

Emergency Ambulance System



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING.

**BANGLADESH UNIVERSITY OF BUSINESS & TECHNOLOGY.
(BUBT)**

MIRPUR-2, DHAKA-1216.

June, 2020

BANGLADESH UNIVERSITY OF BUSINESS & TECHNOLOGY (BUBT)



Emergency Ambulance System

*A project
Submitted to the Department of Computer Science and Engineering
in partial fulfillment of requirements
for the full degree
of*

Bachelor of Science in Computer Science and Engineering

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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.

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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 .

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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.

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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 Data Objects Data Base
W3C	The World Wide Web Consortium
ERD	Entity Relationship Diagram
DFD	Data Flow Diagram

GUI	G raphical U ser I nterface
URL	U niversal R esource L ocator
PC	P ersonal C omputer
MB	M ega B yte
GB	G iga B yte
OS	O perating S ystem
SL NO	S erial N umber
PDF	P ortable D ocument F ormat

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The rapid advancements in information and communication technologies (ICTs) in today 's e-society has become a significant element of development. Its profound impacts have been felt in every sector of many countries economy such as education, communication, banking, healthcare, and so on. In particular, ICT tools has really changed the way information is created, stored, used and exchanged. It is important to realize that a hospital does not manage emergencies or disasters by itself. There are other pre- hospital factors, which have to be considered. Developed countries such as the USA, the UK, other European countries, Australia and Japan already have systems that integrate pre- hospital and inter- hospital facilities. In developing countries, a pre-hospital emergency service may not exist, and resources are minimal. If we can integrate all the pre-hospital and hospital resources which are available, we can make an Integrated Emergency Ambulance and Medicine Services System which will provide the means to manage daily emergencies and disasters in an organized way, and also provide good quality emergency medical care .Such a system should have the same organizational structure at national, provincial, district and local level so that there is uniformity even if the resources vary. In the software, we can register as an admin & need to user registration. Users open the site and directly show the all the information about ambulance and medicine services. Admin has the power to add new ambulance and medicine, update or manage the all upload ambulance and medicine services .In this software, we designed and implemented a system which is a location based service (LBS) tobridge the communication gap between healthcare service providers and patients residing in the rural and urban areas. The focal point are the rural communities in Mafikeng in SA. With this system, patients in need of medical attention unavailable in the rural area of residence can perform tasks such as make an appointment or book access the services of ambulance transportation quickly, as well as predicting its arrival time. Furthermore, it will assist paramedics to locate the current or actual position of the patient. To this end, smart mobile devices are utilized for the efficient and effective operations.

1.2Existing System

There are many software systems ,who use manually their process of the clients and most of them are online based. Manual scheduling can be a burden for many establishments, as it requires significant time and staff resources to manage properly. First client should go to the website or apps to have an ambulance and medicine . Then they need to fulfill the form after that the form will check by the admin and if there is any wrong, admin will call the user to solve the wrong. After this long process, finally they decide for a deal and they reached a fare condition.

1.2.1 Uber

Uber Technologies, Inc., commonly known as Uber, is an American multinational ride-hailing company offering services that include peer-to-peer ridesharing, ride service hailing, food delivery (Uber Eats), and a micro-mobility system with electric bikes and scooters. The company is based in San Francisco and has operations in over 785 metropolitan areas worldwide. Its platforms can be accessed via its websites and mobile apps .In addition to giving riders a way to get from point A to point B, it's working to bring the future closer with self-driving technology and urban air transport, helping people order food quickly and affordably, removing barriers to healthcare, creating new freight-booking solutions, and helping companies provide a seamless employee travel experience.

As of 2019, Uber is estimated to have over 110 million worldwide users.[4] In the United States, a 67% market share for ride-sharing in early 2019[5] and a 24% market share for food delivery in 2018.[6] Uber has been so prominent in the sharing economy that the changes in industries as a result of it have been referred to as uberisation and many startups have described their products as "Uber for X" .The National Bureau of Economic Research estimated that, in 2015, Uber had accounted for \$6.8 billion in consumer surplus.

1.2.2 Pathao

Founded in 2015, Pathao is among the fastest growing tech startups in Asia which has dedicated itself to create solutions to minimize infrastructural problems.

A fast paced organization, the company gives its employees an immense amount of space to grow professionally as well as take ownership of the initiatives undertaken in the organization.

With a hope to accelerate the establishment of digital Bangladesh, Pathao provides an app based solution through ride sharing, food delivery and e-commerce logistics services. By harnessing the power of technology, Pathao aims to provide all services in one platform.

1.2.3 Foodpanda

Foodpanda (stylized as foodpanda) is a mobile food delivery marketplace available in 12 countries. It is mostly active in Asia Pacific, Bulgaria and Romania. It is headquartered in Berlin, Germany.[5]

The service allows users to select from local restaurants and place orders via its mobile applications as well as its websites.[5] The company has partnered with over 27,095 restaurants in 193 cities and works with over 15,733 delivery riders. The firm was acquired by Delivery Hero in early December 2016. Foodpanda's business in India was acquired by Indian cab-aggregator Ola on 29 December 2017 for an undisclosed amount.[5]

Lunched on November 19th, 2013 in Bangladesh, FoodPanda is an excellent online food delivery system. You can order different types of food from their partnering restaurants, and they will be delivered at your home for free! You can pay as soon as you get the food delivered. No credit card is required to order food, no advance payment.

1.3 Motivations Based on these above problems, we are highly motivated to introduce or develop a new system namely ‘Bachao’ having the following features.

- Earlier, people had to contact a hospital to call for an ambulance, but with this app, people can significantly reduce the amount of time to call one.
- The purpose of an ambulance is to get a patient to a hospital, as soon as possible.
- Going Online To Find The medicine.
- User could give us feedback & opinions.

- Admin can add ambulances and medicines.
- Scope of further improvement.

For above all information, we are highly motivated to develop “Bachao”.

1.4 Objectives

The main objective of the “Bachao”[2] is to manage the details of ambulances, medicines and registered users. The project is totally collecting its necessary information from the registered users. If any information has any problem so that the admin modifies or delete that's content. The following are the objectives of this project:

- i. To provide well equipped ambulances and qualified trained ambulance personnel for the sick and the injured
- ii. Excellence in total patient care
- iii. Assuring the infrastructure necessary so that our services will be available regardless of man-made or natural disaster
- iv. Having an excellent, well deserved image and reputation in the emergency services and general communities, and maintaining good relationships in these areas
- v. To manage all clients and companies related information
- vi. To capture all cities of Bangladesh
- vii. To get the feedback from the users
- viii. The system should provide admin facility to manage the properties

1.5 Contributions

The purpose of the project ‘Bachao’[2] was to build an application program to reduce the trouble of the users. After implement the project, we overcome the manual work for user satisfaction. So, the contributions of the project are:

- i. To create web-based ambulance and medicine services system.
- ii. Our project ‘Bachao’ is fully web-based software.

- iii. Admin has to manage of the all projects and related information
- iv. It is an efficient system.
- v. Enough flexible for the users.
- vi. Admin can add a new ambulance and edited within a particular section.
- vii. The system provides a strong security system.
- viii. It saves time and money.

1.6 Organization of The Project Report

The organizations of the project report are as follows:

Chapter 2, we discuss the existing systems of “Bachao” that able to clear our intention to develop our system with saving time, energy. Manually, it is very energetic and time-consuming process. We also describe Existing/Supporting systems, Analysis of existing system and many diagrams in this chapter. Our proposed solution “Bachao” to make a truly online system to have met with Ambulance and Medicine Services System, all manual process has been automated through this system are described in Chapter 3.

Feasibility study, requirement analysis, system design, data-flow diagram (DFD), entity relationship diagram (ERD), database design, forms design, report design is also described in this section. Finally, we implement our system. In implementation various kinds of code are presented. All the experimental result in our system we describe in the Chapter 4.

Chapter 5 introduced system requirements, hardware requirements, software requirements graphical user-interfaces of each side (users’ side and Admin side) and user manual having all the screenshots with explanation how user can

work and corresponding output of the system. It provides the direction to the users who don’t know how to use the software. It denotes which page will come after which one. It also denotes which task have to do after which one, how to complete our project. Finally, conclusion and the limitations of the project with prospective future scopes are defined in Chapter 6.

We also describe the benefits of our system in this section .

1.7 Conclusions

The “Bachao” is a system that provide the user interface where the all users can be searched a medicine and feedback. The admin can add an ambulance, medicine and also manage all the systems. Admin show the all feedback and contract the users by message, email, answer the user’s questions. Admin record the sells of medicine and the history for future need and also search the project to select city’s, area, locations, types and price. A user selects an ambulance or medicine and contract with the admin and deal with ‘Bachao’ Available at: each other and finally booking the select ambulance.

CHAPTER 2

EXISTING SYSTEM

2.1 Introduction

In this chapter we discuss the existing systems of ‘Bachao’ that able to clear our intention to develop our ambulance and medicine service system with saving time, energy. Manually, it is very energetic and time-consuming process. We aim to address this lacking by providing online base application and provide the best opportunity of the admin and the users. Bachao System[2] also provide for the users where they have an ambulance and medicine for them. The outcome of this system also offers solution to overcome very energetic and time consuming that may occur in the manual Ambulance and Medicine Service System. The chapter also contains problem of existing system, supporting theory, analysis of existing system. The explanation of many diagram such as Entity Relationship Diagram (ERD), Data Flow Diagram (DFD), Use Case Diagram is a part of this chapter. We also describe the manual system and their problem in this chapter. PHP, HTML, CSS, jQuery, JavaScript, MySQL are also described in this chapter.

2.2 Existing Systems

There are many ambulance and medicine service systems[1], who use manually their process of the clients and some are online based. Manual scheduling can be a burden for many establishments, as it requires significant time and staff resources to manage properly. After the long process, finally they decide for a deal and they reached a fare and the hand over. The related works and the theory/literature are detailed below:

2.2.1 Uber

[5] Uber is a platform where those who drive and deliver can connect with riders, eaters, and restaurants. In cities where Uber[5] is available, you can use the Uber app to request a ride. When a nearby driver accepts your request, the app displays an estimated time of arrival for the driver heading to your pickup location.

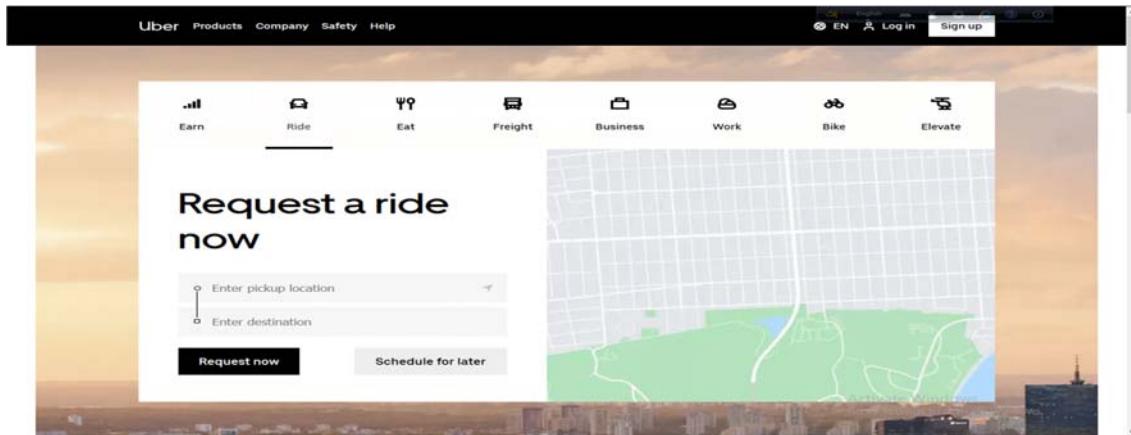


Figure 2.1: Uber home page

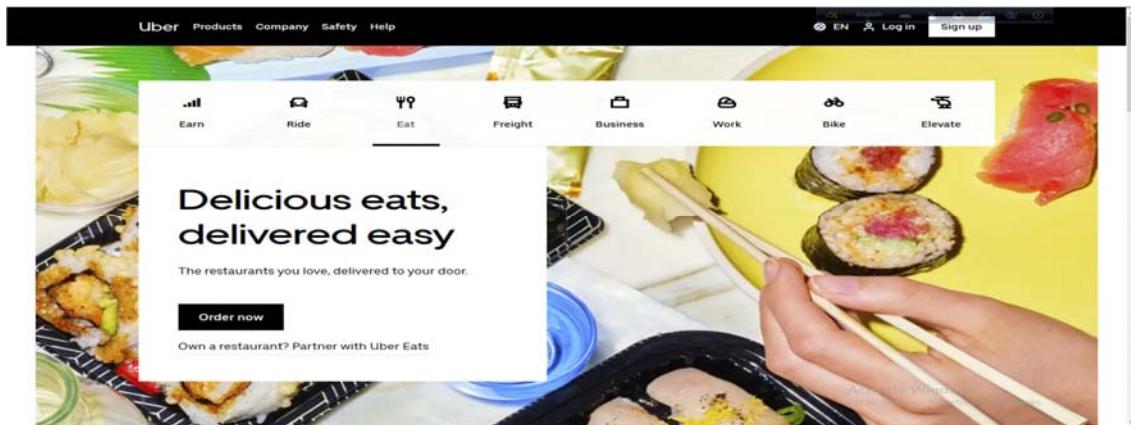


Figure 2.1: Uber home page

2.2.1.1 Features

1. Book a ride for now or later

The “how to book” is an important consideration when including this feature. You should have the following input to book the ride

- i. The pick-up location
- ii. The drop location
- iii. The type of vehicle the user wants to select
- iv. The time and date, in the case of the book later feature

2. Real-time tracking of driver

3. Allow others to follow ride in real-time
4. Multiple payment options
5. Preferred driver
6. Add multiple drop-off points
7. Driver review and rating
8. Trip history
9. In-app chat or call option
10. Save destinations

2.2.1.2 Advantages

- i. Convenient and Cashless
- ii. Professional Service
- iii. Competitive Pricing
Generally, Uber is less expensive than traditional taxis and car services.
- iv. Safer and More Flexible for Drivers

2.2.1.3 Dis-advantages

- i. Surge Pricing
- ii. Trip Cancellations
- iii. Safety Concerns
- iv. Low Fares Hurt Drivers
- v. Negative Impact of Price competition

2.2.2 Pathao

[4] Pathao follows a Super App model, providing all of its services through one app. [14] They update their app frequently to make the overall app navigation more straightforward and more natural for all users. Pathao currently provides ride-sharing, parcel, food delivery and On-demand Transport Sharing services in 3 major cities of Bangladesh, Dhaka, Chittagong and Sylhet and in Kathmandu of Nepal. Its food delivery services are currently available in Dhaka Metropolitan Regions and Chittagong Metro areas.

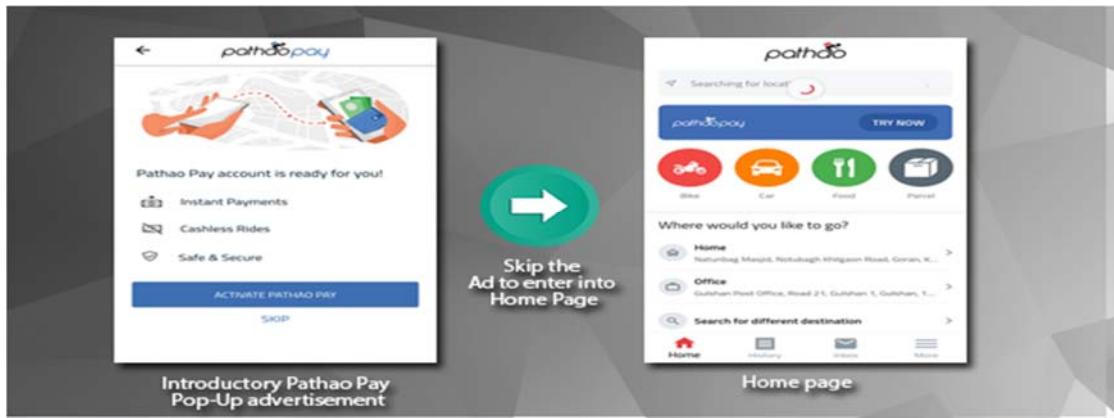


Figure 2.2.2: Pathao home page



Figure 2.2.2: Pathao home page

2.2.2.1 Features

- i. Insurance Coverage
- ii. Rapid Response Team
- iii. 2 Way Rating System
- iv. Live Location Share
- v. Call Centre Support

2.2.2.2 Advantages

- i. Earn points with every eligible ride and food order
- ii. Access to exclusive deals and discounts availability
- iii. Special offers on restaurants, flights, hotels
- iv. Priority Support

- v. Special access to highly rated drivers*
- vi. Free deliveries on select food orders
- vii. Premium Support Hotline
- viii. Special rates for your two favourite destinations*

2.2.2.3 Dis-advantages

- i. Customers allege that some drivers are charging extra fares, taking detours, clocking rides before pick up and refusing to take them to their destinations.
- ii. Drug addicts have begun taking work as drivers.
- iii. At the end of the ride, the driver demanded a higher fare, saying the app sometimes shows incorrect readings.
- iv. Sometimes driver didn't follow the rout.
- v. After the trip, they demanded a tip.

2.2.3 Foodpanda

[5] foodpanda (in Asia and Europe) and hellofood (in Middle East), is a global online food delivery marketplace headquartered in Berlin, Germany. The service allows users to select from local restaurants and place orders via the website or mobile application. The foodpanda group currently employs more than 3,000 people worldwide, and continues to grow at an impressive speed. In June 2014, foodpanda, together with its affiliated brand hellofood, won the European E-Commerce Award as the best E-Commerce start-up in Europe. It is part of the DELIVERY HERO GROUP, which is head quartered in Berlin, Germany. The DELIVERY HERO GROUP is currently processing over 20 million orders per month across more than 50 countries and experiencing phenomenal growth. foodpanda Bangladesh is the leading online food delivery marketplace in Bangladesh. It is partnered with hundreds of restaurants and offers customers the most convenient food ordering and delivery experience in Bangladesh. It is operational in Dhaka, Chittagong and Sylhet.

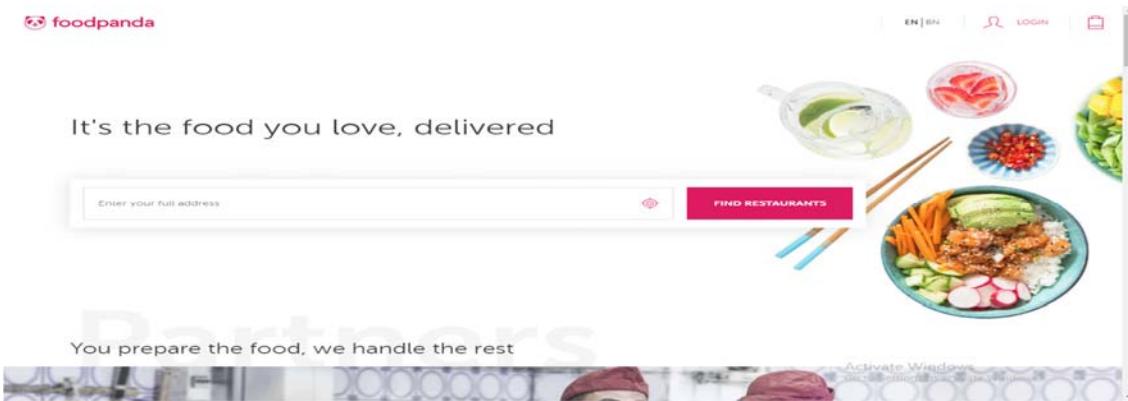


Figure 2.2.3 : Foodpanda home page

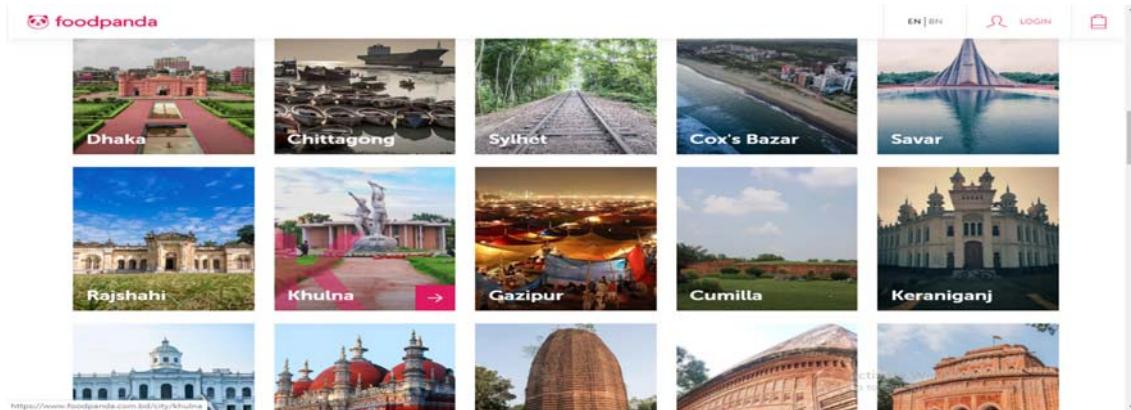


Figure 2.2.3 : Foodpanda home page

2.2.3.1 Features

- i. Permits pre-orders several hours before requested delivery
- ii. Displays the live location of the delivery driver
- iii. In India Only) Works in collaboration with the railway's e-catering services
- iv. Contact the rider directly

This new feature allows consumers to start a conversation with the riders directly.

Now instead of calling restaurants and foodpanda directly, customers can chat with the rider directly if they'd like to drop more instructions on their location or to even inquire about late deliveries.

v. Track food in real time

From pick up to delivery points, all food orders can now be tracked in real time through the app.

Once the order is confirmed, the ‘contact your rider’ tab allows to start a conversation with your rider.

From the restaurant to your front door, now it's easier to know where your food is at all times.

2.2.3.2 Advantages

- i. Works within a restaurant's current delivery/pickup structure
- ii. Allows user reviews
- iii. Curates the list of available restaurants

2.2.3.3 Dis-advantages

- i. Does not offer many delivery options (depending on the location)
- ii. Works in only 22 countries, most of which are in Eastern Europe.
- iii. Has difficulty locating a user based on a typed-in address

2.3 Supporting Theory

Our whole system is web based. We have implemented our system by the following supporting various web technology and tools for both frontend and backend.

2.3.1 HTML

HTML is a computer language devised to allow website creation. These websites can then be viewed by anyone else connected to the Internet. It is relatively easy to learn, with the basics being accessible to most people in one sitting; and quite powerful in what it allows you to create. It is constantly undergoing revision and evolution to meet the demands and requirements of the growing Internet audience under the direction of the » W3C, the organization charged with designing and maintaining the language. HTML consists of a series of short codes typed into a text-file by the site author — these are the tags. The text is then saved as an html file, and viewed through a browser, like Internet Explorer or Netscape Navigator. This browser reads the file and translates the text into a visible form, hopefully rendering the page as the author had intended. Writing your own HTML entails using tags correctly to create your vision. You can use anything from a rudimentary text-editor to a powerful graphical editor to create HTML pages. The tags are what separate normal text from HTML code. You might know them as the words between the <angle-brackets>. They allow all the cool stuff like images and tables and stuff, just by telling your browser what to render on the page. Different tags

will perform different functions. The tags themselves don't appear when you view your page through a browser, but their effects do. The simplest tags do nothing more than apply formatting to some text, like this: these words will be bold, and these will not. In the example above, the tags were wrapped around some text, and their effect will be that the contained text will be bolded when viewed through an ordinary

web browser. If you want to see a list of a load of tags to see what's ahead of you, look at this tag reference. Learning the tags themselves is dealt with in the next section of this website. HTML stands for Hyper Text Markup Language. It can be thought of as a programming language that is used to place text, images and other contents on a webpage. It is the foundation of almost any page you visit on your browser. Although not a true programming language (it doesn't process or manipulate data, it is only a language that defines layouts), it's a great place to start if you want to get involved with computers, primarily because it's exciting and you can see the results of your learning almost instantly. It is where I started.

2.3.1 Basic Form of HTML Looks Like

The example of HTML is given below.

```
<DOCTYPE!>

<html>

<head>

<title> Page title </title>

</head>

<body>

<h1>This is a Heading</h1>

<p>This is a paragraph</p>

</body>

</html>
```

2.3.2 CSS

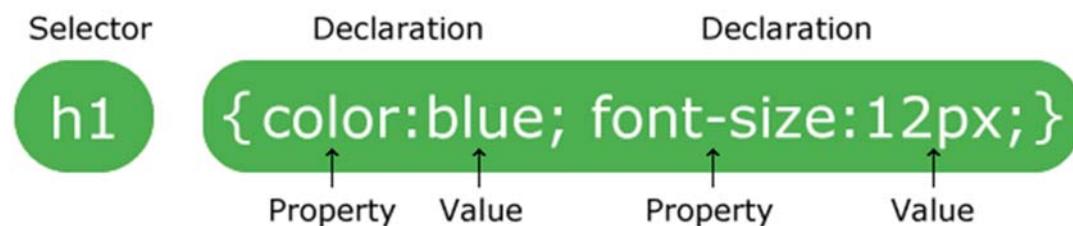
CSS is the language for describing the presentation of Web pages, including colors, layout, and fonts. It allows one to adapt the presentation to different types of devices, such as large screens, small screens, or printers. CSS is independent of HTML and can be used with any XML-based markup language. CSS (Cascading Style Sheets) allows you to create great looking web pages, but how does it work under the hood? This article explains what CSS is, how the browser turns HTML into a Document Object Model (DOM), how CSS is applied to parts of the DOM, some very basic syntax examples, and what code is used to actually include our CSS in our web page. As we have mentioned before, CSS is a language for specifying how documents are presented to users — how they are styled, laid out etc. A document is usually a text file structured using a markup language — HTML is the most common markup language, but you will also come across other markup languages such as SVG or XML. Presenting a document to a user means converting it into a usable form for your audience. Browser, like Firefox, Chrome or Internet Explorer, is designed to present documents visually, for example, on a computer screen, projector or printer. CSS can style almost any HTML tag that creates a visible element on the page, including all the HTML tags used to create headings, paragraphs, links, images, lists, and tables list. Specifically, CSS allows you to style.

- i. Text size, color, style, typeface, and alignment.
- ii. Link color and style
- iii. Image size and alignment
- iv. List bullet styles and indentation
- v. Table size, shading, borders, and alignment

2.3.2.1 CSS Syntax

A CSS rule set consists of a selector and a declaration

block



The selector points to the HTML element you want to style.

The declaration block contains one or more declarations separated by semicolons.

Each declaration includes a CSS property name and a value, separated by a colon.

A CSS declaration always ends with a semicolon, and declaration blocks are surrounded by curly braces.

2.3.2.2 CSS Example

In this example all <p> elements will be center-aligned, with a red text

color:

```
p{ color: red;
```

```
text-align:
```

```
center; }
```

2.3.3 PHP

PHP (recursive acronym for PHP: Hypertext Preprocessor) is a widely-used open source general purpose scripting language that is especially suited for web development and can be embedded into HTML. PHP is mainly focused on server-side scripting, so you can do anything any other CGI program can do, such as collect form data, generate dynamic page content, or send and receive cookies. You can access the PHP program output with a web browser, viewing the PHP page through the server. PHP is a language that creates web pages, but exactly how does it do this? If you know some HTML, you might be wondering what PHP have to do with it and how it integrates into a web page. You can think of PHP as a general-purpose computing language if you want to, but it was designed with one task in mind and it is almost exclusively used for that task - generating web pages. So, while it might be more flattering to PHP to introduce it in the widest possible context this would be misleading and it would make the job of learning how to use it harder than it needs to be. So, let's say the obvious to make it 100% clear. PHP is a language that creates web pages. What this means in practice is that a PHP program's objective in life is to generate HTML or JavaScript or anything else that you might find in a web page. In most cases and certainly when you are first learning PHP the web technology that is used is HTML. The output of a typical PHP program is HTML this means that to make any sense of PHP you also have to know about the web technology that the program is generating, and in particular HTML. In practice, this should not be a huge problem because HTML is not difficult and mostly the way that PHP makes use of it is simple. However, it is important to know that it is possible that you could have a problem with understanding a PHP program simply because you cannot understand the HTML it is generating.

2.3.3.1 PHP Work Flow

PHP framework to build Workflow Management system. There are many frameworks through which you can generate a graph of your existing flow. So, it is basically interested in defining a workflow rather than generating the graph for existing framework. And it should be an open source framework (basically PHP).

The following figure is given below,

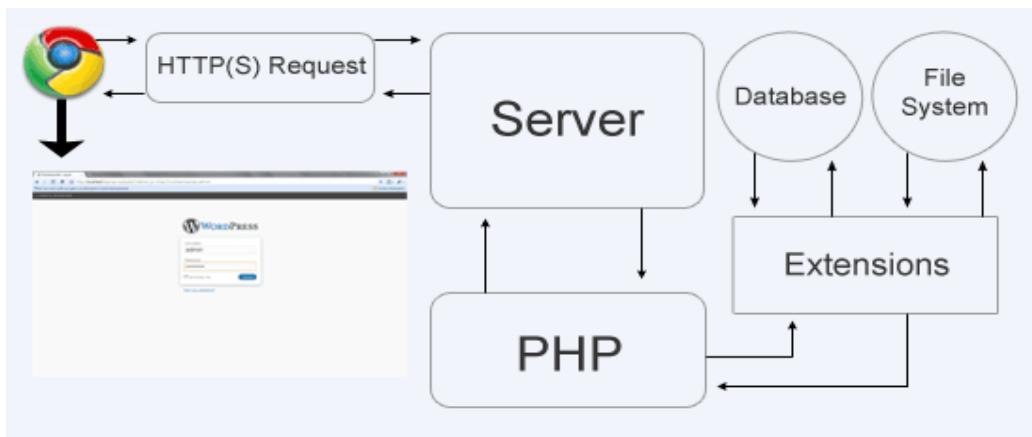


Figure:2.4 Php workflow

2.3.4 MySQL

MySQL is an open source relational database management system (RDBMS) based on Structured Query Language (SQL). MySQL runs on virtually all platforms, including Linux, UNIX, and Windows. Although it can be used in a wide range of applications, MySQL is most often associated with web-based applications and online publishing and is an important component of an open source enterprise stack called LAMP. LAMP is a Web development platform that uses Linux as the operating system, Apache as the Web server and MySQL as the relational database management system and PHP as the object-oriented scripting language. (Sometimes Perl or Python is used instead of PHP.) MySQL, the most popular Open Source SQL database management system, is developed, distributed, and supported by Oracle Corporation. MySQL is a freely available open source Relational Database Management System (RDBMS) that uses Structured Query Language (SQL). SQL is the most popular language for adding, accessing and managing content in a database. It is most noted for its quick processing, proven reliability, ease and flexibility of use. MySQL is an essential part of almost every open source PHP application. Good examples for PHP & MySQL-based scripts are WordPress, Joomla, Magneto and Drupal. One of the most important things about using MySQL is to have a MySQL specialized host. Here are some of the things Site Ground can offer: We have long experience in providing technical support for MySQL-based web sites. Thanks to it our servers are perfectly optimized to offer the best overall performance for most MySQL applications. We offer a lot of free MySQL tools including CMS systems, forums, galleries, blogs, shopping carts and more. We support MySQL 5 and we provide unlimited MySQL databases on all our hosting plans.

2.3.4.1 Reasons of use MySQL

The following reasons of using MYSQL are given below

- i. Scalability
- ii. High Performance
- iii. High Availability
- iv. Robust Transactional Support
- v. Web and data Warehouse Strengths
- vi. Strong data protection
- vii. Management Ease
- viii. Very fast, reliable, and easy to use
- ix. ix. Ideal for both small and large application.

2.3.5 XAMPP

Xampp stands for Cross-platform (x), Apache (a), Maria BD (M), PHP (P) and Perl (P). It is a simple lightweight Apache distribution that makes it extremely easy for developers to create a local web server for testing purpose. Everything needs to set up a web server –server application (Apache), database (MySQL), and scripting language (PHP)-is included in a simple extractable file. XAMPP is also cross-platform, which means it works equally well on Linux, Mac and Windows.

The following are the XAMPP included tools:

- i. Apache
- ii. MySQL
- iii. PHP+PEAR
- iv. Perl v. OpenSSL
- v. phpMyAdmin
- vi. Xampp Control Panel
- vii. Webalizer
- viii. SQLite
- ix. ADODB
- x. Zend Optimizer
- xi. Xampp Security
- xii. Tomcat

2.3.5.1 Xampp Control Panel

XAMPP is a software distribution which provides the Apache web server, MySQL database (actually MariaDB), Php and Perl (as command-line executables and Apache modules) all in one package. It is available for Windows, MAC and Linux systems. No configuration is necessary to integrate Php with MySQL.

Here is the screenshot of xampp control panel -

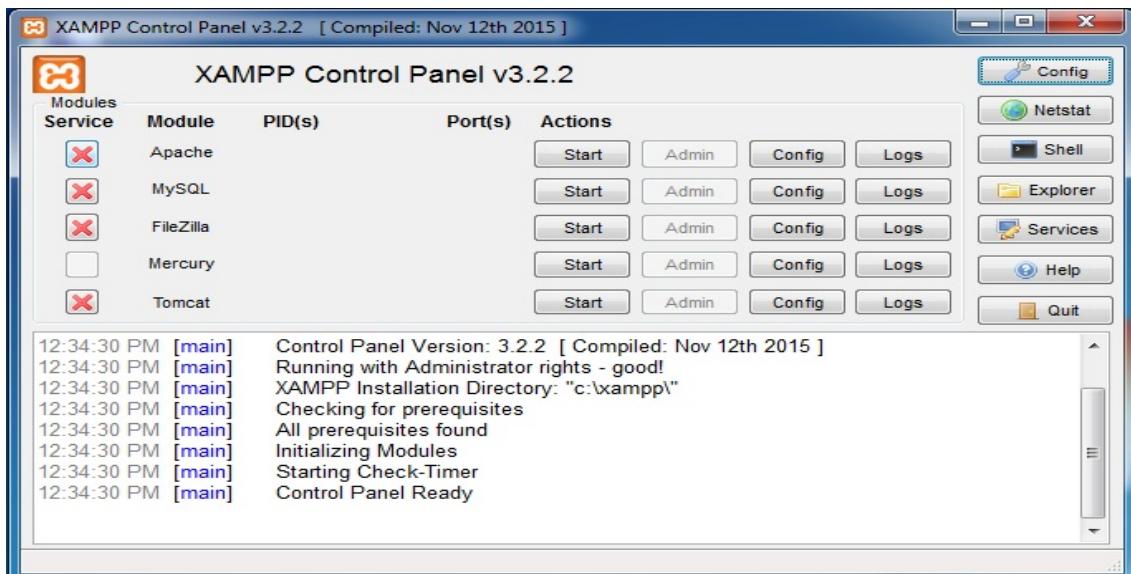


Figure :2.5 Xampp control panel

2.5.3.2 Entity-Relationship Diagram (ERD)

An Entity Relationship (ER) Diagram is a type of flowchart that illustrates how “entities” such as people, objects or concepts relate to each other within a system. ER Diagrams are most often used to design or debug relational databases in the fields of software engineering, business information systems, education and research. Also known as ERDs or ER Models,

they use a defined set of symbols such as rectangles, diamonds, ovals and connecting lines to depict the interconnectedness

of entities, relationships and their attributes. They mirror grammatical structure, with entities as nouns and relationships as verbs.

2.3.5.3 Uses of Entity Relationship Diagrams

- i. **Database design:** ER diagrams are used to model and design relational databases, in terms of logic and business rules (in a logical data model) and in terms of the specific technology to be implemented (in a physical data model.) In software engineering, an ER diagram is often an initial step in determining requirements for an information systems project. It's also later used to model a particular database or databases. A relational database has an equivalent relational table and can potentially be expressed that way as needed.
- ii. **Database troubleshooting:** ER diagrams are used to analyze existing databases to find and resolve problems in logic or deployment. Drawing the diagram should reveal where it's going wrong.
- iii. **Business information systems:** The diagrams are used to design or analyze relational databases used in business processes. Any business process that uses fielded data involving entities, actions and interplay can potentially benefit from a relational database. It can streamline processes, uncover information more easily and improve results.
- iv. **Business process re-engineering (BPR):** ER diagrams help in analyzing databases used in business process re-engineering and in modeling a new database setup.
- v. **Education:** Databases are today's method of storing relational information for educational purposes and later retrieval, so ER Diagrams can be valuable in planning those data structures.
- vi. **Research:** Since so much research focuses on structured data, ER diagrams can play a key role in setting up useful databases to analyze the data.

2.3.5.4 The Components and Features of an ER Diagram

ER Diagrams are composed of entities, relationships and attributes. They also depict cardinality, which defines relationships in terms of numbers. Here's a glossary:

i. Entity

A definable thing such as a person, object, concept or event that can have data stored about it. Think of entities as nouns. Examples: a user, client, car or product. Typically shown as a rectangle.

Entity

- a. **Entity type:** A group of definable things, such as users, whereas the entity would be the specific user. Other examples: customers, cars or products.
- b. **Entity set:** Same as an entity type, but defined at a particular point in time, such as users visited it in the first day. Other examples: Customers who purchased last month, cars currently registered in Florida. A related term is instance, in which the specific person or car would be an instance of the entity set.
- c. **Entity categories:** Entities are categorized as strong, weak or associative. A strong entity can be defined solely by its own attributes, while a weak entity cannot. An associative entity associates entities (or elements) within an entity set.

Weak entity

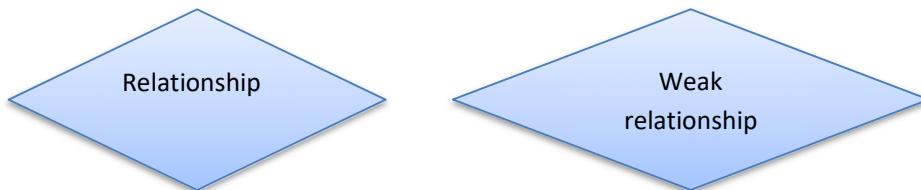
Associative
entity

- d. **Entity keys:** Refers to an attribute that uniquely defines an entity in an entity set. Entity keys can be super, candidate or primary.

- e. **Super key:** A set of attributes (one or more) that together define an entity in an entity set.
- f. **Candidate key:** A minimal super key, meaning it has the least possible number of attributes to still be a super key. An entity set may have more than one candidate key.
- g. **Primary key:** A candidate key chosen by the database designer to uniquely identify the entity set. Foreign key identifies the relationship between entities.

ii. Relationship

How entities act upon each other or are associated with each other. Think of relationships as verbs. For example, the named student might register for a course. The two entities would be the users and the properties, and the relationship depicted is the act of enrolling, connecting the two entities in that way. Relationships are typically shown as diamonds or labels directly on the connecting lines.



- a. **Recursive relationship:** The same entity participates more than once in the relationship.
- b. **Attribute:** A property or characteristic of an entity. It is often shown as an oval or circle.



- c. **Descriptive attribute:** A property or characteristic of a relationship (versus of an entity.)
- d. **Attribute categories:** Attributes are categorized as simple, composite, derived, as well as single-value or multi-value.

- e. **Simple:** Means the attribute value is atomic and can't be further divided, such as a phone number.
- f. **Composite:** Sub-attributes spring from an attribute.
- g. **Derived:** Attributed is calculated or otherwise derived from another attribute, such as age from a birth date.



- h. **Multi-value:** More than one attribute value is denoted, such as multiple phone numbers for a person.



Single-value: Just one attribute value. The types can be combined, such as: simple single-value attributes or composite multi-value attributes.

iii. Cardinality

Defines the numerical attributes of the relationship between two entities or entity sets. The three main cardinal relationships are one-to-one, one-to-many, and many-many.

- a. **Cardinality views:** Cardinality can be shown as look-across or same-side, depending on where the symbols are shown.
- b. **Cardinality constraints:** The minimum or maximum numbers that apply to a relationship.

ERD Cardinality

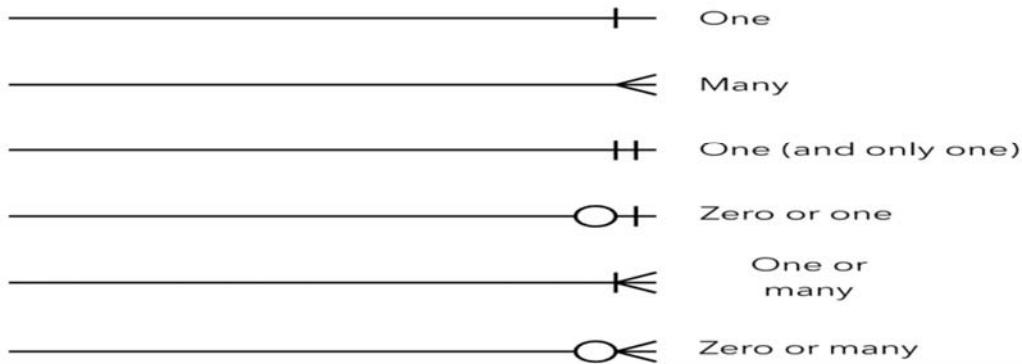


Figure:2.6 Relational symbol

iv. Mapping Natural Language

ER components can be equated to parts of speech, as Peter Chen did. This shows how an ER Diagram compares to a grammar diagram:

- i. Common noun: Entity type. Example: Users.
- ii. Proper noun: Entity. Example: Sally Smith.
- iii. Verb: Relationship type. Example: Enrolls. (Such as in a Flat_id, which would be another entity type.)
- iv. Adjective: Attribute for entity. Example: sophomore.
- v. Adverb: Attribute for relationship. Example: digitally.

The database query language ERROL actually mimics natural language constructs. ERROL is based on reshaped relational algebra (RRA) and works with ER models, capturing their linguistic aspects.

v. ER Diagram

ER diagram represent the who is the entity and who is the attribute and what is the relation between one table to another table. Here we show the admin has the login table and manage the flat, sale and rent table. Admin also manage the user's comments and check the all record. Users provide a comment and search the rent, flat and sale table. The following example of ER diagram is given below,

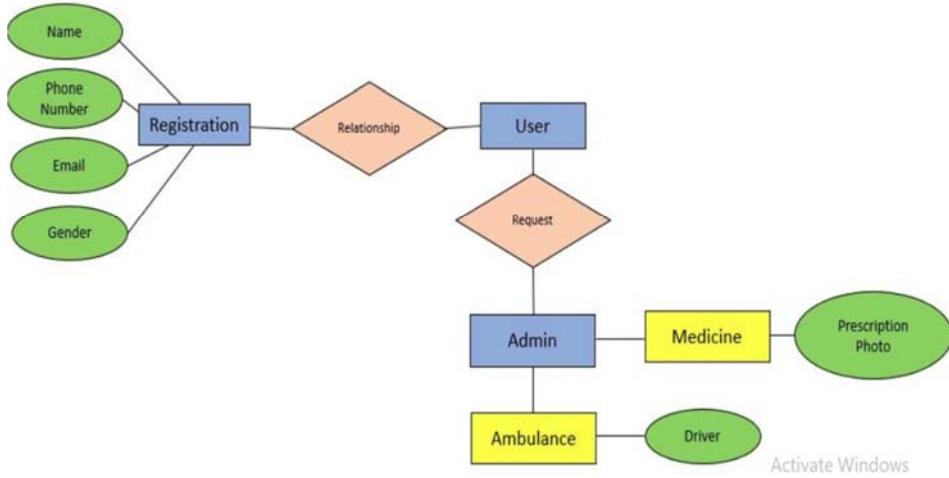


Figure 2.7: ER diagram

2.3.7 Data Flow Diagram (DFD)

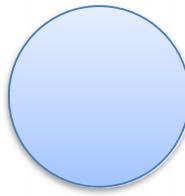
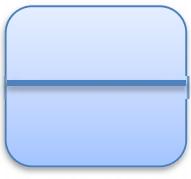
A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination. Data flowcharts can range from simple, even hand-drawn process overviews, to in-depth, multi-level DFDs that dig progressively deeper into how the data is handled. They can be used to analyze an existing system or model a new one. Like all the best diagrams and charts, a DFD can often visually “say” things that would be hard to explain in words, and they work for both technical and nontechnical audiences, from developer to CEO. That’s why DFDs remain so popular after all these years. While they work well for data flow software and systems, they are less applicable nowadays to visualizing interactive, real-time or database-oriented software or systems.

2.3.7.1 Symbols and Notations Used in DFDs

One main difference in their symbols is that Yourdon-Coad and Yourdon-DeMarco use circles for processes, while Gane and Sarson use rectangles with rounded corners, sometimes called lozenges. There are other symbol variations in use as well, so the important thing to keep in mind is to be clear and consistent in the shapes and notations you use to communicate and collaborate with others. Using any convention’s DFD rules or guidelines, the symbols depict the four components of data flow diagrams.

- i. **External entity:** an outside system that sends or receives data, communicating with the system being diagrammed. They are the sources and destinations of information entering or leaving the system. They might be an outside organization or person, a computer system or a business system. They are also known as terminators, sources and sinks or actors. They are typically drawn on the edges of the diagram.
- ii. **Process:** any process that changes the data, producing an output. It might perform computations, or sort data based on logic, or direct the data flow based on business rules. A short label is used to describe the process, such as “Submit payment”.
- iii. **Data store:** files or repositories that hold information for later use, such as a database table or a membership form. Each data store receives a simple label, such as “Orders.”
- iv. **Data flow:** the route that data takes between the external entities, processes and data stores. It portrays the interface between the other components and is shown with arrows, typically labeled with a short data name, like “Billing details”.

Here is a comprehensive look at diagram symbols and notations and how they're used.

<u>Notation</u>	<u>Yourdon and Coad</u>	<u>Gane and Sarson</u>
External entity		
Process		
Data store		
Data flow		

2.3.7.2 DFD Rules and Tips

- i. Each process should have at least one input and an output.
- ii. Each data store should have at least one data flow in and one data flow out.
- iii. Data stored in a system must go through a process.
- iv. All processes in a DFD go to another process or a data store.

2.3.7.3 DFD Levels and Layers: From Context Diagrams to Pseudo Code

A data flow diagram can dive into progressively more detail by using levels and layers, zeroing in on a particular piece. DFD levels are numbered 0, 1 or 2, and occasionally go to even Level 3 or beyond. The necessary level of detail depends on the scope of what you are trying to accomplish.

- i. DFD Level 0 is also called a Context Diagram. It's a basic overview of the whole system or process being analyzed or modeled. It's designed to be an at-a-glance view, showing the system as a single high-level process, with its relationship to external entities. A wide audience, including stakeholders, business analysts, data analysts and developers, should easily understand it.
- ii. DFD Level 1 provides a more detailed breakout of pieces of the Context Level Diagram. You will highlight the main functions carried out by the system, as you break down the high-level process of the Context Diagram into its sub processes.
- iii. DFD Level 2 then goes one-step deeper into parts of Level 1. It may require more text to reach the necessary level of detail about the system's functioning.
- iv. Progression to Levels 3, 4 and beyond is possible, but going beyond Level 3 is uncommon. Doing so can create complexity that makes it difficult to communicate, compare or model effectively.

Using DFD layers, the cascading levels can be nested directly in the diagram, providing a cleaner look with easy access to the deeper dive. By becoming sufficiently detailed in the DFD, developers and designers can use it to write pseudo code, which is a combination of English and the coding language. Pseudo code facilitates the development of the actual code.

2.3.7.4 Examples of How DFDs can be Used

Data flow diagrams are well suited for analysis or modeling of various types of systems in different fields.

- i. **DFD in software engineering:** This is where data flow diagrams got their main start in the 1970s. DFDs can provide a focused approach to technical development, in which more research is done up front to get to coding.
- ii. **DFD in business analysis:** Business analysts use DFDs to analyze existing systems and find inefficiencies. Diagramming the process can uncover steps that might otherwise be missed or not fully understood.
- iii. **DFD in business process re-engineering:** DFDs can be used to model a better, more efficient flow of data through a business process. BPR was pioneered in the 1990s to help organizations cut operational costs, improve customer service and better compete in the market.
- iv. **DFD in agile development:** DFDs can be used to visualize and understand business and technical requirements and plan the next steps. They can be a simple yet powerful tool for communication and collaboration to focus rapid development.
- v. **DFD in system structures:** Any system or process can be analyzed in progressive detail to improve it, on both a technical and non-technical basis.

The data flow diagram, the circle is representing to the process and the rectangle represents the data storage. Here the figure left rectangle Admin where he/she publish a new project, read write the project information, show the content details and edit the information. The users can show the all post and search a property and message.

The example of following DFD diagram:

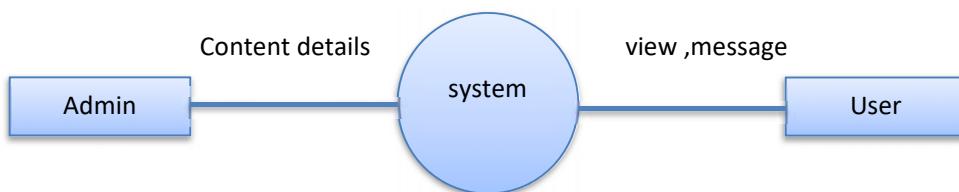


Figure : DFD diagram

2.3.8 Conclusions

Bachao is very necessary thing for people after analyzing the existing system and the problem faced by people that old system, we try to make such a system that we help people to find an easy way for the users. For saving time and easily access to this application. “Bachao” is also user friendly that everyone can use the system with their immature knowledge.

CHAPTER 3

PROPOSED MODEL

3.1 Introduction

As we mention in the chapter 2, that is the manual system do not work properly. That's why we need a new system that to reduce the problem of manual system. For this reason, we proposed a new system which name is "Emergency Ambulance System". Our proposed solution "Emergency Ambulance System" to make a truly online system to have met with online service facilities, all manual process has been automated through this system. A new system is proposed which is processed through computers. The system is operated by the users and Admin. Admin manage the list of the whole system, edited booking list, update bookilng list and delete boking list. Being web based makes this system available everywhere through internet and that overcomes the issue of the user requirements. The chapter is about the proposed system design. It will show how the system is designed, how the database is designed, which database is connected to which one. The chapter also contains implementation. In implementation flow chart and various kinds of code are presented.

3.2 Overview of Proposed System

The "Emergency Ambulance System" is a web- based application structured on PHP, MYSQL for providing better service and easiest access to Services and by using this system any institution can complete registration with schedule easily. This project is used by users,

- i Admin
- ii All users

The system includes the entities as their admin. Only few members, who called admin, are able to control that system. Update any system information such as upload a new Project, view all project, view selected users, view all feedback list, delete a booking list information, update a project information etc. There is no involvement of any user other than admin to update the core information due to security purpose.

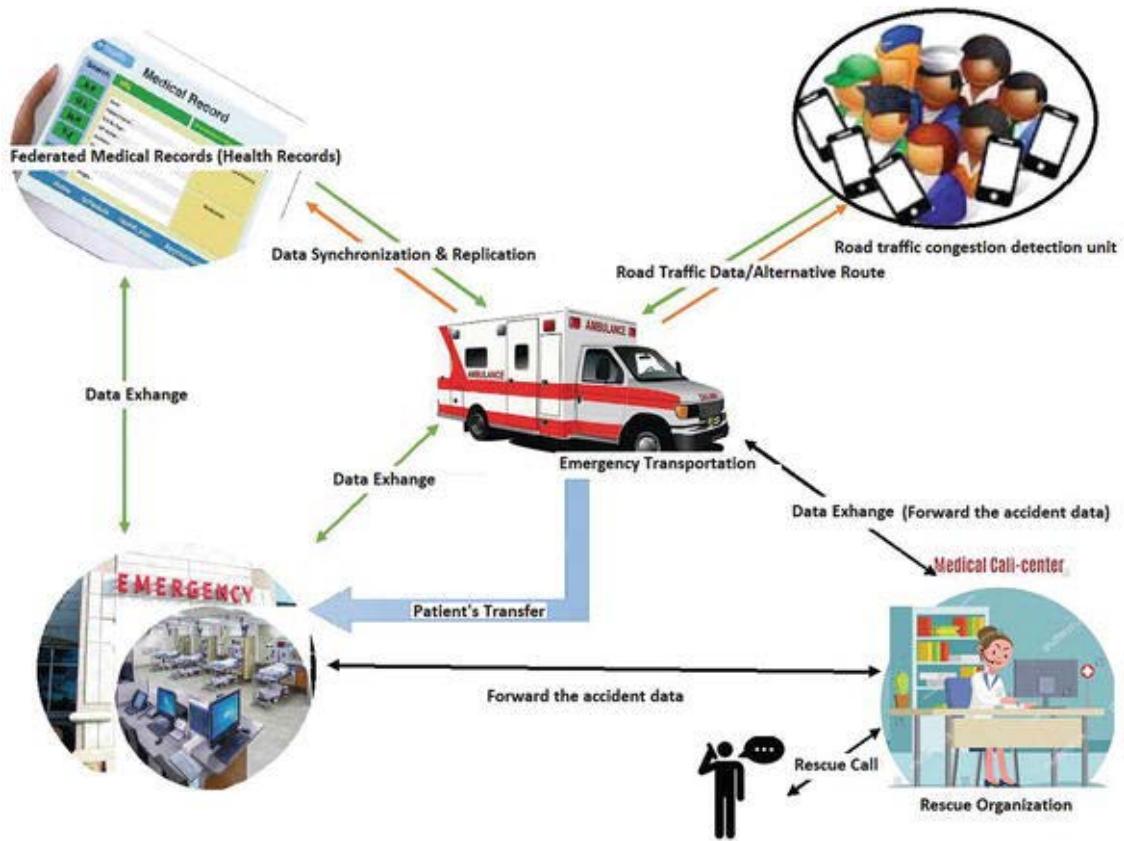


Figure 3.1: Emergency Ambulance System

The user, all types of users can show the all ambulance list, search for ambulance and also they call for an ambulance or contact the admin through the registration. Admin can add information of their own. The admin searches the booking lists of ambulance.

3.2.1 Features

The following features of our proposed system which name is “Emergency Ambulance System ” are given below.

- i. Creating and changing issue at ease.
- ii. It contains better storage capacity.
- iii. Works become very speedy.
- iv. Decrease the load of the user involved in existing manual system.

- v. Well-designed reports.
- vi. Easy and fast retrieval of information.
- vii. Accuracy in work.

3.3 Feasibility Study

A feasibility study is a study that includes the analysis of the software if it is cost effective from the economic view, if it can fulfill the requirement technically, and if it is adaptable in the required environment. It also condiments the groundwork and determine whether the project should be taken or not. Finally, the net result will be rough plane for proceeding with the project. The probability the framework will be helpful to the association. The principle target of the practicality ponder is to test the technical, operational and economical attainability for including new modules and troubleshooting old running framework. All frameworks are practical in the event that they are boundless assets and vast time [18].



Figure 3.2: Function of feasibility study

3.3.1 Objective of feasibility study

A feasibility study evaluates the project's potential for success. So before start to design and develop a system feasibility study is very much important. From the feasibility study of the project, we have identified four fundamental criteria. As a feasible project complete successfully, the project will complete successfully [18].

The four dimensions are:

- i. Technical feasibility
- ii. Economic feasibility
- iii. Operational feasibility
- iv. Schedule feasibility

i. Operational Feasibility

Operational feasibility assesses the extent to which the required software performs a series of steps to solve business problems and user requirements. This feasibility is dependent on human resources (software development team) and involves visualizing whether the software will operate after it is developed and be operative once it is installed. Operational feasibility is concerned with, how the user will accept the software. If the software does not meet the user expectation, then the user might not use the software. It is dependent on human resources available for the project and involves projecting whether the system will be used if it is developed and implemented. It is a measure of how well a proposed system solves the problems. And it takes advantage of the opportunities identified during scope definition and how it satisfies the requirements identified in the requirements analysis phase of system development. The system we developed, we tried our best to make it in such a way, and users of all level can easily use the software. Proposed ventures are useful just on the off chance that they can be transformed out into data framework. That will meet the association's working necessities. Operational possibility parts of the venture are to be taken as an imperative piece of the venture usage. A portion of the vital issues raised are to test the operational livability of a venture incorporates the accompanying

- i. Is there enough help for the administration from the users?
- ii. Will the framework be utilized and work appropriately in the event that it is being produced and actualized?
- iii. Will there be any resistance from the user that will undermine the conceivable application benefits?

ii. Economic Feasibility

Economic feasibility determines whether the required software is capable of generating financial gains for an organization. It involves the cost incurred on the software development team, estimated cost of hardware and software, cost of performing feasibility study, and so on.

For this, it is essential to consider expenses made on purchases (such as hardware purchase) and activities required to carry out software development. In addition, it is necessary to consider the benefits that can be achieved by developing the software. Software is said to be economically feasible if it focuses on the issues listed below. A system request is economically feasible if the projected benefits of the proposed system outweigh the estimated cost involved in developing, installing and operating it. To determine economic feasibility, we ascertain the following:

- i. The system is economic feasible in the sense that users need not to go to real estate company.
- ii. No special hardware is needed. So, Estimate the cost of needed equipment, the hardware that will be needed to develop the system. For example: need of a personal computer.
- iii. Estimate the cost of purchasing the necessary software.
- iv. Estimate the benefits that will result from the proposed system. Economic feasibility is usually answered from cost/benefit analysis. The purpose of cost estimation helps to classify what the system is going to do.

iii. Schedule Feasibility

Schedule feasibility defines the degree to which a deadline for a strategy, plan, project or process is realistic and achievable. A project will fail if it takes too long to be completed before it is useful. Typically, this means estimating how long the system will take to develop, and if it can be completed in a given time period using some methods like payback period. Schedule feasibility is a measure of how reasonable the project timetable is based on given information the system will perform given tasks. Planning a project strategy and building a project schedule to

- i. Complete project within time and budget.
- ii. Resource management system.
- iii. Increase team productivity.
- iv. Increase project success rate.
- v. Realize significant time and resource savings.

We tried to complete the software within time limit. And almost we can do it. The proposed system will easily be accessible and it will be well organized and delivered the right information in the right place.

3.4 Requirements Analysis

It is a structured document detailing the descriptions of the system's functions, services and operational constraints. During this stage of research, more technical information and requirements are gathered about the proposed system. System Requirement Analysis: for any software development, the initial phase is to conduct a demand analysis. Demand analysis is the process of discovery, refinement, modeling, specification and review. The process is directly related to the quality of the software and subsequently studies significant impacts on the design and implementation. For this analysis, functional requirements and technical requirements are analyzed [19].

3.4.1 Requirements Specification

After analyzing the data collected, we formulated a number of requirements namely user requirements, system hardware and software attribute. These were grouped as user, functional, non-functional and system requirements.

i. User Requirements

During data collection, we investigated and found out how the current system operates, not only that but also tried out which problems are faced and how best they can be settled. The users described some of the basic requirements of the system this includes search the admin can be the uploaded projects and searched by select the price, locations and area etc. Admin also update and change an upload project. The user can show the all project and different search in the upload project list.

ii. Functional & Non-Functional

In the proposed project “Emergency Ambulance System” we described two types of requirements. Such as-

- i. Non-Functional Requirement
- ii. Functional Requirement

Non-Functional Requirement:

Non-functional requirement is essentially specifies how the system has behave and that it is a constraint upon the systems behavior. Non-functional requirements are vital to the success of software systems. If they are not properly addressed, undesirable results occur such as unsatisfied users, developers, and clients, and schedule and budget overruns to correct the software that was developed without the nonfunctional requirements in mind.

It describes the attributes of the system [19].

I. Efficiency

A system has to be effective and efficient for the highest utility to the user of the system. Broadly speaking, the effectiveness is a measure of the goodness of the output, while the efficiency is a measure of the productivity, i.e., the measure of the output against the input.

II. Reusability

Reusability is the use of existing assets in some form within the software product development process. The system can be reused in any organization or site of the same group. The ability to reuse relies in an essential way on the ability to build larger things from smaller parts, and being able to identify commonalities among those parts. Reusability is often a required characteristic of platform software. Reusability brings several aspects to software development that does not need to be considered when reusability is not required.

III. Integrity

A system's state where its intended functions are being performed without degradation or being impaired by other changes or disruptions to its environments. For example: In our system only system administrator has rights to access the database, not every user can access all the information. Each user will be having rights to access of the user interface.

IV. Availability

The system should be available at all times. That means any user can access the system anytime from their browser. A customer friendly system which is in access of people around the world should work 24 hours. Incase of a hardware or database failure a replacement page will be shown. Our system ‘Property Management System’ is available for user to access 24 hours in a day.

V. Delivery

The whole system is expected to be completed in timely.

3.5 System Architecture

Systems Architecture is a generic discipline to handle objects (existing or to be created) called "systems", in a way that supports reasoning about the structural properties of these objects. It is a response to the conceptual and practical difficulties of the description and the design of complex systems. In figure below shows the proposed system architecture. It shows the users and admin communicate with the system. Users only show the all upload project and admin access all the sector in the system [20].

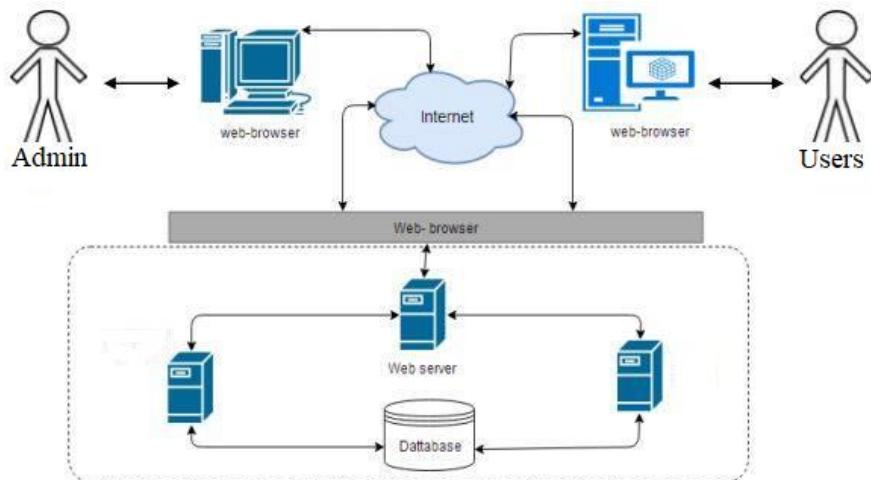


Figure 3.3: Basic system architecture

Here the user browses and search the ambulance and the admin panel manage all the access control and moderate the upload projects. The users get access to appointment material from Internet through a web browser. The 2-tier architecture gets connected with the first-tier architecture for

data exchange by means of web service. The 2-tier architecture values the use of a web server to connect to the Internet by handling all HTTP request completely for the static contexts, like images and files. It retorts to user's request through HTTP protocol, like granting back pages of HTML code. In the event the HTTP inquiry is to impart patient appointment reservation and scheduling service, the web server will forward the dynamic reply to a different server-side application situated at the application server to apply a technique to process the inquiry. The consequent feedback of application server will be reformed to HTML format from web server and will be advertised in the regulated HTML Web Page format.

3.6 System Design

In this section the design of the system will be described step by step. Systems analysis is the study of sets of interacting entities. System analysis is the process of gathering and interpreting facts, diagnosing problems and using the information to recommend improvements on the system. System analysis is a problem-solving activity that requires intensive communication between the system users and system developers. System Design helps in specifying hardware and system requirements and also helps in defining overall system architecture [21].

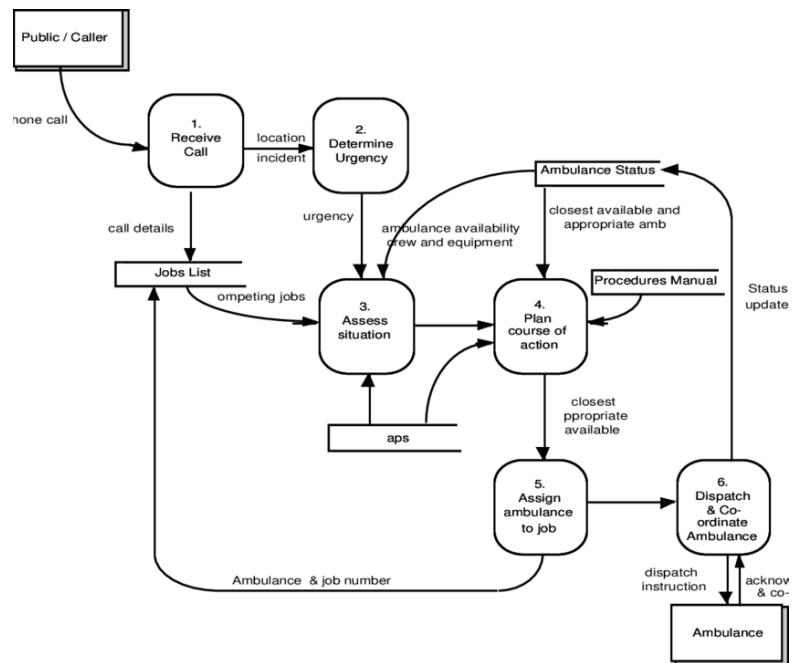


Figure 3.4: System function structure

3.6.1 Methodology

In this section we use waterfall model to develop our project which name is “Emergency Ambulance System”. Various inconsistencies and mismanagement of this project are detected after the case study and our findings. By analyzing the finding and the demand of people of several categories, we have tried to remove those inconsistencies and security in our system. Based on our findings and report we will implement the following functionalities to ablate drawback of existing system.

3.6.1.1 Phases of Water-fall Model

There are 7 typical phases identified in Waterfall model and they are followed one by another in sequence [22].

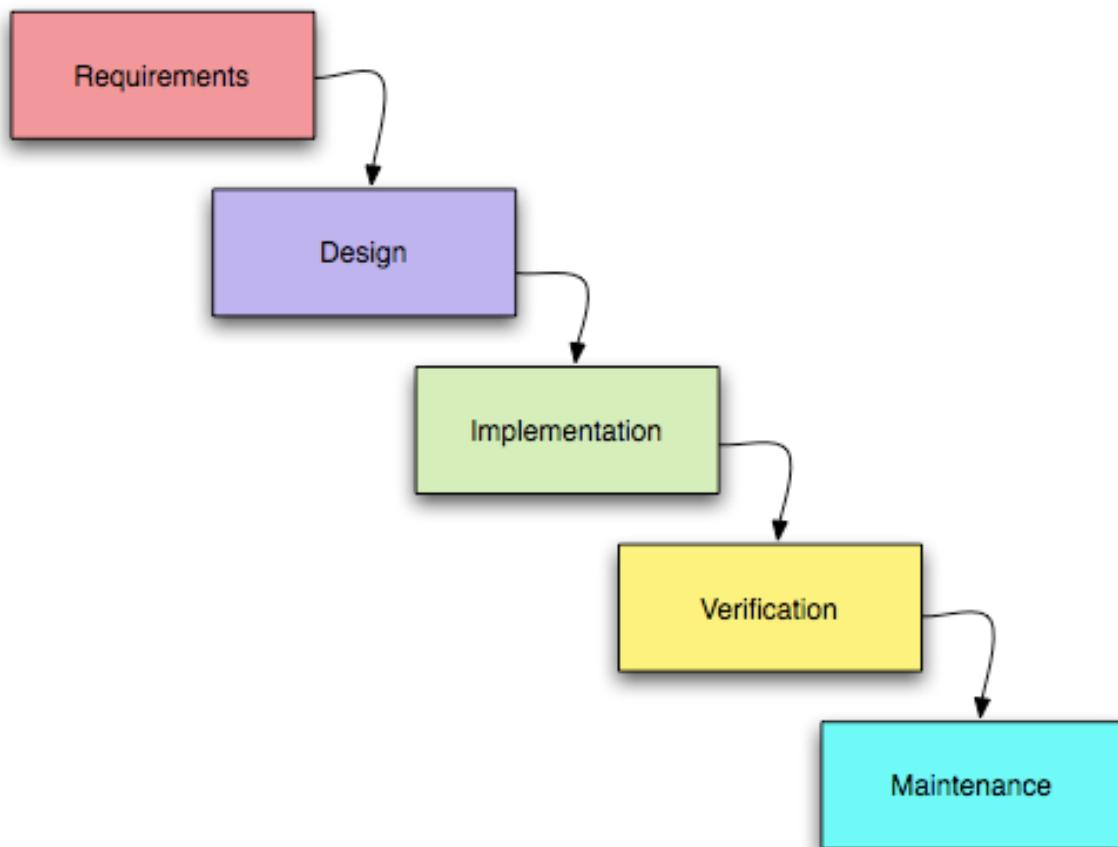


Figure 3.5: Phases of water-fall model

- i. **Requirement Specification:** Firstly, specify the requirement which is suitable for our project. All possible requirements of the system to be developed are captured in this phase and documented in a requirement specification document.
- ii. **System Design:** The requirement specifications from first phase are studied in this phase and system design is prepared. System Design helps in specifying hardware and system requirements and also helps in defining overall system architecture.
- iii. **Implementation:** With inputs from system design, the system is first developed in small programs called units, which are integrated in the next phase. Each unit is developed and tested for its functionality which is referred to as Unit Testing.
- iv. **Integration and Testing:** All the units developed in the implementation phase are integrated into a system after testing of each unit. Post integration the entire system is tested for any faults and failures.
- v. **Deployment of system:** Once the functional and non-functional testing is done, the product is deployed in the customer environment or released into the market.
- vi. **Maintenance:** There are some issues which come up in the client environment. To fix those issues patches are released. Also, to enhance the product some better versions are released. Maintenance is done to deliver these changes in the customer environment.

All these phases are cascaded to each other in which progress is seen as flowing steadily downwards (like a waterfall) through the phases. The next phase is started only after the defined set of goals are achieved for previous phase and it is signed off, so the name "Waterfall Model".

3.6.1.2 Advantages of Water-fall Model

- i. Waterfall model is simple to implement and also the amount of resources required for it are minimal.
- ii. In this model, output is generated after each stage (as seen before), therefore it has high visibility. The client and project manager get a feel that there is considerable progress. Here it is important to note that in any project psychological factors also play an important role.
- iii. Project management, both at internal level and client's level, is easy again because of visible outputs after each phase. Deadlines can be set for the completion of each phase and evaluation can be done from time to time, to check if project is going as per milestones.

- iv. This methodology is significantly better than the haphazard approach to develop software. It provides a template into which methods of analysis, design, coding, testing and maintenance can be placed.
- v. This methodology is preferred in projects where quality is more important as compared schedule of cost [22].

3.6.1.3 Why We use Water-fall Model for This Project

- i. The model is used only when the requirements are very well-known, clear and fixed.
- ii. The project is simple.
- iii. The project is complicated, but you have the expertise to deliver it.
- iv. It is all we know and you have no support for change.
- v. The upfront investment is not risky to make.
- vi. We focus our system performance measures on delivery date and budget.

3.6.2 Entity Relationship Diagram (E-R diagram)

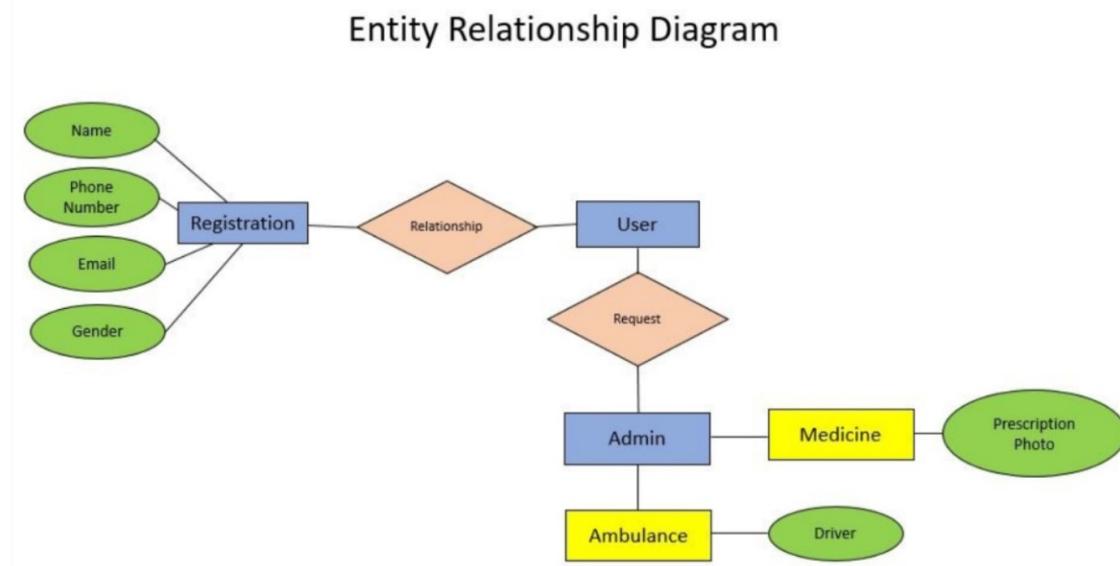


Figure 3.6: E-R Diagram for Emergency Ambulance System

An entity-relationship (ER) diagram is a specialized graphic that illustrates their relationships between entities in a database. ER diagrams often use symbols to represent three different types of information. Boxes are commonly used to represent entities. Diamonds are normally used to

represent relationships and ovals are used to represent attributes. This are describing in details in the chapter 2. ER modeling helps to analyze data requirements systematically to produce a well-designed database. This E-R diagram defines the database design of Emergency Ambulance System . The rectangle denotes the entity (log in, Booking ambulance, booking list, record, user Admin) the diamond denotes the relationship (has, manages, give feedback, search) & the oval shape denotes attribute (All types of attribute –like id, name, email, phone,prescriptions pictures, ambulance list documents, booking list information, location, area etc.). As like as user have some attributes like email, comment. Admin has login and manage add ambulace, update, delete and also manage the feedback and search sections.

3.6.3 Data Flow Diagram

Data flow diagram (DFD) represents the flows of data between different processes in a business. It is a graphical technique that depicts information flow and the transforms that are applied as data move form input to output. This are describing in details in the chapter 2 [23].

3.6.3.1 Context Diagram

The following figure describes about flow of data. It belongs to the user is to show the all uploaded project and search the property. Admin panel control the system every time. Admin can add a new ambulance, edit and delete the ambulance list. This is the main them of the context diagram [24].

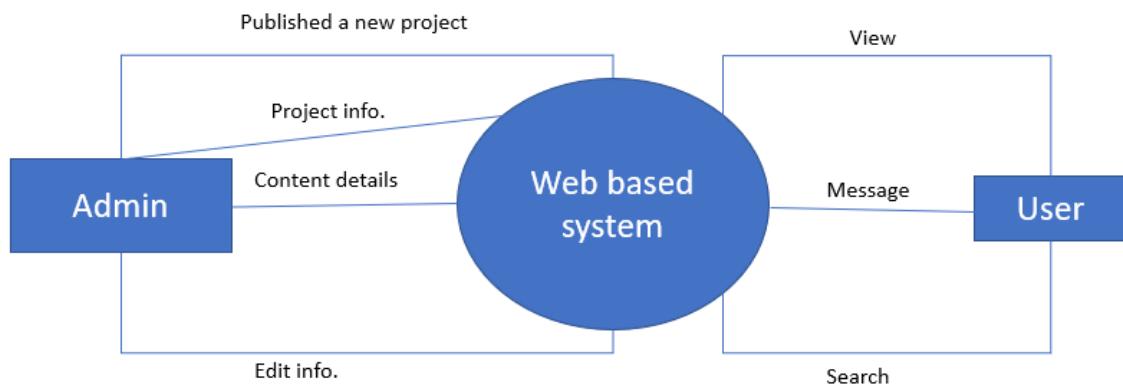


Figure 3.7: DFD context diagram

3.6.3.2 DFD Diagram Level 0

This is the level 0 diagram which describes more elaborately than the context diagram. The users can search all the uploaded list of ambulance and provide the valuable opinions. On the other hand, Admin can upload a new and modified project that show the user interface, edit a project, search a specific project and manage all the system.

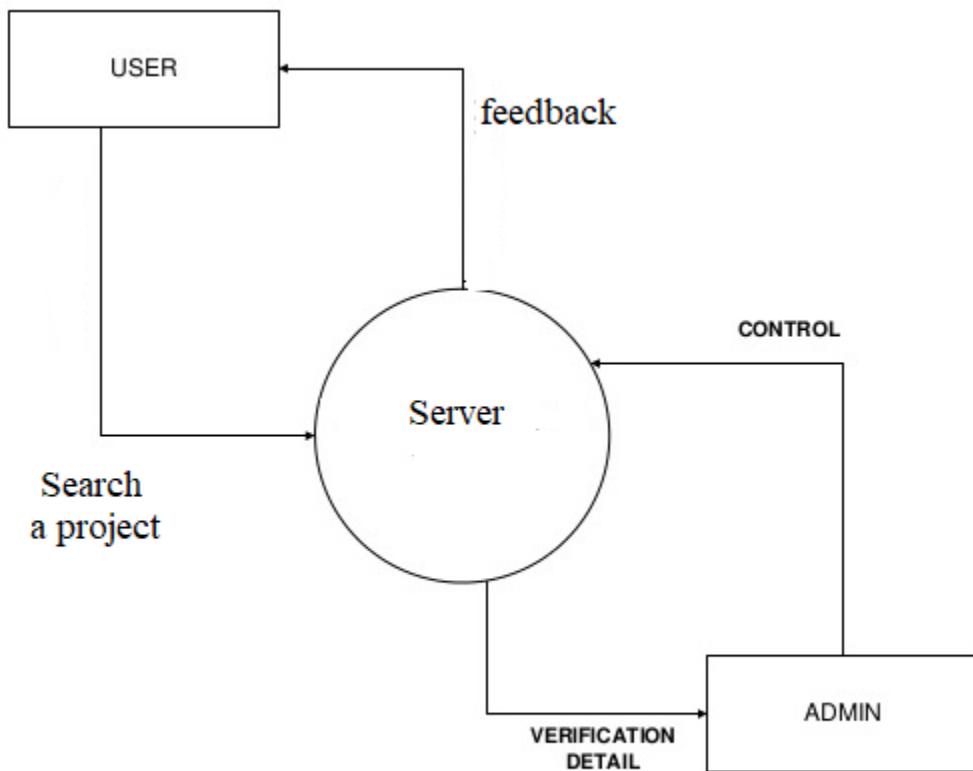


Figure 3.8: DFD Level 0

3.6.5 Use Case Diagram

A use case model describes what a system does without describing how the system does it; that is, it is a logical model of the system. The use case model reflects the view of the system from the perspective of a user outside of the system [25].

i. Use Case Diagram

The following figure describes about the use-case diagram of user, that means which task can be done by users. Admin can also edit his profile like – change pasward, upload a project, search or view specific project, edit a project and feedback from users. Onthe other hand the user only search or view specific project and feedback a project.

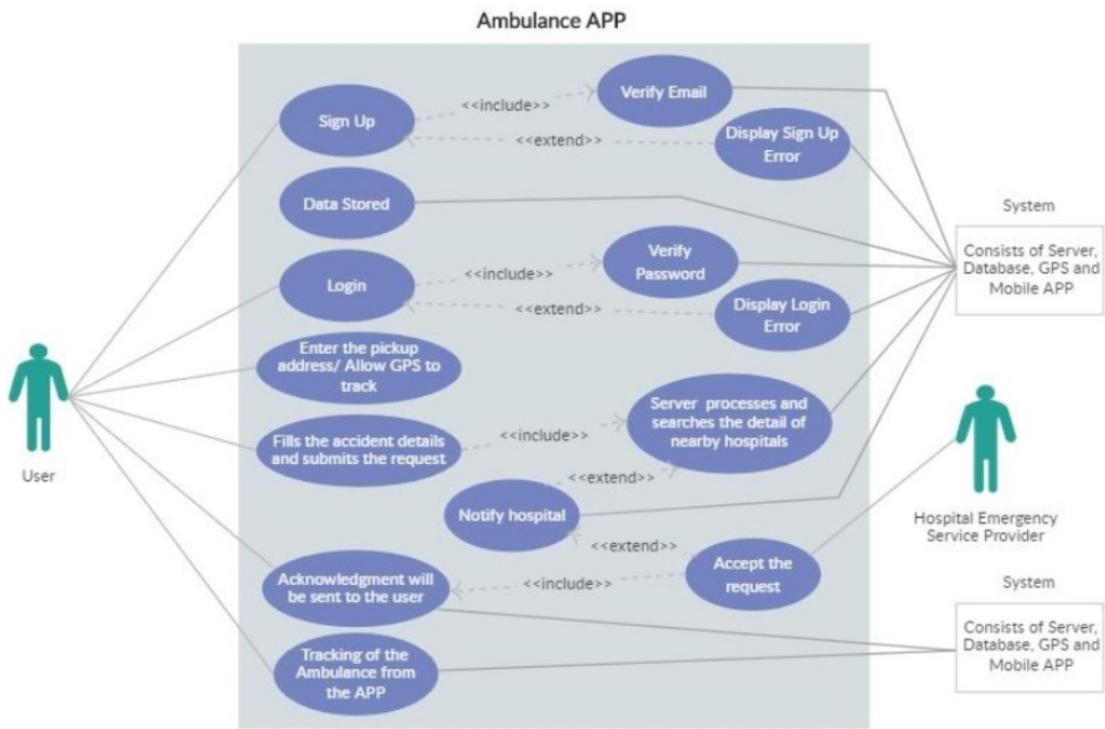


Figure 3.9: Use Case diagram

ii. View admin

This section describes the admin details for student

- i. After login the admin can view the admin panel.
- ii. Admin add, edit, manage all uploading booking list.

iii. User

This section describe user,

- i. User only can see the all upload booking list.
- ii. Search an Ambulnace.
- iii. Booking an amblance.

iv. Feedback about the services.

iv. Login

This section describes the login process for admin.

- i. In this section only admin can login.
- ii. Users need to login for booking ambulance.

3.7 Database Design

This section will described how the system's database is degined. Database design is an important part of software design. The database design is directly related to the merits of the program to achieve the efficiency and simplicity of data access [26].

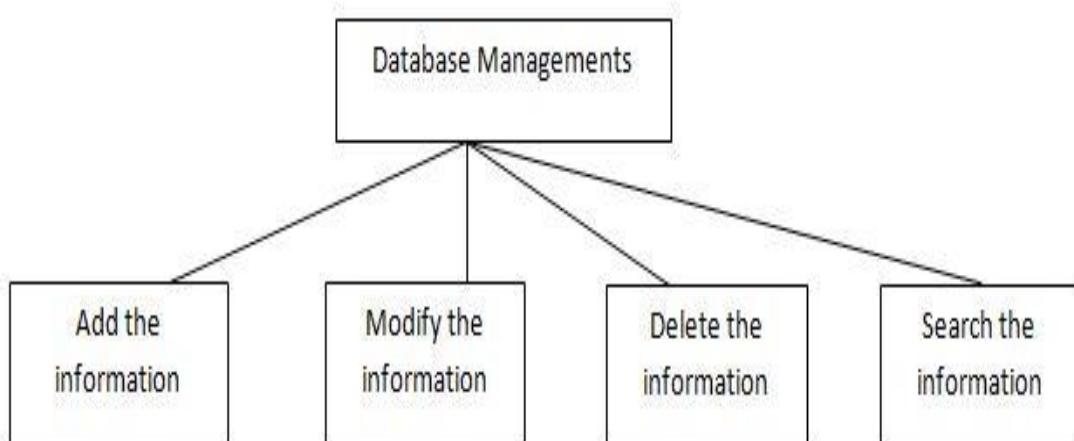


Figure 3.10: Basic of database design

3.7.1 Description of Data Objects in Database Table

The following table 3.1 contains the add ambulance table where the attributes are amb_id, ambulance_number, driver_name, ambulance_type. Here the amb_id is the primary key. The following table 3.1 is given below,

	<input type="checkbox"/>	amb_id	ambulance_number	driver_name	dr_p_nu	ambulance_type	ambulance_area	am_discrip	amb_photo	district_name
	<input type="checkbox"/>	1	456825	Abdur Razzak	0175963552	high class	shamoli	it is a high class ambulance.	img/ambulance6.jpg	coxs bazar
	<input type="checkbox"/>	2	45852-d	sabbir	01985466552	2nd class	songshod	valo na	img/ambulance6.jpg	Borishal
	<input type="checkbox"/>	3	54564	tomal	01255665568	1st	dhaka	well	img/ambulance9.jpg	dhaka
	<input type="checkbox"/>	5	dha-4456	micthal khalid	012546895	frist class	shamoli	good	img/ambulance12.jpg	dhaka
	<input type="checkbox"/>	6	cha-45863	jhonson	0125864823	2nd class	hatirjheel	good	img/ambulance10.jpg	sirajgonj
	<input type="checkbox"/>	7	453453	saim	03241435456	icu	gazipur	sdfghjlhgfh	img/ambulance15.jpg	jamalpur

Check All With selected: Change Delete Export

Table 3.1: Data object in database table for add ambulance

The table 3.2 contains the booking information like –booking_id, ambulance_type, pickup area, pick time, dropoff, name, phone number, email. Where the book_id is the primary key.

Here is the following table 3.2 is given below,

	<input type="checkbox"/>	book_id	ambulance_type	pickup	dropoff	pickup_time	dropoff_time	name	mobile	email	patient_location	emergency_type
	<input type="checkbox"/>	22	non ac	ullapara	nobogram	00:00:10.3	00:00:12.0	murad	01556332545	sabbir@gmail.com	mohammadpur	Accident
	<input type="checkbox"/>	23	ac	mohammadpur	nobogram	10:30	12:30	sabbir	01556331358	rayhan@gmail.com	dhaka	Accident
	<input type="checkbox"/>	24	freezer	mohammadpur	hatirjhil	10:20	16:30	mithun	01556331359	admin@gmail.com	mohammadpur	Accident
	<input type="checkbox"/>	25	ac	ullapara	nobogram	18:06	18:06	sabbir	01556332588	teacher@gmail.com	mohammadpur	Accident
	<input type="checkbox"/>	31	icu	dhanmondi	bonani	10:20	15:30	sabbir bi	0198549649478	samiul@gmail.com	hospital	Others
	<input type="checkbox"/>	32	icu	12	01	00:10	04:30	sunam	01858085086	samiul@gmail.com	mohammadpur	Heart attack

Check All With selected: Change Delete Export

Table 3.2: Data object in database table for ambulance booking information

The table 3.3 contains the state information. The attribute of the tables is reg id, names, address, city. Here the reg id is the primary key. The following table 3.3 is given below,

	<input type="checkbox"/>	reg_id	first_name	last_name	address	city	state	zip	nid	age	gender	date	phone	email	blood	photo
	<input type="checkbox"/>	2	samiul	siddique	nobogram	dhaka	125	1207	546453434354354354	15	male	2017-02-22	016958548512	samiul@gmail.com	AB+	img/7.jpg
	<input type="checkbox"/>	4	abdur	razzak	lalmirihat	hatibanda	hat	17896	01255668952168623526	25	male	1995-12-01	01622150390	razzak@gmail.com	B+	img/20171016
	<input type="checkbox"/>	7	sdg	sdf	fdg	fdg		0	dfg	0	male	0000-00-00	dfg	su@gmail.com	AB+	img/sunam.jpg
	<input type="checkbox"/>	8	sab	sa	dfg	dfg		0	34524352345	34	male	2019-12-05	234	sab@gmail.com	AB+	img/sunam.jpg
	<input type="checkbox"/>	9	pi	pi	gh	gdf		0	324	34	male	2019-12-18	345	pi@gmail.com	AB+	img/df.jpg
	<input type="checkbox"/>	10	Shumsuzzoha	Sunam	house no: 2, road no: 2, Nobodoy housing, adabor d	Dhaka	Mohammadpur	1207	2828487585896	26	male	1994-10-09	+8801858085086	shumssunam15@gmail.com	AB+	img/Homer S wallpaper-978

Table 3.3: Data object in database table for registration information

The table 3.4 contains the order medicine information. Here the attributes are the med_id, med_quantites. med_id is the primary key. The following table 3.4 is given below,

+ Options																
	← T →	▼ med_id	medi1	quant1	medi2	quant2	medi3	quant3	medi4	quant4	name	mobile	email	shipping_loca	time	photo
<input type="checkbox"/>				1 napa	1 emoti	1 cop	1 lol	1 sabbir	01556331358	razzak@gmail.com	mohammadpur	2019-04-29 12:08:20am				
<input type="checkbox"/>				2 napa	1 emoti	1 cop	1 lol	1 rayhan	015554265	razzak@gmail.com	mohammadpur	2019-04-29 09:35:04pm	img/sabbir.jpg			
<input type="checkbox"/>				3 napa	1 emoti	1 cop	1 lol	1 murad	01556331359	razzak@gmail.com	mohammadpur	2019-04-29 11:22:22pm	img/Screenshot_			
<input type="checkbox"/>				4 napa	2 nampi	1 clofenuck	2 civit	1 sabbir ali	0125566581	samiul@gmail.com	kadirabad	2019-04-29 11:39:49pm	img/form_1.png			

↑ Check All With selected:

Table3.4: Data object in database table for order medicine information

3.7.2 Database Schema

The database schema of a database is its structure described in a formal language supported by the database management system. The term "schema" refers to the organization of data as a blueprint of how the database is constructed.

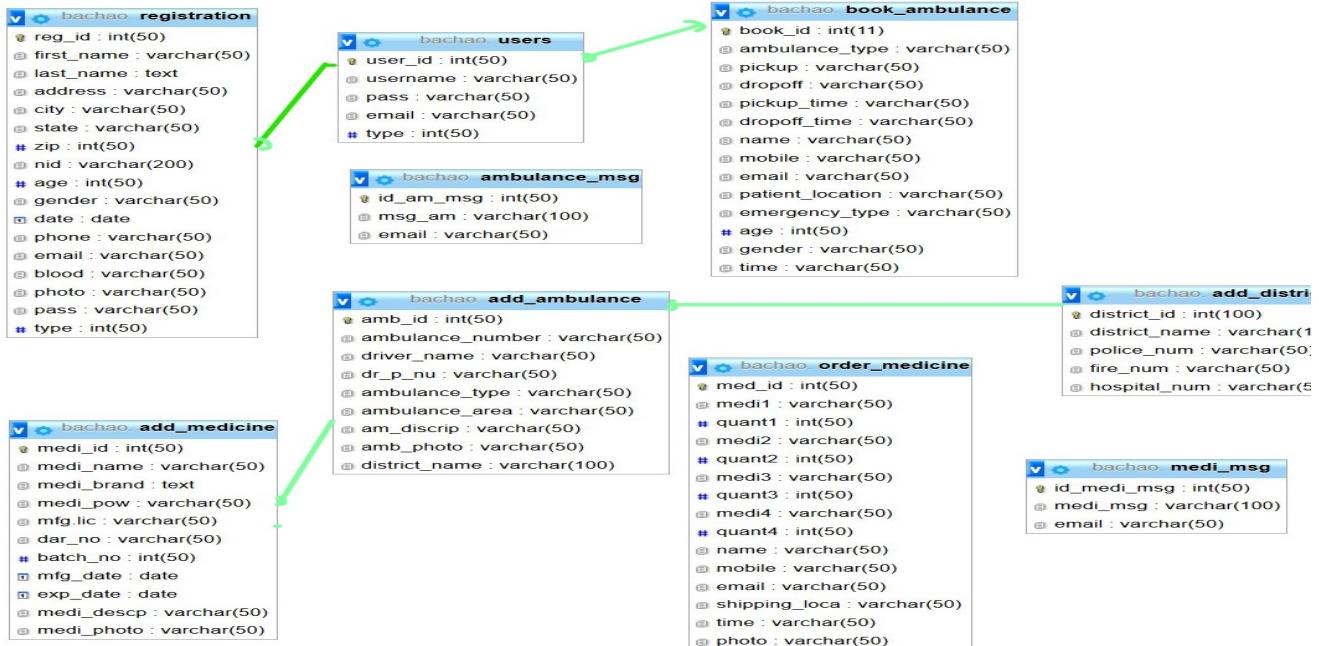


Figure 3.11: Database schema

The following figure describes about the database schema. Database schema means how the database table are connected to each other that means how the database is designed.

In figure 3.13, we see that one database is connected with other. The users table is connected with users and all are connected by admin.

3.8 Implementation

Implementation is the realization of an application or execution of plan, idea, model, design, specification, standard, algorithm or policy. This section describes the project implementation for developing the Online Course Registration System. The project implements PHP, MySQL, and standard HTML and CSS. The project will be capable of running on standard internet web browsers. The details of PHP, MySQL, and standard HTML and CSS are describing in chapter 2.

3.9 Conclusions

A good project depends on good design and good implementation according to the design. This chapter is actually about the system analysis which contains mainly used method to draw up the system procedure through diagrams, flowcharts, database schemas. That means how the system is designed, how the database is designed and implemented the whole system. Various types of system test are also included here with database tables and error handling. This chapter will be able clear the details about our project.

CHAPTER 4

IMPLEMENTATION & EVALUATION

4.1 Introduction

Testing is vital of success in any software. Testing is also carried in two phases. First phase is during the software engineering during the module creation. Second phase is after the completion of software. This is system testing which verifies that the whole set of programs hanged together. This chapter describes the project result or total outcome after developing the emergency ambulance system. We also describes unit testing which is a level of software testing where individual units/ components of software are tested. In this chapter, we also introduce white box testing method, test scenario and test cases. We also analysis the result by entering various input. This part shows all possible better outcomes through necessary test cases of our system. This part must proof that we have built our proposed system properly.

4.1.1 Testing

Testing plays a vital role in the success of the system. System testing makes a logical assumption that if all parts of the system are correct, the goal will be successfully achieved. Once program code has been developed, testing begins. The testing process focuses on the logical internals of the software, ensuring that all statements have been tested, and on the functional externals, that is conducted tests to uncover errors and ensure that defined input will produce actual results that agree with required results.

4.1.2 Objectives of Testing

- 1) Testing is a process of executing a program with the intent of finding the error.
- 2) A good test case is one that has a high probability of finding on unpredictable error.
- 3) A successful test is one that provides solution for unpredictable error.

The Minimum aim of testing process is to identify all defects existing in software product. Software product testing accomplishes a variety of things, but most importantly it measures the

quality of the software that is developed. This view presupposes that there are defects in the software waiting to be discovered and this view is rarely disproves or even dispute.

4.1.3 Testing Plan

Specifications of the product would be related to:

- i) Functions of the system.
- ii) Response criteria
- iii) Volume constraints (no. of users)
- iv) Stability criteria (24 hour)
- v) Database responses (flushing, cleaning)
- vi) Network criteria (network traffic)
- vii) Compatibility (Environment & Browsers)
- viii) User Interface / Friendliness criteria
- ix) Modularity (ability to easily interface)
- x) Security

4.1.4 Testing Strategy

- i) As each module is developed it is tested and if found faultless is integrated in main module.
- ii) If the module is not perfect it is built again.

Each test plan item should have the following specific characteristics:

- i) It should be uniquely identifiable.
- ii) It should be unambiguous.
- iii) It should have well-defined test-data (test parameters)
- iv) It should have well-defined pass/fail criteria for each sub-item and overall-criteria for the pass/fail of the entire test itself.
- v) It should be easy to record.

- vi) It should be easy to demonstrate repeatedly
- vii) To prepare test plans.
- viii) To specify conditions for user acceptance testing.
- ix) To prepare test data for transaction path testing.
- x) To plan user training.

4.1.5 Testing Modology

To be truly robust, distributed applications require more than simple functional testing before release into production. At least one and preferably all of the following types of testing before releasing application to customers should be performed.

- a) Performance Testing
- b) Load Testing
- c) Stress Testing
- d) Endurance Testing

4.1.6 Testing procedure

The testing part forms an important aspect of any System and is vital for success of the system. System testing makes a logical assumption that if all the parts of the system are correct, the goal will be successfully achieved. Philosophy behind testing the system is to find errors & rectify it.

The system test change is transitional one, as it represents the period during which control of the newly developed system passes from the hands of the development team to final users. It is therefore a critical point as it is the last opportunity to check the system before it is being used. The testing stage seeks to ensure following aspects of system from user point of view:

- a) Completeness
- b) Correctness
- c) Reliability

Thus, a testing plan is necessary, as it will aid to maximize the effectiveness of discovering error by early & controlled production of test plans & test specification.

4.2 Result Analysis

This section shows various test results just to insure that the system is working properly.

4.2.1 Unit Testing

Unit testing is a testing technique using which individual modules are tested to determine if there are any issues by the developer himself. A unit test is a programmer-written test for a single piece of functionality in an application. Unit testing is a software testing method by which individual units of source code, sets of one or more computer program modules together with associated control data, usage procedures, and operating procedures, are tested to determine whether they are fit for use. It is performed by using the white box testing method. Preparing the unit test tastes document which is complete with every possible test case, is an important task in Unit Testing activity. It gives an assurance of defect-free Unit at the end of Unit Testing stage. Below are some useful tips:

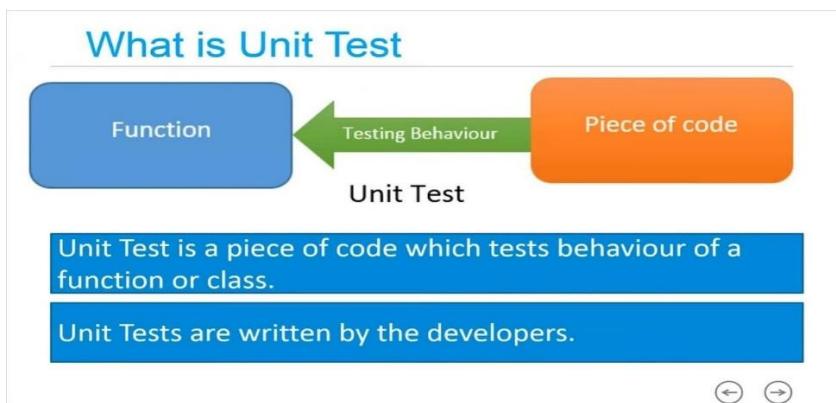


Figure 4.1: Unit Testing

- i. **Input values:** Write test cases for each of the identified inputs (positive & negative) accepted by the Unit.
- ii. **Expected Functionality:** To cover all functionality that is expected to be in the Unit.
- iii. **Output values:** Write test cases, which will produce all types of output values that are expected from the module / unit.
- iv. **Path coverage:** If the Unit has conditional processing those results in various paths, then write test cases to cover each of these paths.

- v. **Abnormal terminations:** Behavior of the Unit in case of abnormal termination should be tested.
- vi. **Error messages:** Check error messages / warnings. These should be short, precise and self-explanatory. They should be properly phrased and free of grammatical mistakes.
- vii. **Screen Layout:** Web page or screen layout must be tested against the requirements. Ensure that pages and screens are consistent and as per requirements.
- viii. If you are testing database application, it is important to make sure that transactions are properly designed and no way inconsistent data gets saved in the database.

4.2.2 White Box Testing

White Box Testing is defined as the testing of a software solution's internal structure, design, and coding. In this type of testing, the code is visible to the tester. It focuses primarily on verifying the flow of inputs and outputs through the application, improving design and usability, strengthening security. White box testing is also known as Clear Box testing, Open Box testing, Structural testing, Transparent Box testing, Code-Based testing, and Glass Box testing. It is usually performed by developers. It is one of two parts of the "Box Testing" approach to software testing. Its counterpart, Black box testing, involves testing from an external or end-user type perspective. On the other hand, White box testing is based on the inner workings of an application and revolves around internal testing.

White box testing involves the testing of the software code for the following:

- i. Internal security holes
- ii. Broken or poorly structured paths in the coding processes
- iii. The flow of specific inputs through the code
- iv. Expected output
- v. The functionality of conditional loops
- vi. Testing of each statement, object, and function on an individual basis

The testing can be done at system, integration and unit levels of software development. One of the basic goals of white box testing is to verify a working flow for an application. It involves testing

a series of predefined inputs against expected or desired outputs so that when a specific input does not result in the expected output, you have encountered a bug.

WHITE BOX TESTING APPROACH

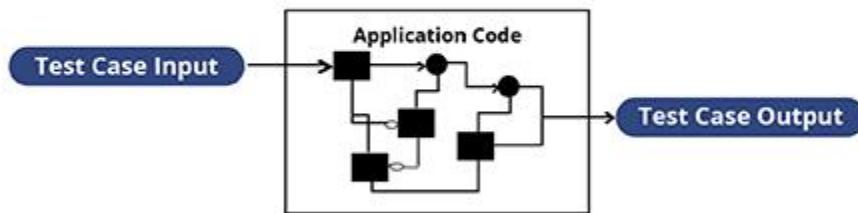


Figure 4.2: White box testing

4.2.3 Test Scenario

A Test Scenario is any functionality that can be tested. It is also called Test Condition or Test Possibility. Test scenario consists of a detailed test procedure. A test scenario has many test cases associated with it. Before executing the test scenario, we need to think of test cases for each scenario.

Table 4.1 shows some possible test scenario.

SL No.	Test Scenario ID	Test Scenario Description
1	TS1.1	Username & Password Match
2	TS1.2	Invalid Username & Password

Table 4.3: Example of test scenario

4.3 Test Cases

A test case is a set of conditions or variables under which a tester will determine whether a system under test satisfies requirements or works correctly. The process of developing test cases can also help find problems in the requirements or design of an application. A test case could simply be a question that you ask of the program. The point of running the test is to gain information, for example whether the program will pass or fail the test. Test cases are the cornerstone of quality assurance where they are developed to verify the quality and behavior of a product.

4.4 Application Outcome

This system is for online buy & sell system. Therefore, its main application is,

- i. Online buying & selling.
- ii. Provide property information
- iii. View property details.
- iv. User can see the property status page.
- v. Approve or cancel request by admin
- vi. View user details

4.5 Conclusions

The system is built such a way that it will be useful and userfriendly to general user. Result analysis give a brief how we execute our overall system through testing, observing, analyzing. This is the proper way to know whether the system is working properly or not. It also means the system provides mainly what kinds of facilities and if it is better and reliable option for people to get online registration through our system. The application of the system also belongs in this part that clear we have created our expected online emergency ambulance system to support people with saving their time and energy [27].

CHAPTER 5

USER MANUAL

5.1 Introduction

The user manual contains all essential information for the user to make full use of the information system. This manual includes a description of the system functions and capabilities, contingencies and alternate modes of operation, and step-by-step procedures for system access and use. A user guide or user's guide, also commonly known as a manual, is a technical communication document intended to give assistance to people using a particular system. User guides are most commonly associated with electronic goods, computer hardware and software. Most user guides contain both a written guide and the associated images. In the case of computer applications, it is usual to include screenshots of the human-machine interface, and hardware manuals often include clear, simplified diagrams. This chapter contains all the hardware and software requirements for using the system and also user manual for buyer and seller. User manual is a directional system of a project. It provides the direction to the users who don't know how to use the software. It denotes which page will come after whichone [28].

5.2 User Interface

The user interface is very important part of the system. A good and user-friendly interface attracts the user toward it. Whereas a bad one makes the user experience bad and they never return to the system several use cases in this system have developed these interfaces to interact with the system.. As we have shown.

- i. **Login Page:** Admin or client need to log in using login id and password.
- ii. **Client Page:** Clients can view their details as well as list of ambulance.
- iii. **Loged in Page:** Every ambulance would be available to this page.
- iv. **Search Page:** The user can search the ambulance using this interface [28].

5.2.1 Admin Profile

Admin profile is profile which is assigned to a super user having full access to the system. Admin module contains Admin Id, name, address, contact no. Admin can view the booking list of ambulance make changes if required, delete list. Check the ambulance status, view,

and manage the client details. Any issue in client's details or in ambulance list just reports to admin.

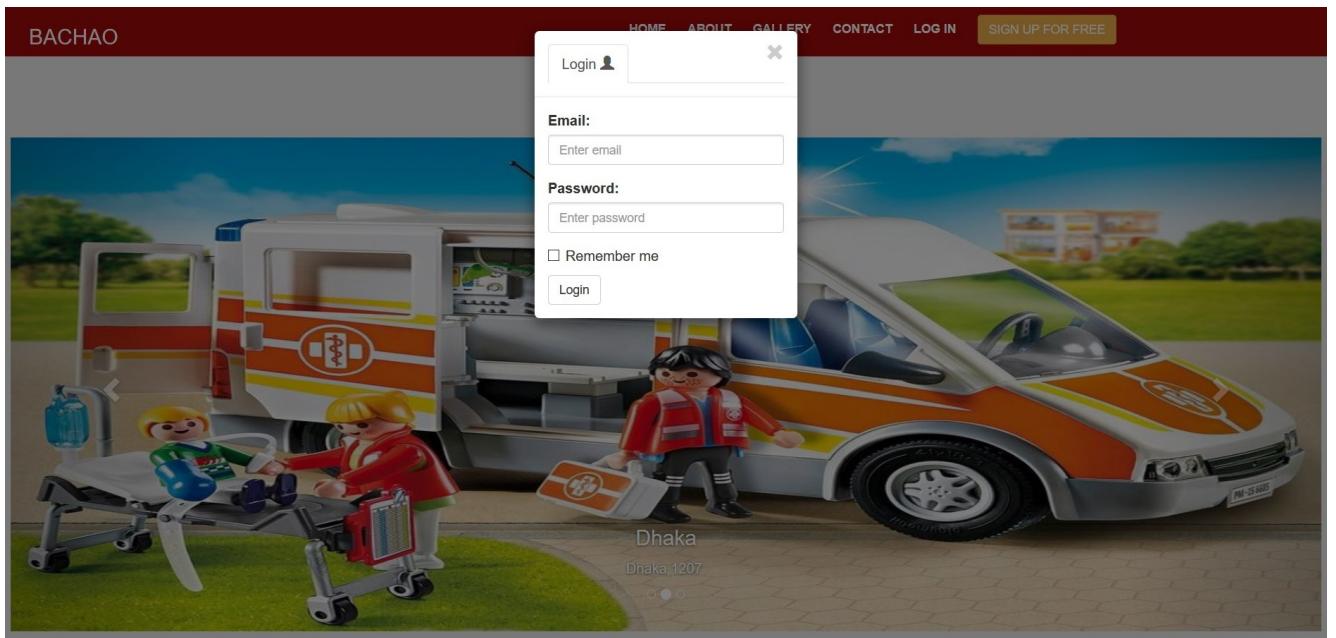


Figure 5.1: Login page

5.2.2 Adding New Ambulance

Admin can add a new ambulance, when a new ambulance is need to be uploaded then that will be provide the admin panel. Admin can check the list of the ambulance and upload the project. In this system the admin is access all the sectors like they can change any information's (area, location, picture, type of ambulance, etc.), if any ambulance rescue lives then the admin panel can disable the ambulance. Admin upload the new ambulance, to select the area, location (road number, house number), picture, structure, city, description, amenities types etc.

The screen sort of this page is given below,

The screenshot shows the Admin dashboard with a sidebar on the left containing links for Home, Add Ambulance, Add Medicine, View Users, View Ambulance, View Medicine, setting, and logout. The main area is titled 'Ambulance Information' and contains fields for Ambulance Number (with placeholder 'Enter ambulance number'), Select District (set to 'jamalpur'), Driver Name (placeholder 'Enter Driver name'), Photo (button 'Browse...' and message 'No file selected.'), Driver phone number (placeholder 'Enter driver number'), Ambulance Type (dropdown set to 'AC'), Ambulance area (placeholder 'Enter ambulance number'), Description (text area), and a 'Submit' button.

ADMIN

user ▾

Home

Add Ambulance

Add Medicine

View Users

View Ambulance

View Medicine

setting

logout

Ambulance Information

Ambulance Number

Enter ambulance number

Select District

jamalpur

Driver Name

Enter Driver name

Photo

Browse... No file selected.

Driver phone number

Enter driver number

Ambulance Type

AC

Ambulance area

Enter ambulance number

Description

Submit

Figure 5.2: Adding New Ambulance

Every time company gets any ambulance. It should be added to the system and the system would track the ambulacne day to day.

Details About Adding new ambulacneis given below:

- i. Client can check all the ambulance list.
- ii. Client can view any specific ambulacne from specific area.
- iii. After Login or entering to the system, User can see all the the details about any ambulance in the list.
- iv. Admin can view all Details related to amblance.
- v. Admin can manage statistical summary.

5.2.3 Home page Status

This is the main home page in our system for the user site. When the user can show the site then they show the screen.

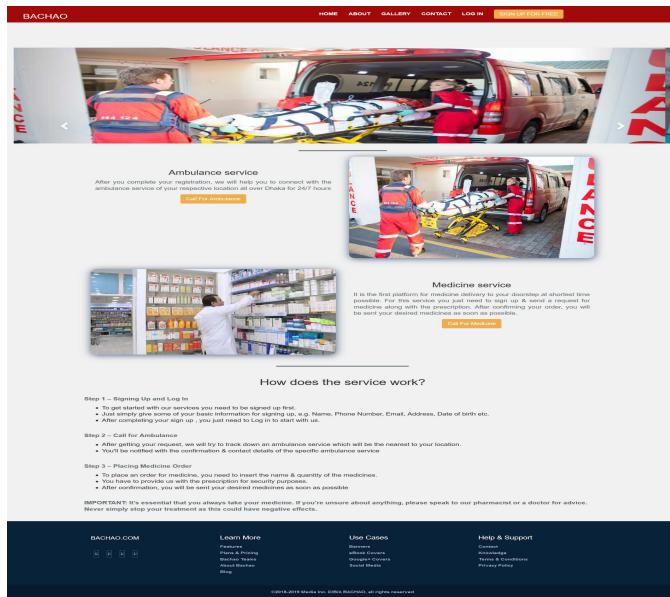


Figure 5.3: Client Home Page.

User can search ambulance here.

- View ambulance list
- Client will have all the confirmation about ambulance.
- Client will see all details about a specific ambulance.

5.2.3 Search Result

There are many ways of searching a ambulance

- Client can search type of ambulance.
- Client can search by area wise.

When a user needs to book ambulance then they can easily to enter the website and book the ambulance

Here is the user search page screenshot is given blew,



Ambulance Information

No.of	District name	Ambulance number	Driver number	Driver name	Ambulance type	Description	Area	photo	more info
1	coxs bazar	456825		Abdur Razzak	0175963552	high class	it is a high class ambulance.	shamoli	details
2	Borishal	45852-d		sabbir	01985466552	2nd class	valo na	songshod	details
3	dhaka	54564		tomal	012556655658	1st	well	dhaka	details
4	dhaka	dha-4456		michal khalid	012546895	frist class	good	shamoli	details
5	sirajgonj	cha-45863		jhonson	0125864823	2nd class	good	hatirheel	details
6	jamalpur	453453		saim	03241435456	icu	sdfghjlhgfh	gazipur	details

Figure-5.4: Searching ambulance by location**5.2.4 Ambulance Details**

Ambulance details hold the data about the ambulance in the location, ambulance type, driver name etc. The ambulance booking list gives an idea about the ambulance which helps the clients to choose the proper ambulance for clients.

When a user can search an ambulance, they can show the details information's. Here is the ambulance details screen short is given blew,

BACHAO
 HOME ABOUT GALLERY CONTACT HELP LINE my profile [logout](#)

Ambulance Details

Ambulance Type: frist class.
 Driver Name: michal khalid.
 Driver Phone Number: 012546895.
 Ambulance Discription: good .
 District Name: dhaka.



AREA: shamoli

Figure 5.5: Ambulance Details

5.2.5 Booking an Ambulance

There are a lot of property in ours site. Clients may be confused to search their desired property. Clients can search property using property type like residence, offices, faculty, and etc. Property can be searched by property status. Property can also be searched using property value and much more. If there is some legal problem with the property. Then it would be unavailable to rent or buy [28].

The screenshot shows a web page titled "BACHAO" with a red header bar containing links for HOME, ABOUT, GALLERY, CONTACT, HELP LINE, my profile, and logout. Below the header is a "Book Ambulance Now" button. A timestamp "এখন সময় 2020-02-26 04:13:43am" is displayed. The main content area has a yellow background and contains the following fields:

- Ambulance Type:** AC (selected in a dropdown menu)
- Pick up:** Pick up location (text input field) and Drop off location (text input field)
- Pick up time:** Pick up time (date/time input field) and Drop off time (date/time input field)
- Name:** name (text input field)
- Mobile:** Mobile number (text input field)
- email:** shumssunam15@gmail.com (text input field)
- Patient location:** Location (text input field)
- Emergency Type:** Accident, Heart attack, Brain stroke, Pregnancy, Breathing, Others (radio buttons)
- Age :** 0 (text input field)
- Gender:** Male, Female (radio buttons)

At the bottom left is a "Book Now" button. To the right of the form is a green sidebar with the heading "Book Your ambulance" and the instruction: "Please provide the following information to book an ambulance. Ensure that your mobile number is correct. Our support will reach you as soon as possible."

Figure 5.6:Booking an Ambulance

5.2.6 Admin Main Dashboard

We already said that our project is totally handled by the admin panel. When a project is upload then admin can easily control that project. If a project is already sold or rent then the admin disables the project in this sector. Admin can understand when a project is upload and when it seals or rent or how many projects is sold or rent or how many projects is unsold or not rent now, admin easily decision making to search in this option.

Here is the screen sort in this page,

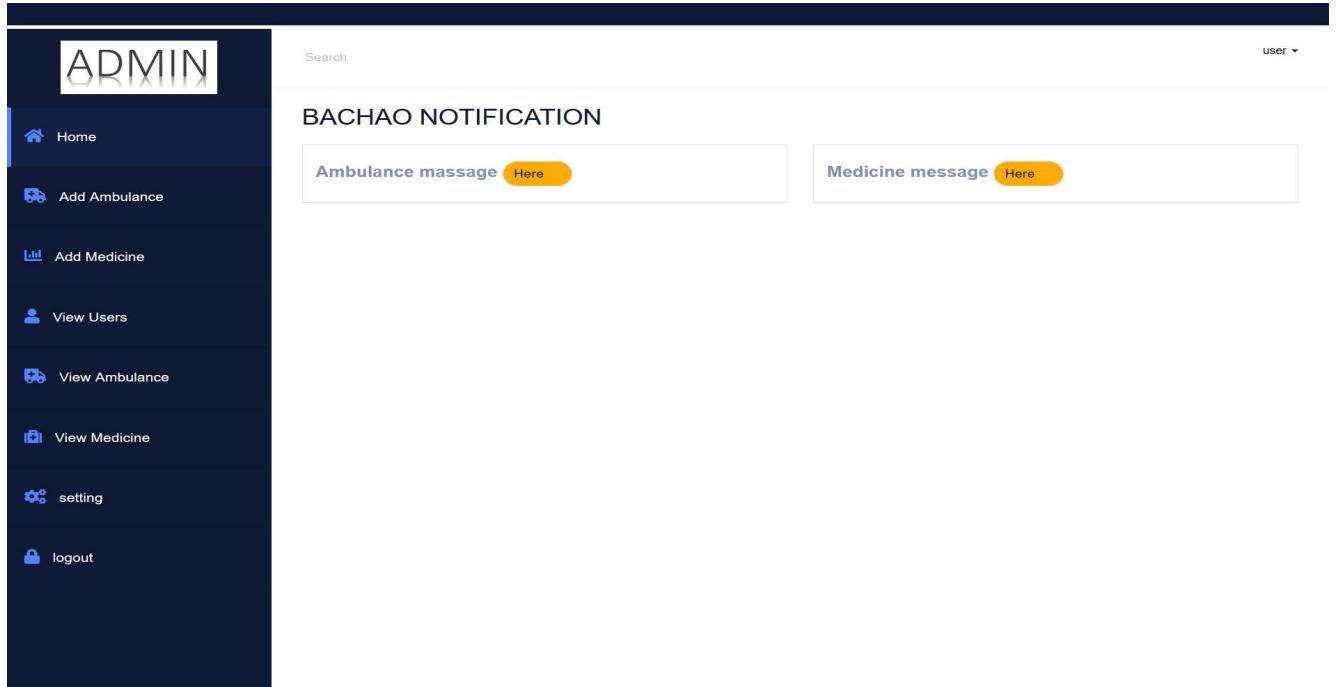


Figure 5.7: Admin panel

5.2.6 Availability

Searched ambulance can be viewed as available or not. The client can book the ambulance only if it is available. Booked ambulance can be hidden from the page. This would decrease the conflict other clients [28].

5.2.7 Booking

Once the ambulance is searched and the client finds the ambulance. This module helps the client to book the ambulance. This module collects the information and checks the information from the backed. If data is verified, then client redirect to the confirmation page [28].

5.3 Conclusions

User manual or GUI is a program interface that takes advantage of the computer's graphics capabilities to make the program easier to use. Well-designed graphical user interfaces can free the user from learning complex command languages. On the other hand, many users find that they work more effectively with a command-driven interface, especially if they already know the command language. But it helps a lot for those user who have not more knowledge about the program or system. They can get idea from graphical user interface and can operate the system easily. It shows the directionto the user and admin From which page to go to which one.for. User can know the system facilities from here [28].

CHAPTER 6

CONCLUSION

6.1 Summary

It was a great opportunity for us to work in ‘Emergency Ambulance System’ Project and design a system of it but there were surely some limitations while implementing this system. To reduce those limitations we have some future plans also. This project is designed to meet requirements of a ‘Emergency Ambulance System’. It is not effective and time saving for clients, if a client needs an ambulance first go to the website [28]. Then booking for the ambulance. Clients needs to give all his information to the admin to book the ambulance. It takes long time for input all information of registration of all processes, if there any problem, in-charge need to call the ambulance driver. Today the use of website is becoming vital in the fields of “Emergency Ambulance System” We try our best to develop nice looking, powerful, user friendly and secure website for personal and professional use. We think it is helpful for general people of all categories. We try to fulfill all necessary requirement and features that provide other online-based system. This website is not very dynamic but it is extendable. If the website needs to extend than we must have to work title on the database. Therefore, we have to demand to develop a website that considers all the issues. Keeping all these things in mind, we have tried our best to build a website, which is secure, dynamic, extendable, and reusable. There still has the opportunity to add other features that are not mentioned here. We have researched for a long time on previous manual system and online system of Online Course Registration System. We find out the problems of previous system and tried to focus on those problems. Then we designed a demo of our system and finally started our main work according to the design. Several software were used while making the project.-Such as HTML, CSS, PHP, Javascript, Xampp etc. If we release our software in the market, then both the users and government get benefits from this. User can easily request for registration through this system, renter can maintain their task easily by using this system [28].

6.2 Further Enhancement

Nothing is perfect in this world. So, we are also no exception. Although, we have tried our best to present the information effectively, yet, there can be further enhancement in the Application.

We have taken care of all the critical aspects, which need to take care of during the development of the Project. Like the things this project also has some limitations and can further be enhanced by someone, because there are certain drawbacks that do not permit the system to be 100% accurate [29]. The application is yet to be released and a lot of enhancements are already thought of which are proposed to be implemented in the final version of the web-application. The web-application has also provided feedback page on its home page so that the users can provide their inputs of any functionalities/facilities they would like to have in the web application. The system is highly flexible one and is well efficient to make easy interactions with the client. The key focus is given on data security, as the project is online and will be transferred in network. The speed and accuracy will be maintained in a proper way. This will be a user-friendly one and can successfully overcome strict and severe validation checks. The system will be a flexible one and changes whenever can be made easy. Using the facility and flexibility in .NET and SQL, the software can be developed in a neat and simple manner thereby reducing the operator's work. Since the project is developed in .NET as a front-end and SQL Server as a back-end it can be modified easily and used for a long period. Following are some of the enhancement proposed to be implemented in final version [29].

- a) Maps are provided to facilitate the users.
- b) Lease option should be provided booking an ambulance.
- c) Give access of website on mobile and PDAs
- d) Send SMS to the ambulance driver who have registered his information.
- e) Mobile application is the best reliable things now a days, in future we will build mobile app.

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