

## DOCINFO IT'S ALL ABOUT HEALTH

R Islam<sup>1</sup>, H Adnanul<sup>2</sup>, H M Ariful<sup>3</sup> and M S Rahman<sup>4</sup>

<sup>1</sup>CSM, Bauhaus-Universitat Weimar, Germany

<sup>2,3</sup>B.Sc. Engineer (CSE), AIUB, Bangladesh

<sup>4</sup>CS Department, AIUB, Bangladesh

<sup>1</sup>tamim.tamim@gmail.com, <sup>4</sup>saidur@aiub.edu

**Abstract-** Getting proper health services are inadequate only because there is a big information gap between patients and providers. Our plan was to cover up the gap. We developed an information management system where all the information of health service providers will be enlisted. Anyone can get any information regarding doctors, hospitals, diagnostic centers, disease, and blood banks in a single portal. Visitors can get the location of a health service; can get a vast idea about a doctor and his specialty, chamber visiting hours. We structured the system in such way that it can be merged with telecommunication value added services. From urban to rural people, everyone can use it through internet through a smartphone app, through text service. Our target was to cover up the gap, and furthermore developed an ideal system as a solution.

**Keywords:** Health, Patients, Doctor, Visitors, Smartphone.

### 1. INTRODUCTION

#### 1.1 Background

Technologies started evolving rapidly around Internet for the last few ten to twenty years. Many software solutions are available in web platform rather than desktop based. It became possible only because Internet is becoming more convenient, and the uniqueness of being mobile. The mobility and robustness of Internet has motivated us so much that we planned to put our efforts into action and do something very useful for the mass people with this technology. Thinking about the mass people, we planned to design a web application that can provide the information of health service all over the country.

The main purpose of this project is to develop an information management system for the health service providers. It will store all the information of doctors, hospitals, blood banks, diagnostic centers, health tips. The user of this web application will be the Local people, employers of the system, super admins and the health service providers.

This project will serve information with an online solution. User will have access to the site from anywhere in the world, all they need is a device connected with Internet.

Using this application employer will be able to add, delete, edit, and update information of health service providers with the admin panel interface. Doctors can post their current information.

#### 1.2 Software or Technology Product Proposed

Listed below technology will be used in this project proposed

- ASP Net 4
- MVC 4.0
- HRML
- CSS

#### 1.3 Business Process Impacted

This application will have a huge impact in health

service.

- We can use Google AdSense in this website.
- We can post different advertisements of private health service providers.
- We can feature doctors with their private practice information.
- Many revenue providing options will be opened.

#### 1.4 Purpose

The purpose of this document is to present a detailed description of the project "DOCINFO, It's all about health". It will explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate and how the system will react to external stimuli. This document is intended for both the stakeholders and the developers of the system and will be proposed to the AIUB-Department of Computer Science for its approval.

#### 1.5. Project Scope

- This web application will be developed to satisfy the user with proper and enough information.
- This application will maximize the doctor identification process at its best.
- This application will facilitate communication between employer, admin, doctors and owner of the different health service provider.
- This system will contain a relational database containing a list of doctors, hospitals, diagnostic centers, blood banks.

- Other facilities are notice ticker, notice board, health tips.

### 1.6 Product Perspective

This product is intended for the admins, data entry officers, doctors and the visitors. This site will be maintained by the SUPER ADMIN who wants to use this product. Super Admin can grant admin privileges to other registered users like data entry officer and doctors.

## 2. PROJECT FEATURES

#### Website:

- Information about doctors including certificates.
- Information about diagnostic centers and tests.
- Information about doctors' chamber and visiting time with fees.
- News box.
- Notice ticker.
- Information about hospitals.
- Information about blood bank and blood groups.
- Search engine.
- Notice board.
- Contact information.

#### Admin:

- Account Modification
- Add Edit, Delete, Update, Approve, Disapprove functionality with solo module.
- Certificate validation
- Approval of the data entry officer and doctor's validation.

#### Data Entry Officer:

- Add doctor, hospital, diagnostic center, blood bank information.
- Add news.
- Add news.
- Add photo.
- Add notice.

#### Doctors:

- Add degree information.
- Update profile picture
- Add chamber, fees, time schedule.

#### Visitors:

- Search and view doctors, diagnostic center, blood bank information.
- Add review about any doctor, diagnostic center, blood bank.
- View notice, news.

## 3. USER CLASSES AND CHARACTERISTICS

There will be four kinds of user. They are Admin, Data Entry Officer, Doctors and Visitors.

#### Admin:

- Account Modification
- Add Edit, Delete, Update, Approve, Disapprove functionality with solo module.
- Certificate validation
- Approval of the data entry officer and doctor's validation.

#### Data Entry Officer:

- Add doctor, hospital, diagnostic center, blood bank information.
- Add news.
- Add doctor, hospital, diagnostic center, blood bank information, certificates.
- Add notice.

#### Doctors:

- Add degree information.
- Update profile picture
- Add chamber, fees, time schedule.

#### Visitors:

- Search and view doctors, diagnostic center, blood bank information.
- View notice, news.

- Add review about any doctor, diagnostic center, blood bank.

## 4. OPERATING ENVIRONMENT

This product is developed using ASP .Net4, and MVC 4. This application runs well on almost all available web browsers including the ones in mobile phones. Namely

- Internet Explorer
- Opera
- Firefox
- Maxton
- Net scape
- Net Front
- Chrome
- Dolphin

## 5. DESIGN AND IMPLEMENTATION CONSTRAINTS

Product is developed using ASP.NET 4. The product is accomplished with login option so the specific function is available to the specific user. Also additional security is provided by ASP.NET 4 during development

### 5.1. Hardware Constraints

Development of the software was carried on an Intel Core 2 Duo 3.1 GHz processor with 2 GB Ram running on windows 7 ultimate (64 bit). .Net server was used and it ran smoothly. Analysis says that once it is deployed on a real server with recommended configuration, it will run much better than that of the test phase.

### 5.2 Recommended Configuration:

The system requires a database in order to store persistent data. The database should have backup capabilities.

- Intel Quad Core Xeon Processor
- 4 GB RAM
- 1 TB HDD
- Other necessary accessories/ devices.

### 5.3 Software Constraints

As mentioned earlier, development of the software was carried on an Intel Core 2 Duo 3.1 GHz processor with 2 GB Ram running on windows 7 ultimate (64 bit) which consumes 877 MB RAM out of 3GB at idle state. .NET server uses very efficiency at idle state. At a loader state of, let's say around 100 user loads, it was found consuming 35% of the 3GB RAM and 42% CPU Processing.

The development of the system will be constrained by the availability of required software such as web servers, database and development tools. Much better results are expected when it will be deployed on the real environment.

### 5.4 Design Constraints

The system must be designed to allow web usability. That is, the system must be designed in such a way that will be easy to use and visible on most of the browsers even in the mobile devices. The designing was done with long term service and ease of maintainability in mind.

### 5.5 Assumption and Dependencies

This product needs the following third party libraries and software:

- ASP.NET 4
- MVC 4
- OS

### 5.6 Stimulus / Response Sequences

Responses for User: Users (Super admin, admin, data entry officer, doctor) can log in and out or stay signed in to their account (if they are registered). The login and signup go through verification and validation in the server and if the request succeeds the user is redirected to their account. Also, while posting any information, database will require verification and validation of the information takes place. This

is to ensure the consistency of the data and information.

## 6. FUNCTIONAL REQUIREMENTS

### 6.1 User Interface

Different screenshots will show the user interface flow in the Fig.1

Every possible interface required for this project has been implemented. Future updates for more features and ease of access can be added.

Priority to user roles and access control restricts general visitors from utilizing features that are only accessible by authorized personnel.



Fig.1 Different screenshots will show the user interface

### 6.2 Hardware Interface

#### Server Side:

- Quad Core Intel Xeon Processor 2.66 GHz or higher
- 4 GB RAM
- 500 GB HDD
- LCD Monitor
- Smart Cooling System
- Power Backup System (Recommended)

#### Client Side:

- Intel Pentium 4 or higher
- 512 MB RAM (minimum)
- Windows XP or higher, Mac OS 10.6+ or Any Linux Distribution with Silverlight 5.0 Runtime.
- Any Web browser (e.g. Internet Explorer, Google Chrome, Mozilla Firefox etc.)
- Monitor

#### Software Interface

- Visual Studio 2012
- MVC 4.0
- Photoshop
- Illustrator
- Web browsers (example. Internet Explorer, Google Chrome)

#### References

- SRS
- SOW

## 7. DEPLOYMENT DIAGRAM

Development and activity diagram of the software is shown in Fig.2

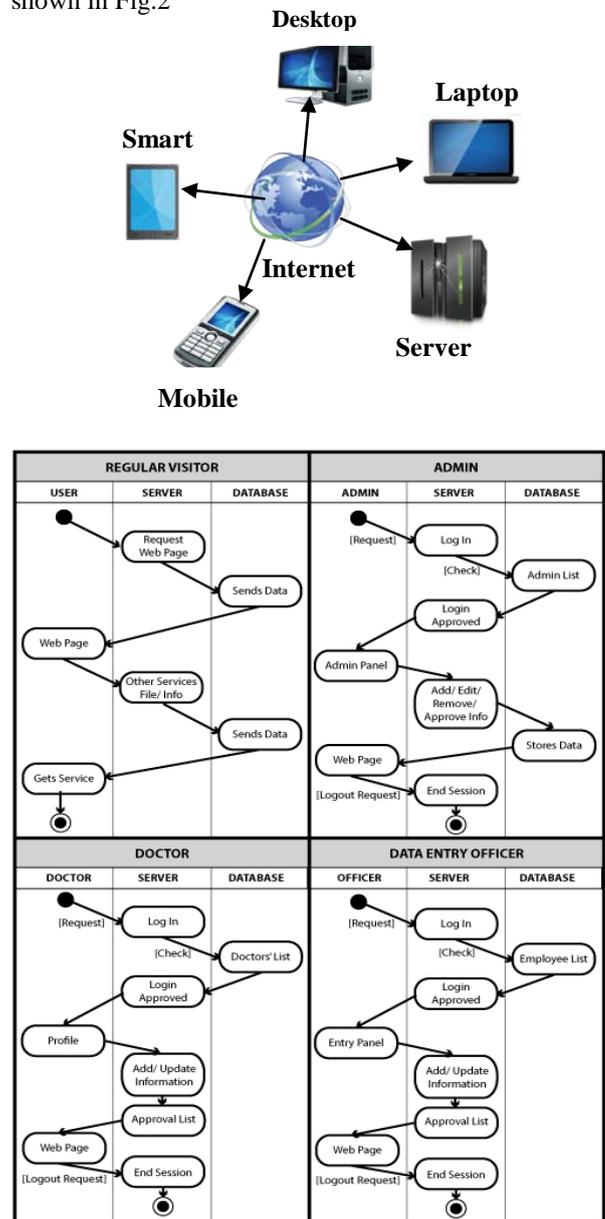


Fig.2 Development and Activity Diagram

## **9. CONCLUSION**

“DOCINFO, it’s all about health” is a complete health service management information system. It can be as ideal as a central health service database system. Visitors and the managers both will be satisfied with proper and vast information.

It has a great business opportunity too. Featuring and promoting doctors and health service provider organization will make a big cash flow which will help to support the maintenance costs.

This software architecture can be extended to a new level like SMS based query, disease detection with smartphones, and emergency services in the long run.

## **10. REFERENCE**

- [1] [www.w3schools.com](http://www.w3schools.com)
- [2] [www.wikipedia.com](http://www.wikipedia.com)
- [3] [www.asp.net](http://www.asp.net)
- [4] IEEE Standards Collections, 2001 Edition,
- [5] UML Weekend Crash Course, Thomas A Pender.
- [6] AGROUML (<http://argouml.tigris.org>)