Dengue Distribution Analysis and Alerting System

K.G.P.T Wijedasa
M.Sc./IT/08/10009

The Dissertation is submitted to the Faculty of Information Technology, University of Moratuwa, Sri Lanka for the partial fulfillment of the requirement of the Degree of Master of Science in Information Technology.

February 2013

Declaration

I declare that this dissertation is my own work and has not been submitted in any form for another degree or diploma at any university or other institution of tertiary education to the best of my knowledge and belief. Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is given. I also hereby give consent for my dissertation, if accepted, to be made available for photocopying and for interlibrary loans, and for the title and summary to be made available to outside organizations.

K.G.P.T Wijedasa ..... Signature

Date : 05/04/2013

Supervised by

Dr. Prasad Wimalaratne ..... Signature

Date : 05/04/2013

Acknowledgement

First I express my heartfelt appreciation and gratitude to my supervisor Dr. Prasad Wimalaratne for his most valued guidance and commitment to make this project success.

Also sincere appreciation is extended to Dean of the faculty of Information Technology of University of Moratuwa, Professor Asoka S. Karunananda and the lecturer of the same faculty Mr. Saminda Premarathne for their guidance and kind support throughout the period.

My sincere thank also goes to my parents especially to my mother, for the encouragement and corporation extended to me to make my effort success.

Finally I thank all who helped me.

Abstract

Dengue Distribution Analysis and Alerting System was the title of the project chosen to develop for in my partial fulfillment of the requirement of the degree of M.Sc. in Information Technology of the University of Moratuwa.

Currently in Sri Lanka dengue is the most common mosquito-borne viral disease. As historical data proved, several thousands of cases are estimated to occur in each year. But in Sri Lanka there's no proper mechanism to identify the disease distribution trends or early warning. One of the key aims of the "Dengue Distribution Analysis & Alerting System" is developing a solution to analyze the tendencies, and make the people aware and alert the right people at the right time.

This system provides the capability of collection, management and analysis of the dengue distribution data in a consistent way. Input data process and outcomes display in intuitive formats (e.g. Maps, Graphs, and Charts) to support the implementation of locally appropriate vector/dengue control programmed strategy and evidence-based decision making mechanism.

It's identified that the awareness is one of the crucial factor for the success of the dengue prevention and controlling programs. The system analyze the distribution trends and automatically sends alerts to the relevant authorities (Public Health Inspector) to launch or speed-up the vector/dengue control/prevention programs in impacted areas. The system is capable to monitor and track the effective outcome of the controlling/prevention programs. If the trend continues in the negatively or not controlled manner systematic escalation will be triggered and alerts to the next level of the authorities (District Medical Officer).

For general public, system offers its public view via the World Wide Web as an informative web site. Public side of the system is real time gets update with the latest status, so that general public can access and get the latest information to identify the At-Risk areas, in term of dengue. In that way general public can be aware on the status of the areas, that they or their loved ones lives or schooling.

Table of Content

List of Tables

List of Figures

List of Charts