ONLINE AMBULANCE & BLOOD DONOR MANAGEMENT SYSTEM

BY

Monir Hossain
ID: 143-15-4331

This Report is submitted to the Department of Computer Science for Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering.

Supervised By

Mahbuba Maliha Mourin
Lecturer
Department of Computer Science and Engineering
Daffodil International University

DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

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APPROVAL

Our project title "**Online Ambulance and Blood Donor Management System"** submitted by **Monir Hossain, ID No: 143-15-4331** to the Department of Computer Science and Engineering in Daffodil International University under the supervisor **Mahbuba Maliha Mourin.** Our project accepted as a satisfactory for the partial fulfills requirements for Daffodil International University. The presentation is held in 11th December 2018.

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DECLARATION

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We hereby declare that, this project has been done by me under the supervision of **Mahbuba Maliha Mourin, Department of CSE,** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

Supervised by:

_____

Mahbuba Maliha Mourin
Lecturer
Department of CSE
Daffodil International University

Submitted by:

_____

Monir Hossain
ID: 143-15-4331
Department of CSE
Daffodil International University

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Finally last but not least we want to thank our beloved parents for their valueless love and support.

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ABSTRACT

This project is made for the people who are seeking for ambulance and blood donors. Users who want to know about the nearby ambulance service and donor lists then they have to do registration in this web application. There is a sign up option for creating a new profile. There are two major options for register. If someone gets registered as requestor then he/she can get all information about ambulance and donor list but if someone get registration as donor then he/she get all information as well as he/she has a donor profile. By logging in the system he/she can update his/her previous data at any time. Admin has another panel to add, edit or delete any data.MS SQL relational database is used in the whole project. For database connectivity with MS SQL database and we used C# in the backend. Bootstrap, Razor is used for making our application enough interactive. The system is tasted and reviewed for satisfactory performance. In future we will add more layouts for our user that they can make more lightweight online ambulance and donor from our application.

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TABLE OF CONTENTS

CONTENTS

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LIST OF FIGURES

FIGURES **PAGE NO**

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CHAPTER 1

Introduction

1.1 Introduction

We are living in the modern world. Our life depends on technology. Every day we have to be familiar with new things. We can't make ourselves confident to reach the goal without having vast of knowledge of some special area. We are the students of "Faculty of Science Information technology" especially in the CSE program "Daffodil International University" so that only the academic education is not enough for us to do something better.

As a part of CSE program, this project gives us opportunity to have satisfactory knowledge about the challenges online Ambulance and Blood donor web application. The website is help the user find out ambulance and blood donor.

Our study gave the opportunities to make us enable to realize the challenges of web based application looking for Online Ambulance & Blood donor and make it easy for the user. Online Ambulance & Blood donor system will fulfill the requirement of the needy users.

1.2 Motivation

In our country peoples are suffering from the unavailability ambulance service & blood donor service. In rural area peoples can't connect with ambulance service system. Most of the peoples can't connect with the top rated hospital and their service. In our country for the lacking of ambulance service & blood donor service so many people are die every year. So, I think it will be a useful and necessary website for us.

1.3 Objectives

The purpose of the website is to give better idea for rescue system with user friendly interface in case of emergency and rescue situation. At the present, this website which can facilitate the people in case of emergency.

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1.4 Expected Outcome

Our software will fulfil all the requirements of Ambulance & Blood donor management system. It will store all the information in the database of Ambulance & Blood donor Service. Here, I want to keep the Ambulance & Blood donor service information of Dhaka district only. It will help urban area people for every rescue situation. People also can get most popular ambulance information, website and their contact details. It will be more users friendly and fulfil their needs.

1.5 Report Layout

Looks is the most important part for anything we present. So report layout is very important to represent our project report. We try to represent our project in a report paper according to chapter by chapter. Every information about project is describes here. There are 1 to 6 chapters where represents from initial to final development process. Chapter 1, we will discuss only our project introduction, chapter 2 depicts on background, chapter 3 represents requirement model, chapter 4 is design part, Chapter 5 represent implementation and testing, chapter 6 we will discuss conclusion and our future scope. We add some references where we take help to complete our project.

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CHAPTER 2

Background

2.1 Introduction

People have to learn small things before doing a big achievement. Success always depends on hard work. We have done a satisfactory project that will be helpful. We completed our CSE course, all previous knowledge needs to fulfill our project. Online ambulance & blood donor is a web based application so we need to study web engineering, database, system analysis and design. We are very grateful to our course teacher. They make us understood about basic knowledge of this course .we have done simple class project during that time. All the knowledge, information, practice make us confident to complete this project.

2.2 Comparative studies:

At first we get knowledge from our course and course teacher. In database management system we learnt how to connect with database how worked etc. In system analysis, we were familiar with use case model, diagram, primary key, and secondary key, ER diagram and final web based course was web engineering. We learnt derails about web application, how to make a responsive website. We worked with HTML.CSS, JAVASCRIPT, BOOTSTRAP, MSSQL, C#. We also did our project .beside our course books; we took help from various website [1] .

2.3 Related work

Before doing our project, we have done few projects.

- Hospital management system.
- Online house rental system.
- Online cng.
- Meal management system.

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2.4 Scope of Problems

The main problem we had to face is manipulating user with their data. Which data of which user this was a major problem of our application because we had to view the user data by a specific donor profile. At last we have overcome the problem.

2.5 Challenges

There was a great challenge to viewing the donor & ambulance with area searching from a large number of data. But we took the challenge and solve the problem. For solving this we made a unique user id of every donor then when we get request to show a donor's profile then we pull by the donor unique id. We have shortlisted some challenges. They are given below

- Must have to use valid register and login.
- UX and UI.
- Security
- Performance

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CHAPTER 3

Requirement Specification

3.1 Business Process Modeling

Business process modeling refers to map out regular business process and find ways to improve them. Process modeling software gives an analytical representation and makes them more efficient. Sometimes process modeling uses Business Process Modeling Notation that is a standard method of illustrating processes with diagram. It can be easily understood by both IT and business managers.

There are some benefits of business process modeling.

- Everyone can understand how the system works.
- Provides consistency.
- Controls the whole process.
- Identifies redundancies.
- Eliminates inefficiencies.
- Gives a clear starting and ending of the process.
- Helps users group similar process together and anticipate how they operate.
- Analyzes how things are right now and
- How they should be carried out to achieve better result.

The modeler is one of the most important things in BMPS. We should spend a lot of time to learn it before committing to buy a suite. Great modeling tools should be:

- Easy to learn for the business department.
- Simple for IT to communicate with other department.
- Less expensive.
- Have workflow editor tools with graphics interface.
- Capability of simulating workflow before implementing.

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Business process modeling of our application is given bellow:

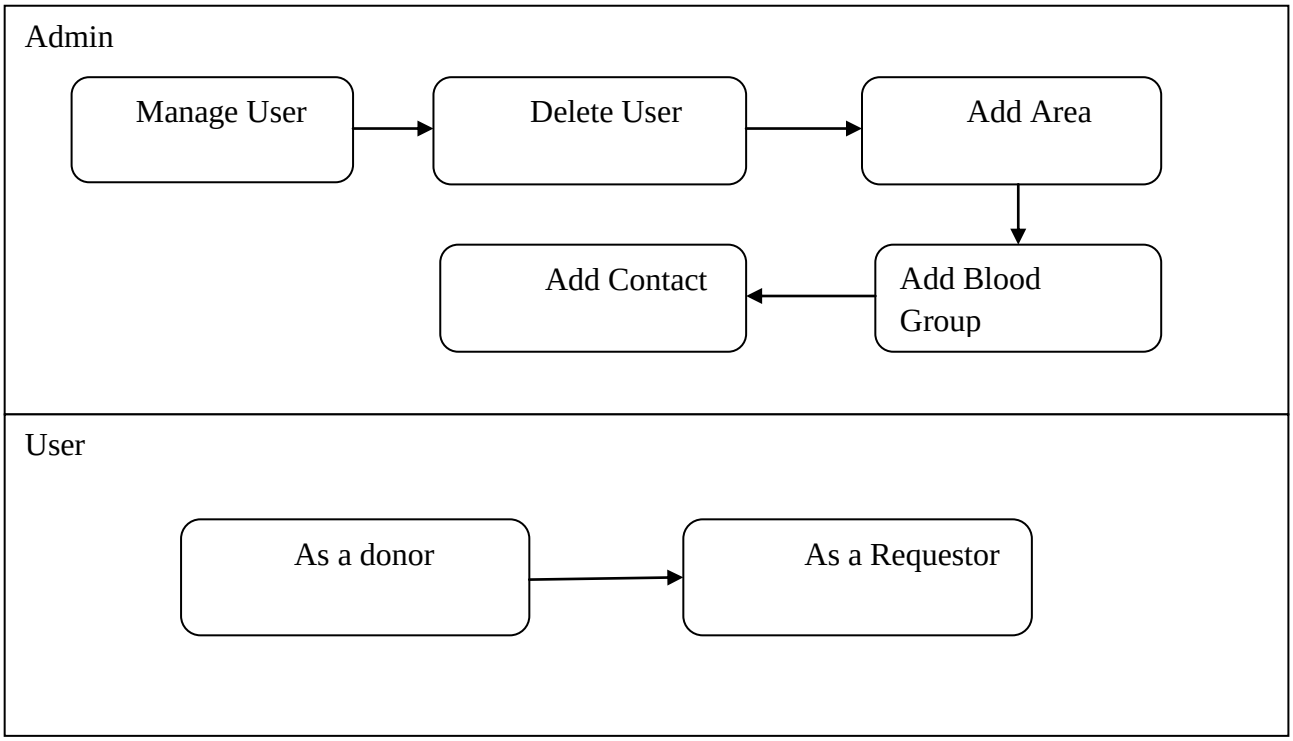

Figure 3.1: The business process model of our application.

3.2 Requirement Collection and Analysis

There are various requirements in data collection for implementation in system and data analysis. Some of them are given below:

- Need valid e-mail to register
- Require valid password to log in.
- Require valid email to send information.
- Need valid phone no to contact with other users.

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3.3 Use Case Modeling and Description

Use case model describes the functionalities of the proposed system. It represents a unit interaction between human and system. It is a single unit of meaningful work such as register to the system, log in and create order is all use cases. The most important role of use case model is to provide a vehicle used by customers or developers which discuss the functionalities and system behavior. Use case is related to actor. An actor means human or machine entity that interacts with the system and does meaningful work.

In use case we have three user which is admin, donor and requestor. Admin can see user data and can also edit and delete them. Then donor can enlist his/her information. The requestor can only see their data.

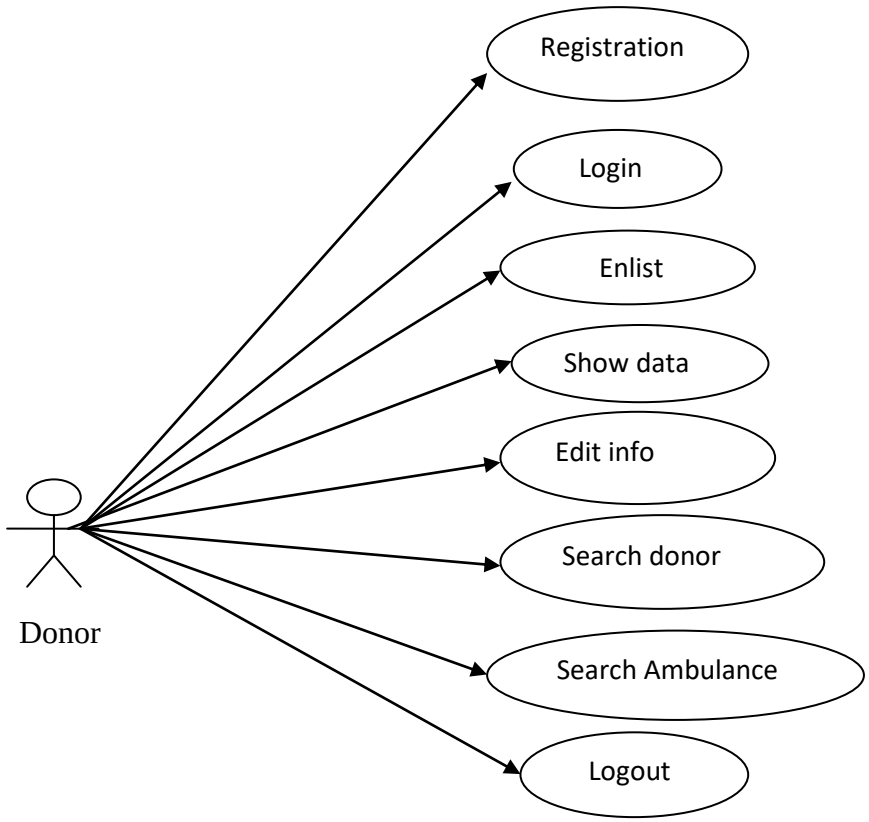

Figure (a): Use case diagram of Donor

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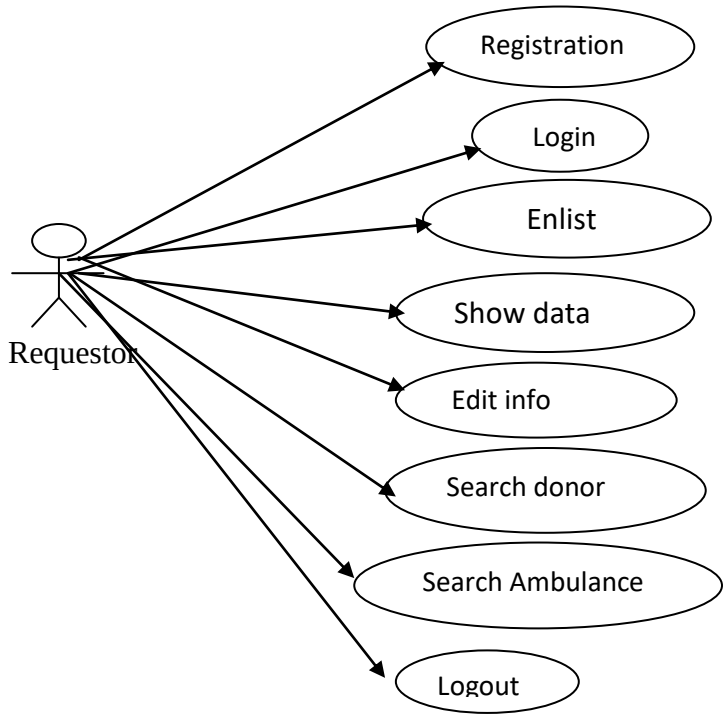

Figure (b): Use case diagram of Requestor

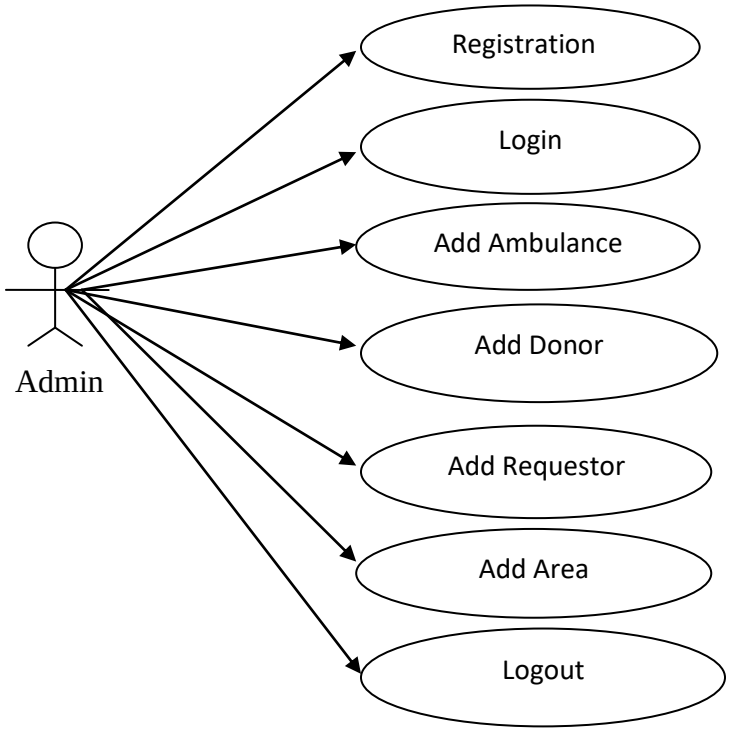

Figure (c): Use case diagram of Admin

Figure 3.2: (a), (b) and (c) The full use case model of our application.

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3.4 Logical Data Model

A logical data model refers to describe the data in details, without regard to how they will be physical implemented in the database. It is the technique of representing data architecture and organization in a graphical way. It provides information about various entities and relationship. There are some features of logical data model.

- Having all entities and relationships among them.
- Includes all attributes for each entity that is specified.
- Primary key is specified for each entity.
- Foreign keys are also specified.
- This levels normalization occurs.

Logical data modeling does not provide any information related to how the structure is to be implemented. It is a technology-dependent model of data which is developed from the initial structure.

The steps for designing the logical data model are:

- It individualizes primary keys for all entities.
- Figure out the relationship between different entities.
- Search all attributes for each entity.
- Solve many to many relationships.
- Normalization.

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Here we create our proposed logical data model to represent the system.

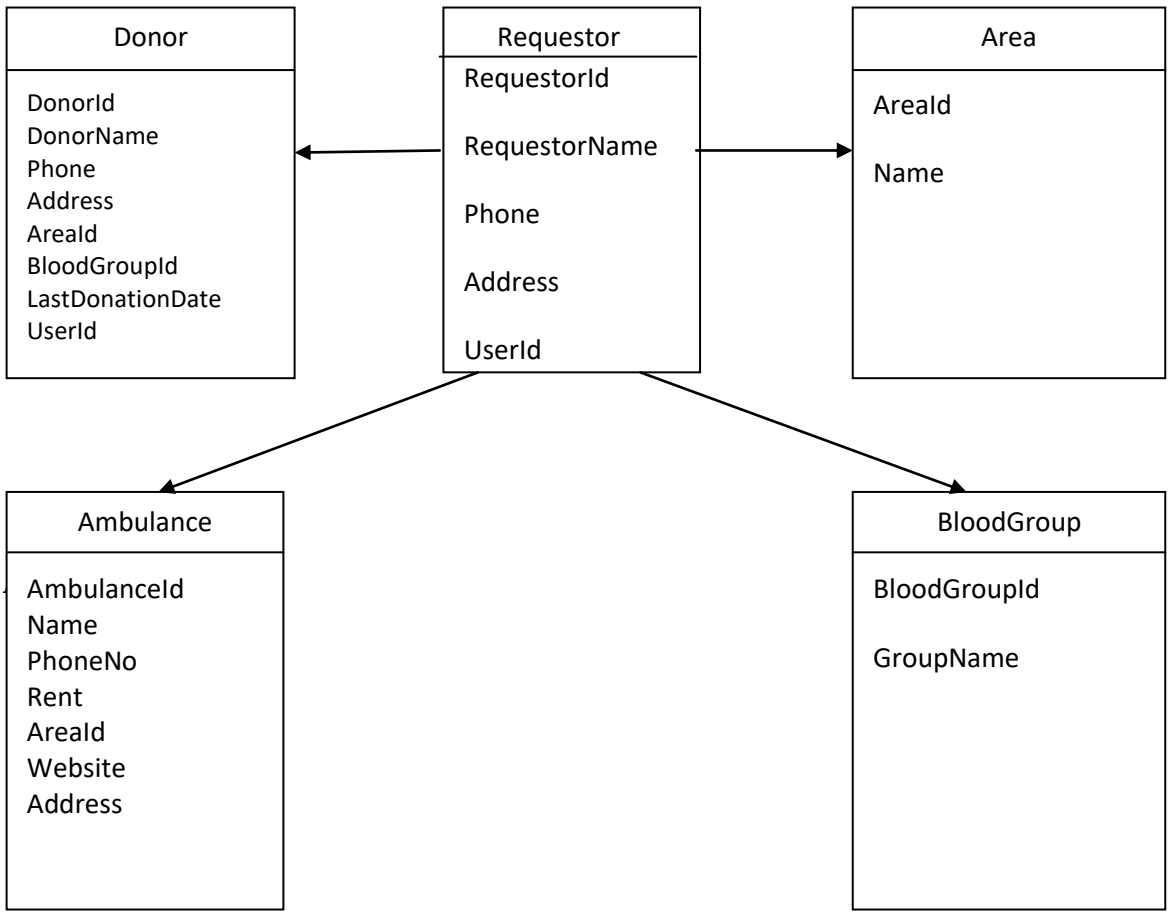

Figure 3.3: Complete Data Model of Our System.

3.5 Design Requirement

To design our site, we use lots of material. Some of them are given below:

- HTML: It is the standard markup language to create web pages. HTML describes the structure of the web pages. Elements are represented by tag.

- CSS: It means cascading style sheet.CSS describes how HTML elements are displayed on the screen. There are some advantages of using CSS.

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- Save the time.
- Load the page faster.
- Easy to maintain.
- Multiple device compatibility.
- Off line browsing.
- Platform independence.

- Bootstrap: bootstrap is a huge collection of code that is written by HTML, CSS and Java scripts. It helps the developers or designers to quickly build a responsive web site.
- C#: It means .Net MVC Framework. In web programming, C# is .net that is freely available. We use c# to build our project.
- Pixie: We can match color by using pixie software. It tells us the values of that color in the range of different format.
- Photoshop: by using Photoshop we make our pagephoto.

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CHAPTER 4

Design Specification

4.1 Front-end-Design.

We have found the best way is to build out the front end in whatever tools the front end engineers are using. In our case, that's Angular Material. So we built out a style guide using Angular Material that shows the various elements that comprise most of our applications: lists, buttons, form elements, tables, etc [4]. I used off-the-shelf Angular Material elements as much as possible with minimal overrides to accommodate branding or specific uses. The front end-team is encouraged to copy my Bootstrap & Razor. If we mark something up as a table, for example, there's a good usability reason for that, and it shouldn't just be built with a bunch of div to approximate the look of a table.

Figure 4.1: The front-end view of our application

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4.2 Back-end-Design

For designing back-end of our application we use a template and which is most popular free admin template [3]. We use the menu of that template to navigate the total back-end design of our system. In this back-end system user can manage their data by adding and deleting specific information.

Figure 4.2: The back-end view of our application.

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E-R Diagram

E-R diagram means Entity relationship diagram. The entity relationship data model is based on a perception that consists of a set of basic objects called entities, and of relations among these objects. It was developed to facilitate database design by allowing the specification of an enterprise schema, which represents the overall logical structure of a database. This is shown in following figure 5.4.

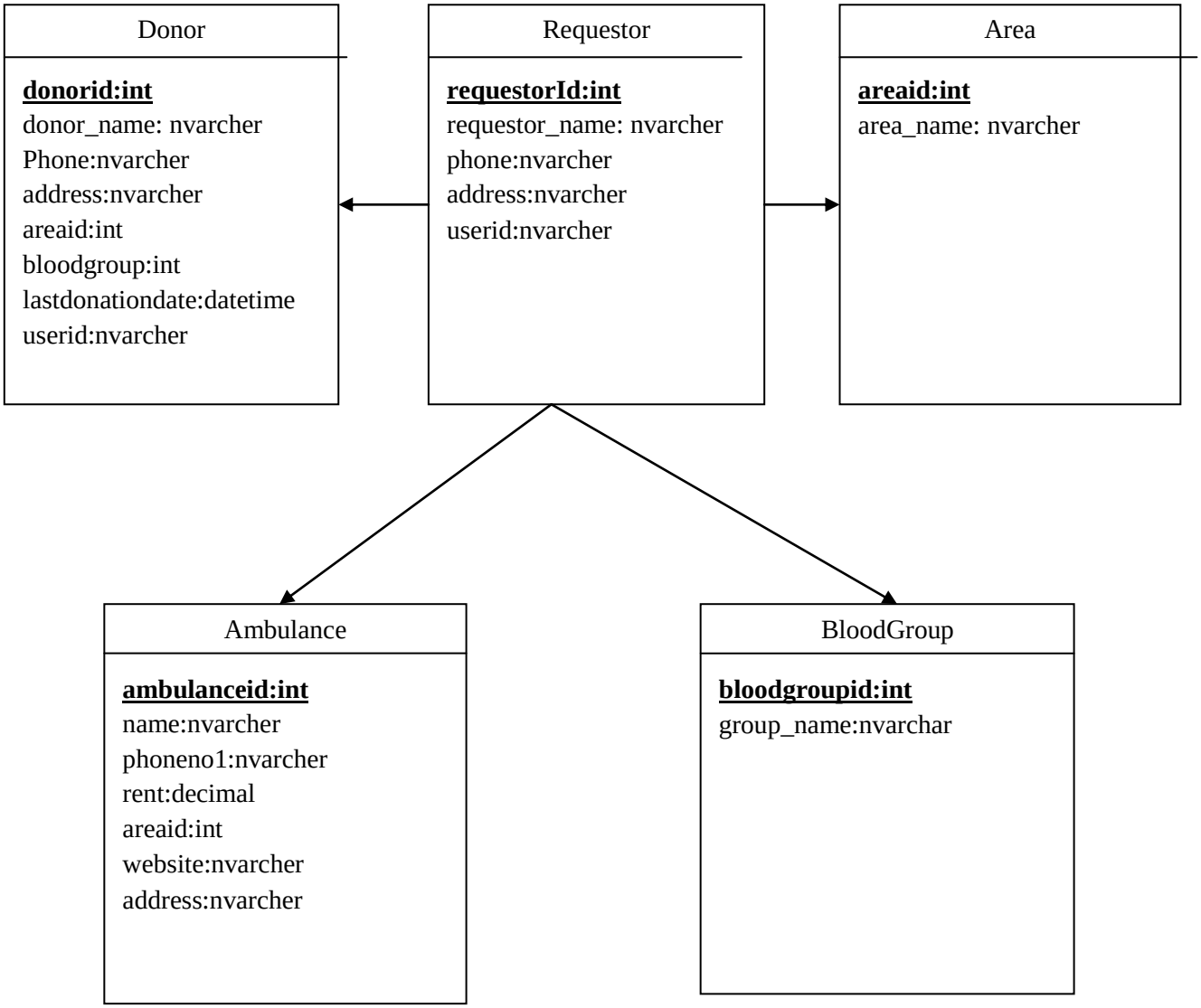

Figure 4.3: E-R Diagram

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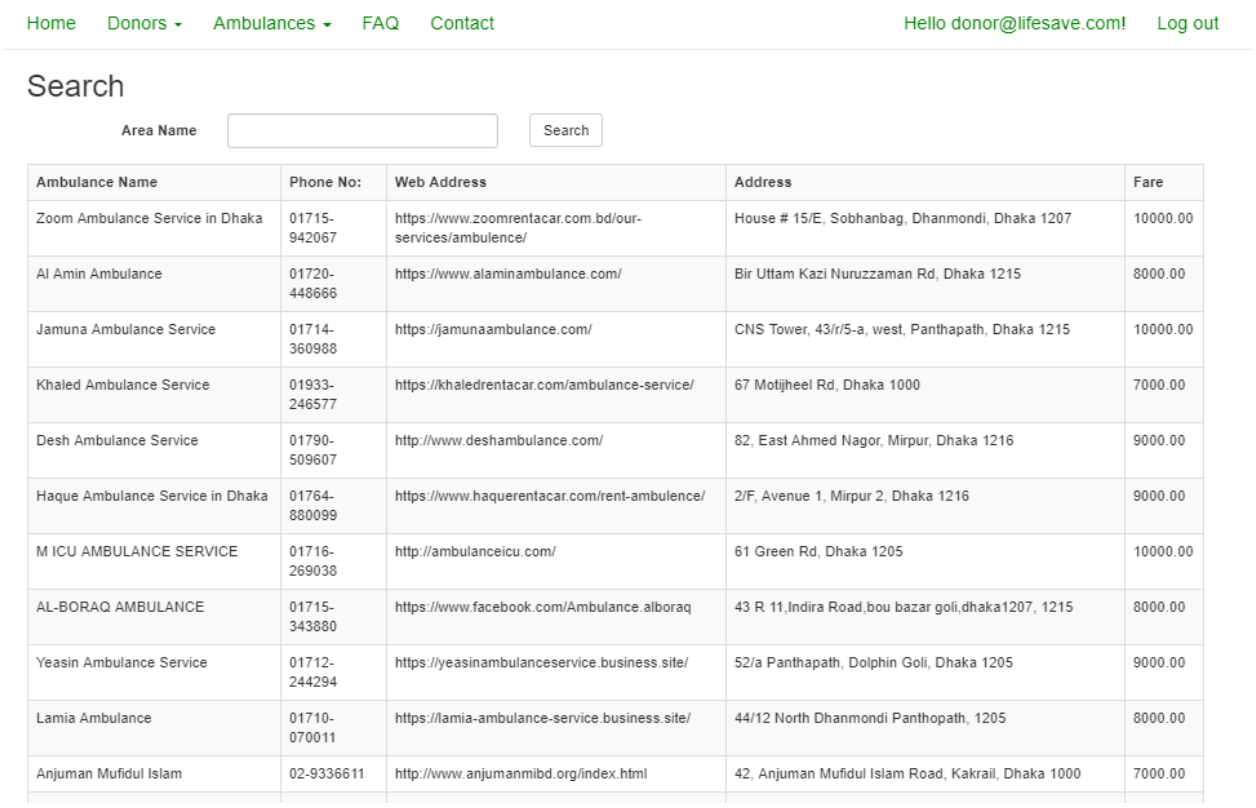
4.3 Interaction Design and UI

Interaction design focuses on creating engaging interfaces with well thought out behaviors. Understanding how users and technology communicate with each other is fundamental to this field.

UI means user interface. It is the most important part in the application. Because first of all users see the total view. View should be attractive, flexible and effective so that users may like our application. Here we see some UI views in our proposed system.

Ambulances

It is the view of ambulance section. Here donor or requestor can search the ambulance by area. The donor and requestor give phone number & website in this section.



Ambulance Name	Phone No:	Web Address	Address	Fare
Zoom Ambulance Service in Dhaka	01715-942067	https://www.zoomrentacar.com.bd/our-services/ambulence/	House # 15/E, Sobhanbag, Dhanmondi, Dhaka 1207	10000.00
Al Amin Ambulance	01720-448666	https://www.alaminambulance.com/	Bir Uttam Kazi Nuruzzaman Rd, Dhaka 1215	8000.00
Jamuna Ambulance Service	01714-360988	https://jamunaambulance.com/	CNS Tower, 43/r/5-a, west, Panthapath, Dhaka 1215	10000.00
Khaled Ambulance Service	01933-246577	https://khaledrentacar.com/ambulance-service/	67 Motijheel Rd, Dhaka 1000	7000.00
Desh Ambulance Service	01790-509607	http://www.deshambulance.com/	82, East Ahmed Nagor, Mirpur, Dhaka 1216	9000.00
Haque Ambulance Service in Dhaka	01764-880099	https://www.haquerentacar.com/rent-ambulence/	2/F, Avenue 1, Mirpur 2, Dhaka 1216	9000.00
M ICU AMBULANCE SERVICE	01716-269038	http://ambulanceicu.com/	61 Green Rd, Dhaka 1205	10000.00
AL-BORAQ AMBULANCE	01715-343880	https://www.facebook.com/Ambulance.alboraq	43 R 11,Indira Road,bou bazar goli,dhaka1207, 1215	8000.00
Yeasin Ambulance Service	01712-244294	https://yeasinambulanceservice.business.site/	52/a Panthapath, Dolphin Goli, Dhaka 1205	9000.00
Lamia Ambulance	01710-070011	https://lamia-ambulance-service.business.site/	44/12 North Dhanmondi Panthopath, 1205	8000.00
Anjuman Mufidul Islam	02-9336611	http://www.anjumanmibd.org/index.html	42, Anjuman Mufidul Islam Road, Kakrail, Dhaka 1000	7000.00

Figure 4.4: Back-End UI of ambulance section.

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Ambulance Search

If the requestor/donor search the specific location, he/she can get easily found the ambulance service his location.

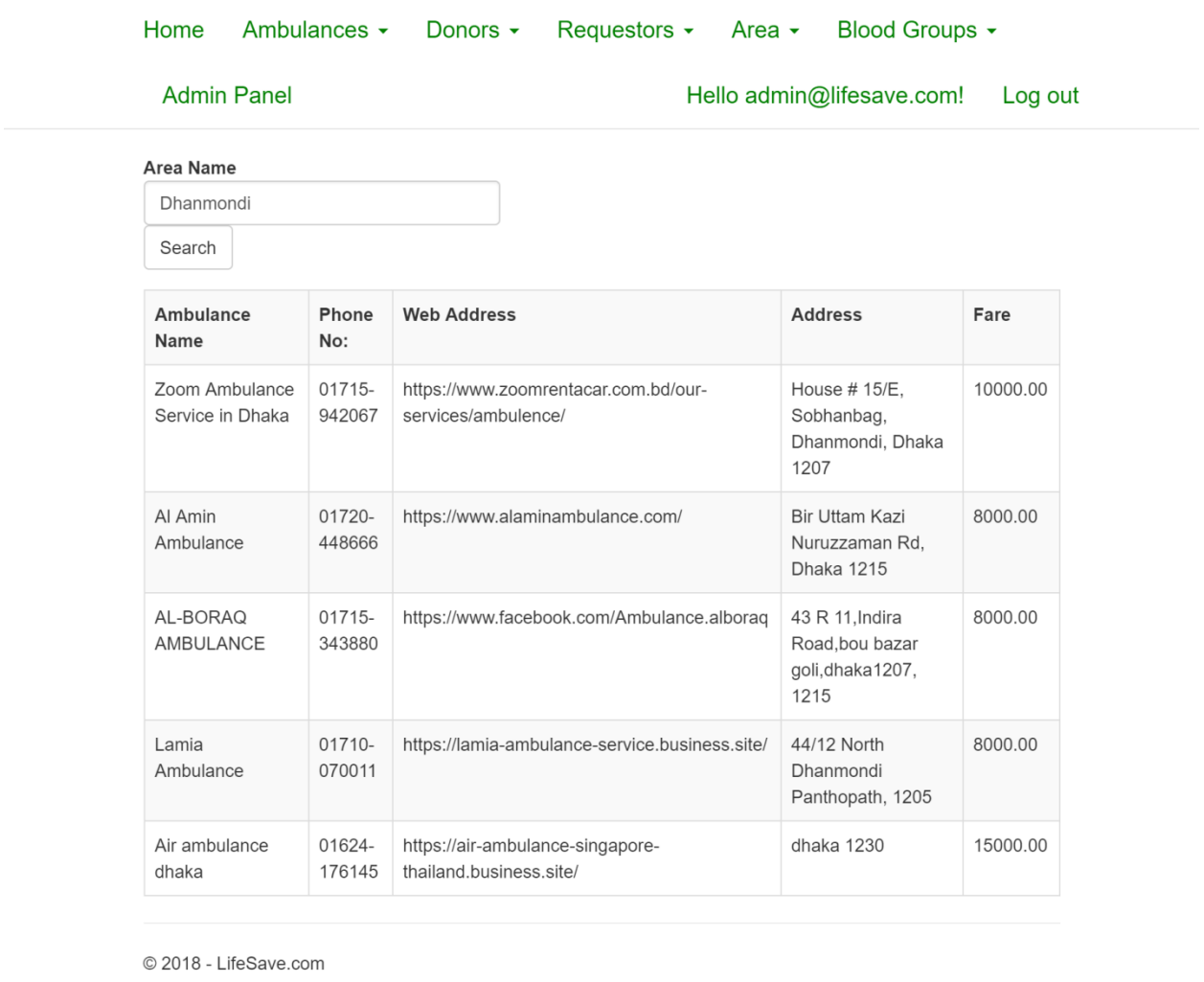

Figure 4.5: Back-End UI of ambulance search section.

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Donors

Hear donor can enlist his/her information and they can also search ambulances & donors. They can get easily both of ambulance & donors phone number and make call to help them. The donors also update his/her information.

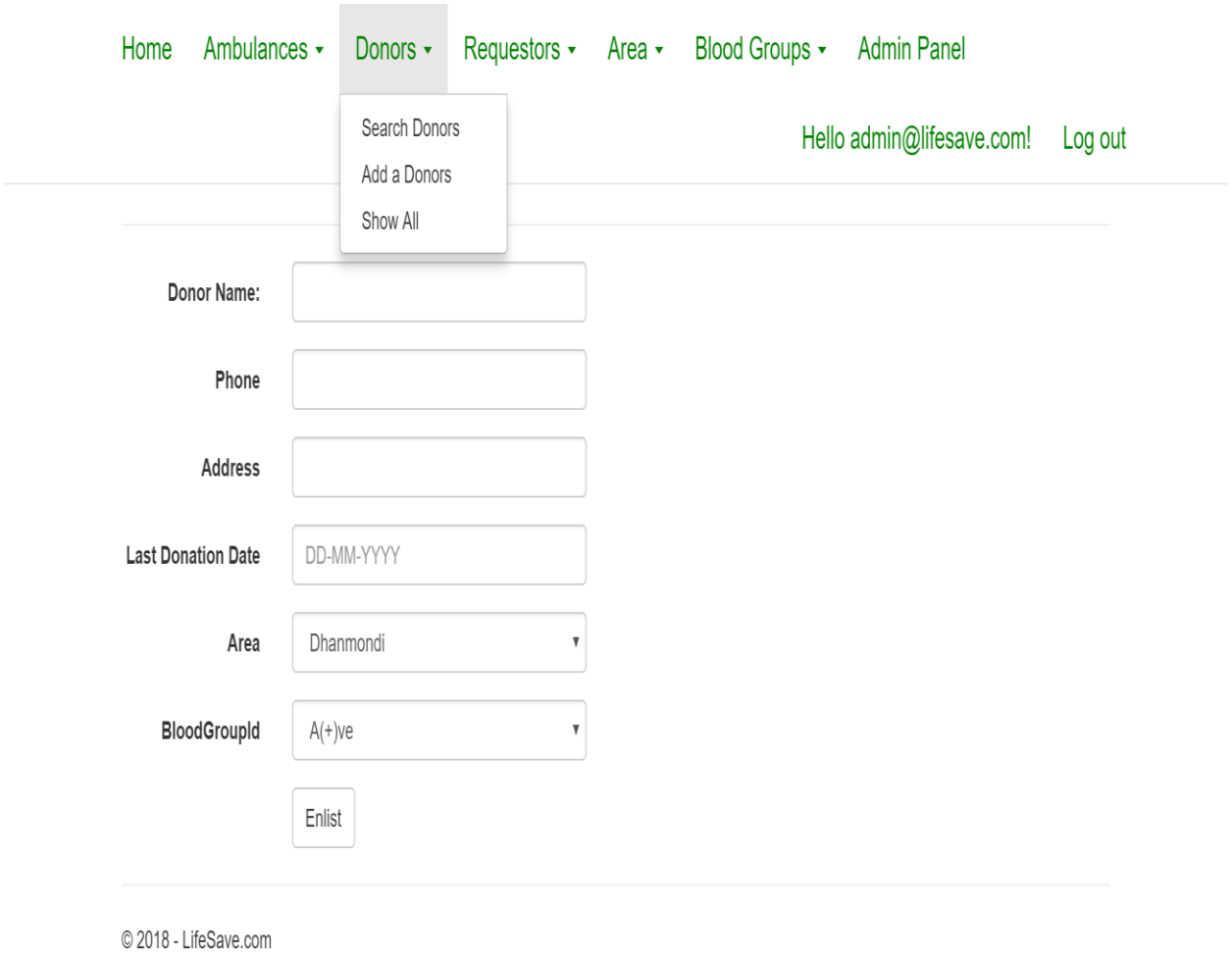

Figure 4.6: Back-End UI of donors section.

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Donor Search

If the requestor/donor searches the specific blood group, he/she can get easily found the donor service of blood group.

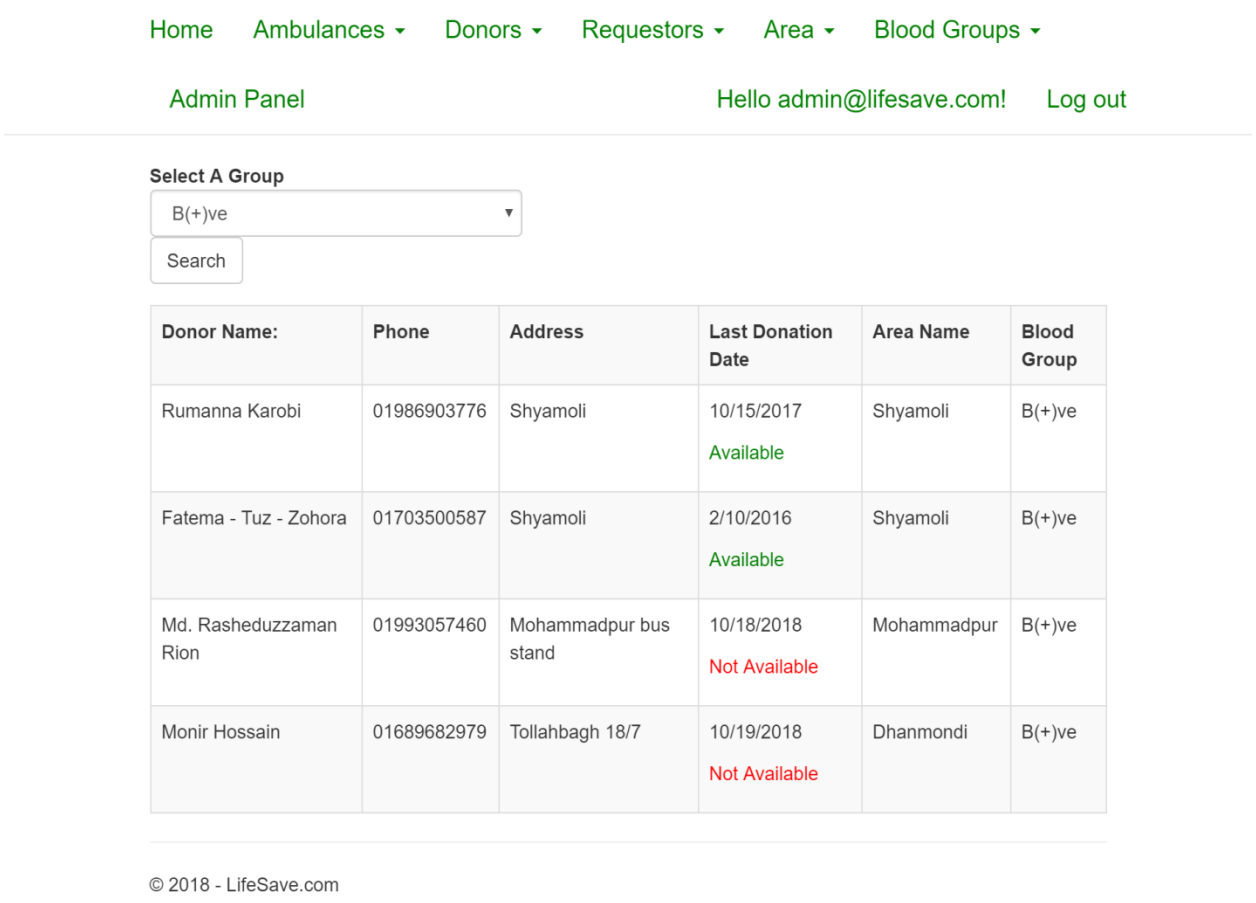

Figure 4.7: Back-End UI of donor search section.

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Requestors

Hear requestors enlist his/her information and they can also search ambulances & donors. They can get easily both of ambulance & donors phone number and make call to help them. The requestors also update his/her information.

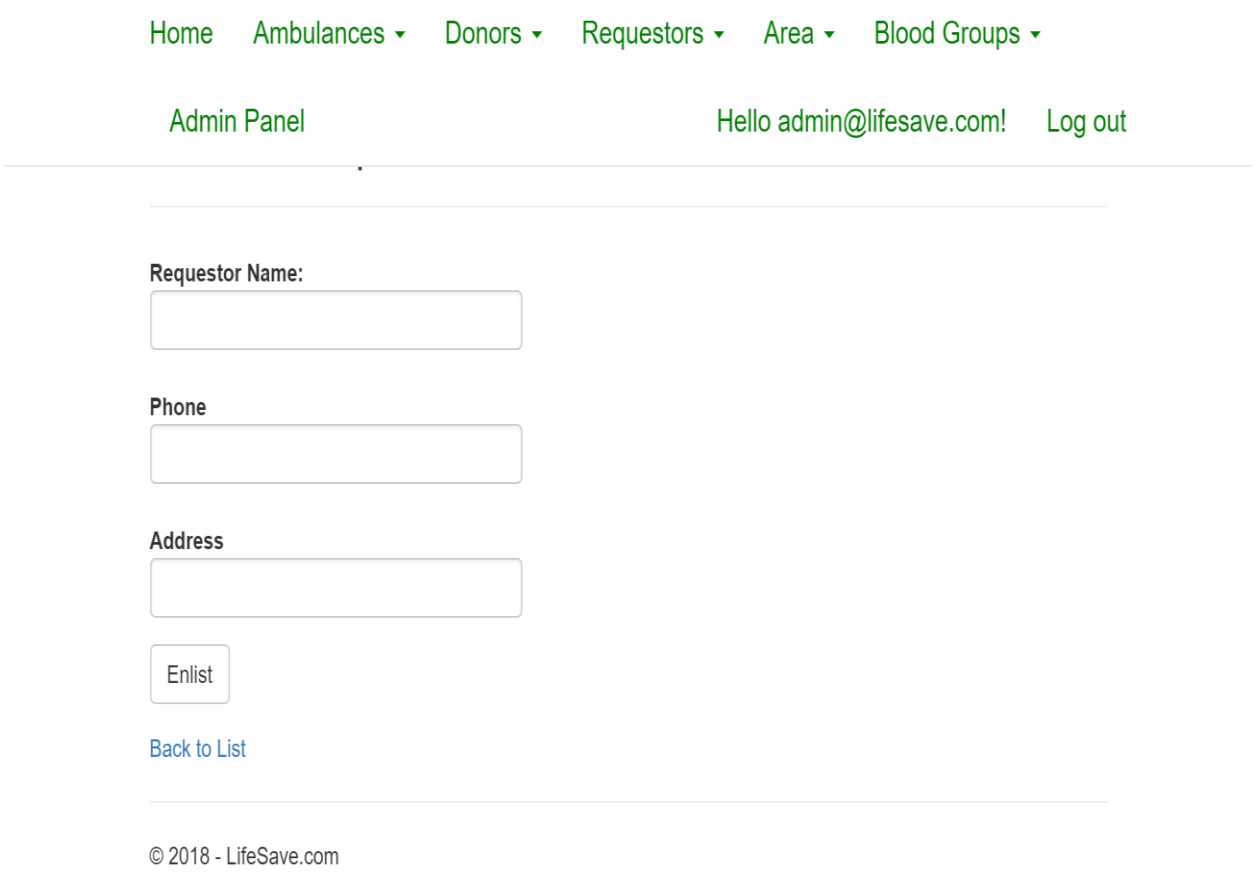

Figure 4.8: Back-End UI of Requestor section

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Contact

The owner of ambulance communicate me, I can add his/her ambulance of my website.

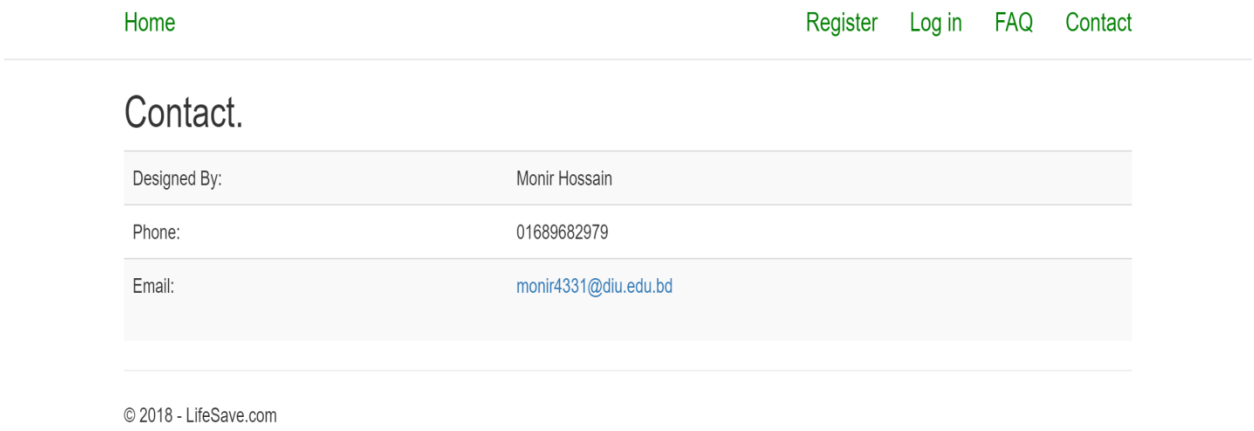

Figure 4.9: Back-End UI of Contact section

4.4 Implementation Requirement

Our application runs with the help of c# and entity framework 6. This is the most popular and used server in the world.

We have needed some configuration requirements.

- Needed to install Microsoft visual studio.
- Install Ms SQL server.
- Needed font end work for bootstrap.

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CHAPTER 5

Implementation and Testing

5.1 Introduction

We are already done the requirement in chapter 5. Now it's time to implement those in real life environment stage. Different strategic decision should be made for successful implementation of the project. The system should be reviewed time to time for checking that the implementation will successful and also prevent the error.

5.2 Implementation of Database

For implementing database we use MS SQL tool. We create table and their entity by using MS SQL. We follow the database normalization process for reducing the redundancy of our database. We design the database with the best practice of making database that's why we got the effective database for our application.

5.3 Implementation of Front-end-Design

For implementing front-end we use HTML5, CSS3, BootStrap3 and Razor. By the help of html and bootstrap we made the structure of our application and by the help of Razor we design our application. With the help of bootstrap and Razor we made our application more interactive from any other application [2].

5.4 Implementation of Interaction

For implementing the interaction of our application we use the bootstrap front-end language and Razor which is .Net programming language. By the help of bootstrap we made an effective change of the interaction of our application. Razor is one of the most popular .Net programming languages for making of dynamic page of interactive application.

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5.5 Testing Implementation

System Testing is the testing of a complete and fully integrated software product. Usually software is only one element of a larger computer based system. It is the activity that can be planned driven systematically [5]. A complete and effective system depends on testing. So testing is more important to build a project.

5.6 Test Results and Reports

This is the final step in testing. In this the entire system was tested as a whole with all forms, code, modules and class modules. This form of testing is popularly known as Black Box testing or system tests [6].

Black Box testing methods focus on the functional requirement of the software. That is, Black Box testing enables the software engineer to derive sets of input conditions that will fully exercise all functional requirements for a program. Black Box testing attempts to find errors in the following categories; incorrect or missing functions, interface errors, errors in data structures or external database access, performance errors and initialization errors and termination errors [7].

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CHAPTER 6
Conclusion and Future Scope

6.1 Discussion and conclusion

In future I want to spread this system in every district in Bangladesh. If I can get info from district level ambulance service and hospital then everyone from any district can easily get this service. I want to make this web application as a android app for better use. It makes people more available and easier.

I also want to add doctor's appointment system in this application. For this option user can easily get all renowned doctors list as well as appointment service. User can get the schedule and pre booking service in this option.

We design our site so well and attractive that users feel effective to use .To implement this project we used C#, Bootstrap as the technology. C# was used as back-end database science it is one of the most popular open source database.

The development of the project has given us a huge knowledge about how to develop a website and connection of database to access data. Web pages are modified to provide the user Online Ambulance & Donor system application. That is a great success for us and it makes us more confident to do another successful professional work.

6.2 Scope for further development

In future we can add some more layouts for the user. We will make an Android apk for easy way communication and promote this app over the country. We also want to work with government for this issue as people can get the best service from everywhere in our country. We think that, both rural and urban area people will be benefitted for this initiative work.

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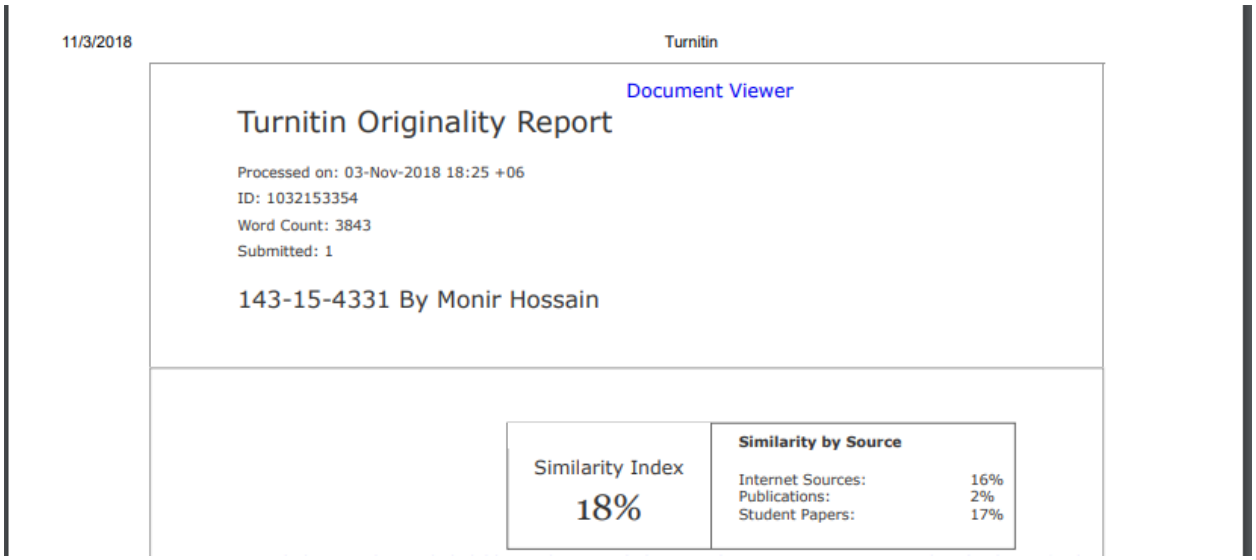

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