.

[7] Yujun Ma, Yulei Wang, Jun Yang, Yiming Miao, Wei Li , "Big Health Application System based on Health Internet of Things and Big Data",IEEE,2016.

[8] Saul Lozano- Fuentes Fadi Wedyan Edgar Hernandez–Garcia Devadatta Sadhu Sudipto Ghosh James M. Bieman Diana Tep-Chel Julián E. García–Rejón Lars Eisen, "Cell Phone-Based System (Chaak) for Surveillance of Immatures of Dengue Virus Mosquito Vectors" , *Journal of Medical Entomology*, Volume 50, Issue 4, 1 July 2013, Pages 879–889

[9] J.Suganthi., N.V.Umareddy,Nitin Awasthi, "Medical alert systems with TeleHealth & telemedicine monitoring using GSM and GPS technology",IEEE,2012.

[10] Liliana Enciso-Quispe; Santiago Sarmiento ; Elmer Zelaya-Policarpo"Personalized medical alert system based on Internet o things withDHIS2",IEEE,2018.

[11] Nicky Kattukkaran_ Arun George T. P. Mithun Haridas, "Intelligent accident detection and alert system for emergency medical assistance", IEEE,2017.

[12] Babagana Modu;Yang Lan;Savas Konur;Yonghong Peng;"Towards a Predictive Analytics-Based intelligent Malaria OutBraek Warning System",IEEE,2017.

[13] Xu, L.; Stige, L.C.; Chan, K.S.; Zhou, J.; Yang, J.; Sang, S.; Lu, L. Climate variation drives dengue dynamics. Proc. Natl. Acad. Sci. USA 2016, 114, 113–118.

[14] Jabagana Modu, Nereida Polovina , Yang Lan, Savas Konur , A. Taufiq Asyhari and Yonghong Peng, "Towards a predictive Analytics – based Intelligent Malaria Outbreak Warning System" Journal of Applied Science, 2017.