ABSTRACT

Effective communication in healthcare is important and especially critical in emergency situations. In this paper we propose a new comprehensive emergency system which facilitates the communication process in emergency cases from ambulance dispatch to the patient's arrival and handover in the hospital. The proposed system has been designed to facilitate and computerize all the processes involved in an accident from finding the nearest ambulance through to accessing a patient's online health record which can assist in pre-hospital treatments. The proposed system also locates the nearest hospital specializing in the patient's condition and will communicate patient identification to the emergency department. The components of the proposed system and the technologies used in building this system are outlined in this paper as well as the challenges expected and proposed solutions to these challenges. It will also mention if they have a policy and provide them with the required phone number, e-mail etc. for contact. By which one will be able to easily select the method of clients. We use HTML, CSS, JavaScript as a front-end and PHP, MySQL database as back-end to implement the project [2]

DECLARATION

We declare that this project and the work presented in it are our own and has been generated

by us and hereby declare that the project entitled "Emergency Ambulance System" submitted

in partial fulfillment of the requirements for the degree of Bachelor of Science in

Computer Science and Engineering in the Faculty of Computer Science and Engineering

(CSE) of Bangladesh University of Business and Technology (BUBT), is our own work

and that it contains no material which has been accepted for the award to the candidate(s)

of any other degree or diploma, except where due reference is made in the text of the project.

To the best of our knowledge, it contains no materials previously published or written by

any other person except where due reference is made in the project.

Shumsuzzoha Sunam

ID: 14153103094

Md Saiful Islam

ID:14153103103

Ashraf Chowdhury

ID: 14152103128

CERTIFICATE TO WHOM IT MAY CONCERN

This is to certify that Shumsuzzoha Sunam, Md. Saiful Islam and Ashraf Chowdhury students of B. Sc.in CSE have completed our Project work titled "Emergency Ambulance System" satisfactorily in partial fulfillment for the requirement of B. Sc in CSE in Bangladesh University of Business and Technology (BUBT) in the year 2019.

Shumsuzzoha Sunam

ID: 14153103094

Md Saiful Islam ID:14153103103

Ashraf Chowdhury

ID: 14152103128

Project Supervisor

(Md. Shahiduzzaman)

Assistant Professor

Department of Computer Science and Engineering (CSE)

Bangladesh University of Business and Technology (BUBT)

Mirpur-2, Dhaka-1216, Bangladesh.

ACKNOWLEDGEMENTS

First and foremost, we are grateful to the Allah, the Almighty, the Merciful without whose patronage and blessing this project would not have been successfully completed. He gave us zeal, confidence, power of determination and courage and vanquished all the stumbling hardness that we faced on the way. It is an auspicious occasion for us as students of Department of Computer Science and Engineering, one of the prestigious academic centers of the Bangladesh University of Business and Technology (BUBT), to express our deep feelings of gratitude to the department and especially to our supervisor, Head of the department, all the teachers and also to the departmental staff. We are immensely indebted to our supervisor, Md. Shahiduzzaman, Assistant Professor, Department of Computer Science and Technology, for his wonderful guidance, inspiration, encouragement and also for through review and correction of this dissertation work that could not be finalized without his astute supervision.

We pay profound regard to all of our teachers of the department for their very valuable directives and special attention. Our parents are very much keen and hopeful in the best performance of the dissertation we are going to submit. We wish we could fulfill their aspiration. We also pay regards to our friends in the department who, through their interest and work, are our contestant source of inspiration.

DEDICATION

Dedicated to our parents for all their love and inspiration.

APPROVAL

This Project "Emergency Ambulance System" Submitted by Shumsuzzoha Sunam ID NO: 14153103094, Md. Saiful Islam ID NO: 14153103103 and Ashraf Chowdhury ID NO: 14153103128 Department of Computer Science and Engineering (CSE), Bangladesh University of Business and Technology (BUBT) under the supervision of Md. Shahiduzzaman, Assistant Professor, Department of Computer Science and Engineering has been accepted as satisfactory for the partial fulfillment of the requirement for the degree of Bachelor of Science (B.Sc. Eng.) in Computer Science and Engineering and approved as to its style and contents.

Supervisor

Md. Shahiduzzaman

Assistant Professor

Department of Computer Science and Engineering (CSE)

Bangladesh University of Business & Technology (BUBT)

Mirpur-2, Dhaka-1216, Bangladesh.

Chairman

Dr. M. Ameer Ali

Professor

Department of Computer Science and Engineering (CSE)

Bangladesh University of Business and Technology (BUBT)

Mirpur-2, Dhaka-1216, Bangladesh.

Abbreviation & Nomenclature

<u>Abbreviation</u> <u>Description</u>

IT Information Technology

RAM Random Access Memory

HTML Hyper Text Markup Language

CSS Cascading Style Sheet

PHP Hyper Text Preprocessor

SQL Structured Query Language

MySQL My Structured Query Language

RDBMS Relational Database Management System

XAMPP Cross-Platform (x), Apache (A), MariaDB (M), PHP (P) and

Perl (P).

XML Extensible Markup Language

DOM Document Object Model

MMU Memory Management Unit

CGPA Cumulative Grade Point Average

ADODB Active **D**ata **O**bjects **D**ata **B**ase

W3C The World Wide Web Consortium

ERD Entity Relationship Diagram

DFD Data Flow Diagram

GUI Graphical User Interface

URL Universal Resource Locator

PC Personal Computer

MB Mega Byte

GB Giga Byte

OS Operating System

SL NO Serial Number

PDF Portable Document Format

TABLE OF CONTENTS

| | Page No |
|--|--------------|
| ABSTRACT | I |
| DECLRATION | II |
| CERTIFICATE | III |
| ACKNOWLEDGEMENT | IV |
| DEDICATION | \mathbf{V} |
| APPROVAL | VI |
| ABBREVIATION & NOMENCLATURES | VII |
| Chapter 01: Introduction | 1-6 |
| 1.1 Introduction | 1 |
| 1.2 Existing Systems | 2 |
| 1.2.1 Uber | 2 |
| 1.2.2 Pathao | 2 |
| 1.2.3 Foodpanda | 3 |
| 1.3 Motivation. | 3 |
| 1.4 Objectives. | 4 |
| 1.5 Contribution | 4 |
| 1.6 Organization of the Project Report | 5 |
| 1.7 Conclusions | 6 |

| Chapter 02: Existing Systems | 7-29 |
|---|-------|
| 2.1 Introduction | 7 |
| 2.2 Existing Systems | 7 |
| 2.2.1 Uber | 7 |
| 2.2.1.1 Features | 8 |
| 2.2.1.2 Advantages/2.2.1.3 Dis-Advantages | 9 |
| 2.2.2 Pathao | 9 |
| 2.2.2.1 Features | 9 |
| 2.2.2.2.Advantages/2.2.2.3 Dis-Advantages | 10-11 |
| 2.2.3 Foodpanda | 11 |
| 2.2.3.1 Features | 12 |
| 2.2.3.2.Advantages/2.2.3.3 Dis-Advantages | 13 |
| 2.3 Supporting Theory | 13 |
| 2.3.1 HTML | 14 |
| 2.3.2 CSS | 15 |
| 2.3.2.1 CSS Syntax | 16 |
| 2.3.2.2.CSS Example | 16 |
| 2.3.3 PHP | 17 |
| 2.3.4 MySQL | 18 |
| 2.3.5XAMPP | 19 |
| 2.3.6 Entity-Relationship Diagram (ERD). | 20-26 |
| 2.3.7 Data Flow Diagram (DFD) | 26-29 |
| 2.4 Conclusions | 29 |

| Chapter 03: Proposed Model | |
|---|-------|
| 3.1 Introduction. | 30 |
| 3.2 Overview of Proposed System | 30 |
| 3.2.1 Features | 31 |
| 3.3 Feasibility Study | 32 |
| 3.3.1 Objective of Feasibility Study | 32 |
| 3.4 Requirements Analysis | 35 |
| 3.5 System Architecture | 37 |
| 3.6 System Design. | 38 |
| 3.6.1 Methodology | 39 |
| 3.6.2 Entity Relationship Diagram (E-R diagram) | 41 |
| 3.6.3 Data Flow Diagram. | 42 |
| 3.6.4 Use Case Diagram. | 43 |
| 3.7 Database Design. | 45 |
| 3.8 Implementation | 48 |
| 3.9 Conclusions | 48 |
| Chapter 04: Implementation & Evaluation | 49-55 |
| 4.1 Introduction. | 49 |
| 4.2 Result Analysis | 52 |
| 4.2.1 Unit Testing. | 52 |
| 4.2.2 White Box Testing. | 53 |
| 4.2.3 Test Scenario. | 54 |
| 4.4 Application Outcome | 55 |
| 4.5 Conclusions | 55 |

| Chapter 05: User Manual | 56-63 |
|-------------------------|-------|
| 5.1 Introductions | 56 |
| 5.2 User Interfaces. | 56-62 |
| 5.3 Conclusion | 63 |
| Chapter 06: Conclusions | 64-65 |
| 6.1 Summary | 64 |
| 6.2 Future Works | 65 |
| REFERENCES | 74-76 |
| LIST OF TABLES | XIII |
| I IST OF FICTIDES | VIV |

LIST OF TABLES

| Table 3.1: | Data object in database table for sale | 53 |
|-------------------|---|----|
| Table 3.2: | Data object in database table for login information | 53 |
| Table 3.3: | Data object in database table for add_amb information | 53 |
| Table 3.4: | Data object in database table for Ambulance information | 54 |
| Table 4.3: | Example of test scenario | 62 |

LIST OF FIGURES

| Figure 2.1: | Uber Home Page Screenshot | 8 |
|--------------|--|----|
| Figure 2.2: | Pathao Home Page Screenshot. | 10 |
| Figure 2.3: | Foodpanda Home Page | 12 |
| Figure 2.4: | PHP Work Flow | 18 |
| Figure 2.5: | XAMPP Control Panel | 20 |
| Figure 2.6: | Relational Symbols | 25 |
| Figure 2.7: | ER Diagram | 26 |
| Figure 3.1: | Emergency ambulance System | 31 |
| Figure 3.2: | Function of feasibility study | 32 |
| Figure 3.3: | Basic system architecture | 37 |
| Figure 3.4: | System function structure | 38 |
| Figure 3.5: | Phases of water-fall model | 39 |
| Figure 3.6: | E-R Diagram for Emergency Ambulance System | 41 |
| Figure 3.7: | DFD context diagram | 42 |
| Figure 3.8: | DFD Level 0 | 43 |
| Figure 3.9: | Use Case diagram | 44 |
| Figure 3.10: | Basic of database design | 45 |
| Figure 3.11: | Database schema | 47 |
| Figure 4.1: | Unit Testing | 52 |

| Figure 4.2: | White box testing | 54 |
|-------------|---------------------------------|----|
| Figure 5.1: | Login page | 57 |
| Figure 5.2: | Adding New Ambulance | 58 |
| Figure 5.3: | Client Home Page | 59 |
| Figure 5.4: | Searching Ambulance by location | 60 |
| Figure 5.5: | Ambulance Details | 60 |
| Figure 5.6: | Booking an ambulance | 61 |
| Figure 5.7: | Admin panel | 62 |