

ONLINE HOSPITAL SEAT MANAGEMENT SYSTEM

BY

PROSENJIT SARKER

ID: 172-15-10129

DEBASHIS KUMAR

ID: 172-15-10130

SANGITA SAHA

ID: 162-15-7843

This Report Presented in Partial Fulfillment of the Requirements for the Degree of
Bachelor of Science in Computer Science and Engineering

Supervised By

Ms. Refath Ara Hossain

Lecturer

Department of CSE

Daffodil International University

Co-Supervised By

Mr. Md. Sadekur Rahman

Assistant Professor

Department of CSE

Daffodil International University



DAFFODIL INTERNATIONAL UNIVERSITY

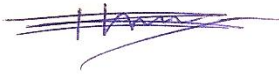
DHAKA, BANGLADESH

SEPTEMBER 2021

APPROVAL

This Project titled “**Online Hospital Seat Management System**”, submitted by Prosenjit Sarker, ID No:172-15-10129, Debashis Kumar, ID No:172-15-10130 and Sangita Saha, ID No:162-15-7843 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 11.09.2021.

BOARD OF EXAMINERS



Dr. Touhid Bhuiyan
Professor and Head
Department of CSE
Faculty of Science & Information Technology
Daffodil International University

Chairman



Nazmun Nessa Moon
Assistant Professor
Department of CSE
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner



Gazi Zahirul Islam
Assistant Professor
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner



Dr. Md Arshad Ali

Associate Professor

Department of Computer Science and Engineering

Hajee Mohammad Danesh Science and Technology University

External Examiner

DECLARATION

We hereby declare that, this project “**Online Hospital Seat Management System**” has been done by us under the supervision of **Ms. Refath Ara Hossain, Lecturer Department of CSE, Daffodil International University**. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

Supervised by:



Name: Ms. Refath Ara Hossain

Designation: Lecturer

Department of CSE

Daffodil International University

Submitted by:

Prosenjit

Prosenjit Sarker

ID: 172-15-10129

Department of CSE

Daffodil International University

Debashis

Debashis Kumar

ID: 172-15-10130

Department of CSE

Daffodil International University

Sangita Saha

Sangita Saha

ID: 162-15-7843

Department of CSE

Daffodil International University

ACKNOWLEDGEMENT

First, we express our heartiest thanks and gratefulness to almighty God for His divine blessing makes us possible to complete the final year project successfully.

We really grateful and wish our profound our indebtedness to **Ms. Refath Ara Hossain, Lecturer**, Department of CSE Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of “*Web Engineering*” to carry out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior drafts and correcting them at all stage have made it possible to complete this project.

We would like to express our heartiest gratitude to **Dr. Touhid Bhuiyan, Professor and Head**, Department of CSE, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University.

We would like to thank our entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

Finally, we must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

The purpose of the project entitled as “Online Hospital Seat management system” is to computerize the Front Office Management of Hospital to develop a website which is user friendly simple, fast, and cost effective for the ordinary people. This study aims to reduce the physical and mental harassment of patients and their family from searching seat in a hospital in any critical situations. This system is more powerful, flexible, and easy to use, and it is very convenient for people. The Online Hospital Seat Management System is an integrated software that handles different directions of hospital procedures. In this project it will be used by website, and easily operated by everyone. It will be user friendly. User can get update every 6 hours about available seat of any hospital. Because of this short process people can save their valuable time. This is very important web site during the covid. At this time hospitals do not want to admit all types of patients. This website is very helpful for those people. The project ‘Online Hospital Seat Management System’ is based on the Web, PHP object oriented and as, there are many areas where we keep the records in database for which we are using MySql server which is one of the best and the easiest server to keep our information.

TABLE OF CONTENTS

CONTENTS	PAGE
Board of examiners	i
Declaration	ii
Acknowledgements	iii
Abstract	iv
CHAPTER	
CHAPTER 1: INTRODUCTION	01-03
1.1 Introductions	01
1.2 Motivation of work	01
1.3 Objectives	01
1.4 Expected Outcomes	02
1.5 Business Policy	02
1.6 How it works	02
1.7 Layout of the Report	02
CHAPTER 2: BACKGROUND	04-05
2.1 Introduction	04
2.2 Related Works	04
2.3 Comparative Analysis	04
2.4 Scopes of Problem	05
2.5 Goals of Proposed System	05

CHAPTER 3: PROJECT MANAGEMENT	06-09
3.1 Project Planning and scheduling	06
1.1 Methodology	06
1.2 Project Management Life Cycle	07
1.3 Project Plan	08
1.4 Schedule Representation	08
3.2 Risk Management	09
CHAPTER 4: REQUIRMENT SPECIFICATION	10-13
4.1 Requirement Collection and Analysis	10
4.2 Hardware Specification	11
4.2.1 Hardware requirements for present project	12
4.3 Software Specification	12
4.3.1 Software requirements for present project	12
4.4 Design Requirement	13
CHAPTER 5: DESIGN SPECIFICATION	14-19
5.1 Business Process Model	14
5.2 Use Case Modelling and Description	15
5.3 Entity Relationship Diagram	16
5.4 Database Design	17
5.5 Logical Data Model	17
5.6 Relational Database Design	18
CHAPTER 6: IMPLEMENTATION AND TESTING	20-39

6.1 Implementation of Database	20
6.1.1 Database Table for This System	20
6.1.2 Database implementation description	23
6.2 Implementation of Front-end-Design	23
6.2.1 Framework	23
6.2.2 Language	23
6.3 Testing Implementation	24
6.4 Penetration Test	26
6.4.1 Basic of External Penetration testing	26
6.4.2 Basic of internal Penetration testing	26
6.5 System Testing	27
6.6 Test Results and Report	28
6.7 Sample Screenshot	29
TER 7: IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY	40-41
7.1 Impact on Society	40
7.2 Impact on Environment	40
7.3 Ethical Aspects	40
7.4 Sustainability Plans	41
CHAPTER 8: CONCLUSION AND FUTURE SCOPE	42
8.1 Discussion and Conclusion	42
8.2 Scope for Further Development	42

REFERENCES

43

PLAGIARISM REPORT

44-46

LIST OF FIGURES

FIGURES	PAGE NO
Figure 3.1.1 Waterfall Model	7
Figure 3.1.2 Iterative and Incremental Life Cycle	7
Figure 4.1.1 Requirements Collect by People	10
Figure 5.1 BPMN	14
Figure 5.2 Use Case Modelling and Description	15
Figure 5.3.1 ERD (Only Entity and Attributes)	16
Figure 5.3.2 ERD (Entity to Entity Relationship)	17
Figure 5.5 Logical Data Model	18
Figure 5.6 Relationship Database Design	19
Figure 6.6.1 Homepage	29
Figure 6.6.2 Search	30
Figure 6.6.3 Non Covid	30
Figure 6.6.4 Covid	31
Figure 6.6.5 Hospital Sign Up	32
Figure 6.6.6 Hospital Login	32
Figure 6.6.7 Dashboard	33
Figure 6.6.8 Header File	33
Figure 6.6.9 Add Hospital Profile	34
Figure 6.6.10 Add Hospital seat	34

Figure 6.6.11 Edit Hospital Profile	35
Figure 6.6.12 Update Hospital Details	35
Figure 6.6.13 Update Hospital Seat	36
Figure 6.6.14 Admin Login	36
Figure 6.6.15 Admin Dashboard	37
Figure 6.6.16 Admin Manage Fields	37
Figure 6.6.17 Search Hospital	38
Figure 6.6.18 Search Hospital Details	38
Figure 6.6.19 Manage Hospitals	39

LIST OF TABLES

TABLES	PAGE NO
Table 3.1.3 Project Plan	8
Table 3.1.4 Gantt chart	8
Table 4.1.2 Public Feedbacks 1	11
Table 4.1.3 Public Feedbacks 2	11
Table 6.1.1.1 Database table for admin name “tbladmin”	20
Table 6.1.1.2 Database table for table fields name “tblfields”	21
Table 6.1.1.3 Database table for hospital users name “users”	21
Table 6.1.1.4 Database table for hospital name “tblhospital”	22
Table 6.6 Test Results and Report	28

CHAPTER 1

INTRODUCTION

1.1 Introduction

This study mainly aimed to focus on both physical and mental harassment of patients and their family. Most of the times patients are in critical situation, when their family need appropriate information about available hospital seats. We are trying to solve patient's problem, long time waiting, third party problem, harassment of hospital management etc. Our main purpose is how we can solve this problem with short time and smoothly. So, we are trying to give relief the patients and their family from waiting trouble. This is very important web site during the covid. At this time hospitals do not want to admit all types of patients. This website is very helpful for those people. Because people can see that in online which hospital has available free seat. So, we just want to make the system in a digital way. But in this system is done with manually.

1.2 Motivation of work

Our country is large populated country. So large no of patient admitted hospital every day. Create pressure on hospital authorities because of lacking of seat. For this reason, patient and patient family suffer this situation badly. Because victims don't know about which hospital has how much free seat available. We suffer harassed it many times and waste our time. So, we motivated and trying to make this project.

1.3 Objectives

Our main purpose is how can we solve this problem with short time and smoothly. We are trying to solve victim's pressure, long time waiting, third party problem, harassment of hospital management etc. many of time patients were in critical position and emergency; then patient guardian needs exact information about seat management in hospital and we are trying to give relief the patient and their family from waiting trouble.

1.4 Expected Outcomes

From this analysis we can control this management system by one software. As a result, people can get their service properly and on the other hand the Hospital Authority also be benefitted by this system. When this project will use it can reduce patient and their family pressure. This system can make discipline on hospital. Other side patient will save from mental and physical harassment.

1.5 Business Policy

After complete our project we have to make conversation with hospital authorities about their benefits of using this application or website. We have to convenes them to add this features their system. If they agree we can make a deal with them. And we can sell our project. When we success it will be beneficial for us. When it will be used maximum hospital than we will be proud for our work.

1.6 How it works

In our project there are two login system option. One is authority system and another is admin. Authority login system need a hidden code for update the hospital available seat plan and this hidden code we will provide them. On the other side admin only want to login not need to sign up. When the hospital authority can set their profile and update the free seat the user saw the available seat for any hospital.

1.7 Layout of the Report

In our project report we manufactured our contents in chapters. The report is presented in six chapters.

Chapter-1: The introductory chapter gives the background leading of the project,

Chapter-2: We discuss the background of our application and analysis and why we choose this application.

Chapter-3: This chapter is about project planning and scheduling of our project.

Chapter-4: This chapter is about Requirement Specification for our project.

Chapter-5: This chapter is based on design. How we design our database what we use etc.

Chapter-6: This chapter based on the implementation and testing of our application for error testing and we give some screenshot for better understanding.

Chapter-7: Is based on Impact on Society, Environment and Sustainability.

Chapter-8: We turn into the conclusion and future Scope of this system.

CHAPTER 2

BACKGROUND

2.1 Introduction

Health of citizen of any country is the wealth of Nation. In this report it is our second chapter and this is the most important chapter. In this section we are discussing our model's design. We will discuss what we will use to make our models. We use HTML, CSS, Bootstrap, PHP, MySQL Database and many other topics to complete the design. Server configuration is one of the most important parts in our model. In this chapter we also discuss how to save our website from virus or other malicious things. In here we will mention the project works that related to our project idea. We will try to find their limitations and discuss about them. We will find the difference between them and us. We will also describe why our application is the best one. Lastly, we will describe the challenges of our application.

2.2 Related Works

For determine the feasibility study of our system we studied on some development project and also discuss which kind of project they are doing. In fact, we have seen many research papers or development project that have not yet been done in such a way that we can know in advance weather there are available seats in the hospital. Try to determine their limitations. So, this work is completely new. If we add this feature along with the old ones that have been made so far, it will be even better. But we will not link to anything old, we will just build a new website on it.

2.3 Comparative Analysis

We are studied so many projects work and trying to learn about them. We studied so many things and find many things like accuracy, limitations, algorithms, different features etc. We can say that we are introducing the exceptional idea for our country. There are many companies in our country like MicroDreamIT, DataSoft, Ascii System and many more when they making software for hospital, they can add this future their system. Because we only make a system that can view the available free seat only. But We are trying to build this system a low-price range.

2.4 Scopes of the Problems

If we look at the statistics of penetration of web technology, we can see that by 2025 it is assumed that the maximum number of systems will be more than 75 billion connected with the web. We can guess that the world is paying huge attention on this area so we might not lack behind. We will need to face a lot of issues to set up our project. There may be some problems writing and running the program. Since many functions have been added to the program, there have been many problems in connecting these functions one by one. The biggest problem is the proper functioning of the database. The whole system is ruined for a small mistake.

1.5 Goals of System

In this section we are going to discuss about our system goals.

- **Planned approach towards working:** The working in the institution will be all around arranged and coordinated. The information will be put away appropriately in information stores, which will help in recovery of data just as its storage. [4].
- **Accuracy:** The level of precision in the framework will be higher. All activity would be done effectively and it confirm that whatever data is coming from the center is proper. [4].
- **Reliability:** The reliability of the system will be high because of the above expressed reasons. The justification the expanded unwavering quality of the framework is that now there would be appropriate capacity of data. [4].
- **No Redundancy:** In the system most, extreme consideration would be that no data is repeated anyplace. This would assure monetary utilization of storage space and consistency in the information put away. [4].
- **Immediate recovery of data:** The fundamental goal of framework is to accommodate a speedy and effective recovery of data. Any kind of data would be accessible at whatever point the client requires. [4].
- **Immediate capacity of data:** In manual framework there are numerous issues to store the biggest measure of data. [4].
- **Easy to Operate:** The system should be easy to operate and should be such that it can be developed within a short period of time and fit in the limited budget of the user. [4].

CHAPTER 3

PROJECT MANAGEMENT

3.1 Project planning and scheduling

Project planning is important for any project, which identifies with the utilization of timetables, for example, Gantt diagrams to design and along these lines report progress inside the project environment. At first, the project scope is characterized and the proper strategies for finishing the undertaking are resolved. Following this progression, the durations for the various tasks necessary to complete the work are listed and grouped into a work breakdown structure. The logical conditions between tasks are characterized utilizing a movement network outline that empowers distinguishing proof of the basic way. [5].

3.1.1 Methodology

We have utilized Iterative and Incremental Development model for our project improvement. This development approach is additionally alluded to as Iterative Waterfall Development approach. This model is intended to deal with big project. The enormous and muddle project primarily request better turn of events and testing strategy. The waterfall model is notable for its continued testing measure. Consequently, we pick the waterfall model for fostering our product. We make this project by following this model. The following figure 3.1.1 shows the step of waterfall model. [6].

Advantages of waterfall model

- Easy and simple to understand and use.
- Easy to manage due to the rigidity of the model.
- Phases are processed and finished one at a time
- Works well for smaller projects where requirements are very well understood.

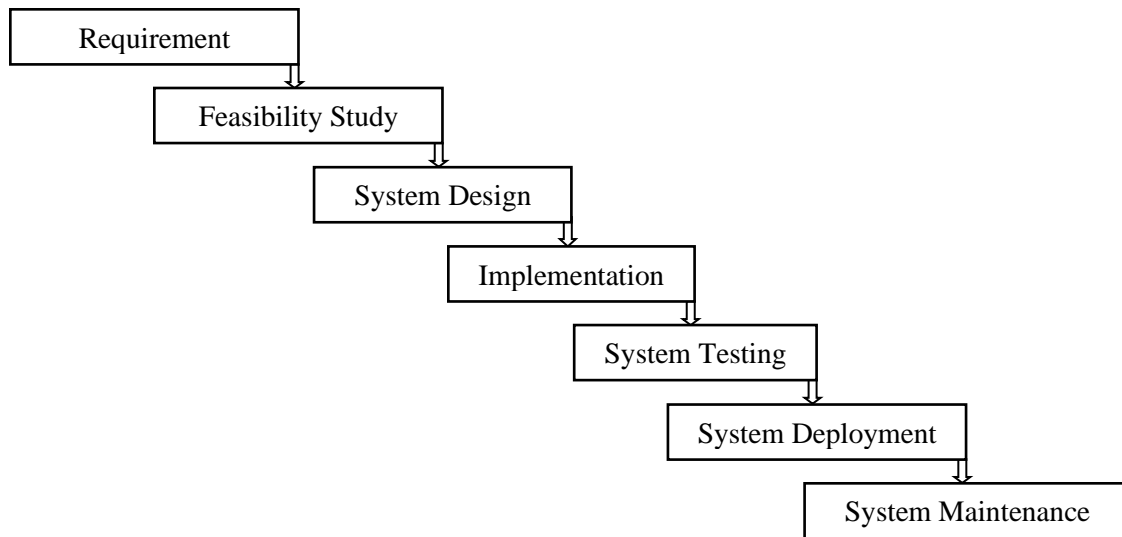


Figure 3.1.1: Waterfall Model

3.1.2 Project Management Life Cycle

It is high-level processes for delivering a successful project. The Project Management Life Cycle has four phases. Each project life cycle phase is described along with the tasks need to complete it. The following figure 3.1.2 shows the step of Project Management Life Cycle. The four phases of Project Management Life Cycle are. [6].

- Initiation
- Planning
- Execution
- Closure.

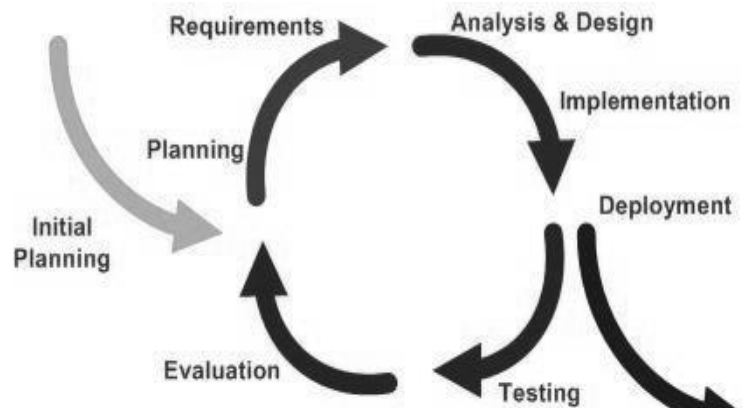


Figure 3.1.2: Iterative and Incremental Life Cycle

3.1.3 Project Plan

Once we examine that the project is feasible, we undertake project planning. The table below describes how we planned our project. The following table 3.1.3 shows the how much time has been taken from beginning to end.

TABLE 3.1.3: PROJECT PLAN

1	Task Name	Duration	Start	Finish
2	Planning	31 days	12/01/21	12/02/21
3	Design	54 days	13/02/21	07/04/21
4	Coding	50 days	30/05/21	20/07/21
5	Delivery	8 days	30/07/21	12/08/21

3.1.4 Schedule Representation

Scheduling the project tasks is an important project planning activity. It involves deciding which tasks would be taken up when. In order to schedule the project activities, a software project manager needs to do the following this rule. The following table 3.1.4 shows Gantt chart of this project. [6].

TABLE 3.1.4: GANTT CHART

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		
Planning																								
Design																								
Coding																								
Testing																								
Delivery																								

3.2 Risk Management

Software Risk Management is a proactive approach for minimizing the uncertainty and potential loss associated with a project. Some categories of risk include product size, business impact, customer- related, process, technology, development environment, staffing (size and experience), schedule, and cost. Risk Management is a practice with processes, methods, and tools for managing risks in a project.

Risk identification is a systematic attempt to specify threats to the project plan. By identifying known and predictable risks, we can take a first step toward avoiding them when possible and controlling them when necessary. To perform the risk identification, we categorized the risk into different categories as: [7].

1. Project Risk
2. Technical Risk
3. Business Risk
4. Known Risk
5. Predictable Risk
6. Unpredictable

CHAPTER 4

REQUIREMENTS SPECIFICATIONS

4.1 Requirement Collection and Analysis

Hospital seat problem is a burning question in our country. For reducing it we collect some information from victims and general public by online. We explain what we collect by people by figure 4.1.1 and table 4.1.2 and 4.1.3. We give some questions to people about through this project how can we reduce victims time, trouble, mental and physical harassment. Which option is suitable for people app or website? They all reply positive answer. And maximum people prefer app and website both options. But at first, we try to make a website for this. Next time we make an application for this. After that we design our Use Case diagram and Business process Model and start working. And get instructions from our Supervisor Ma'am.

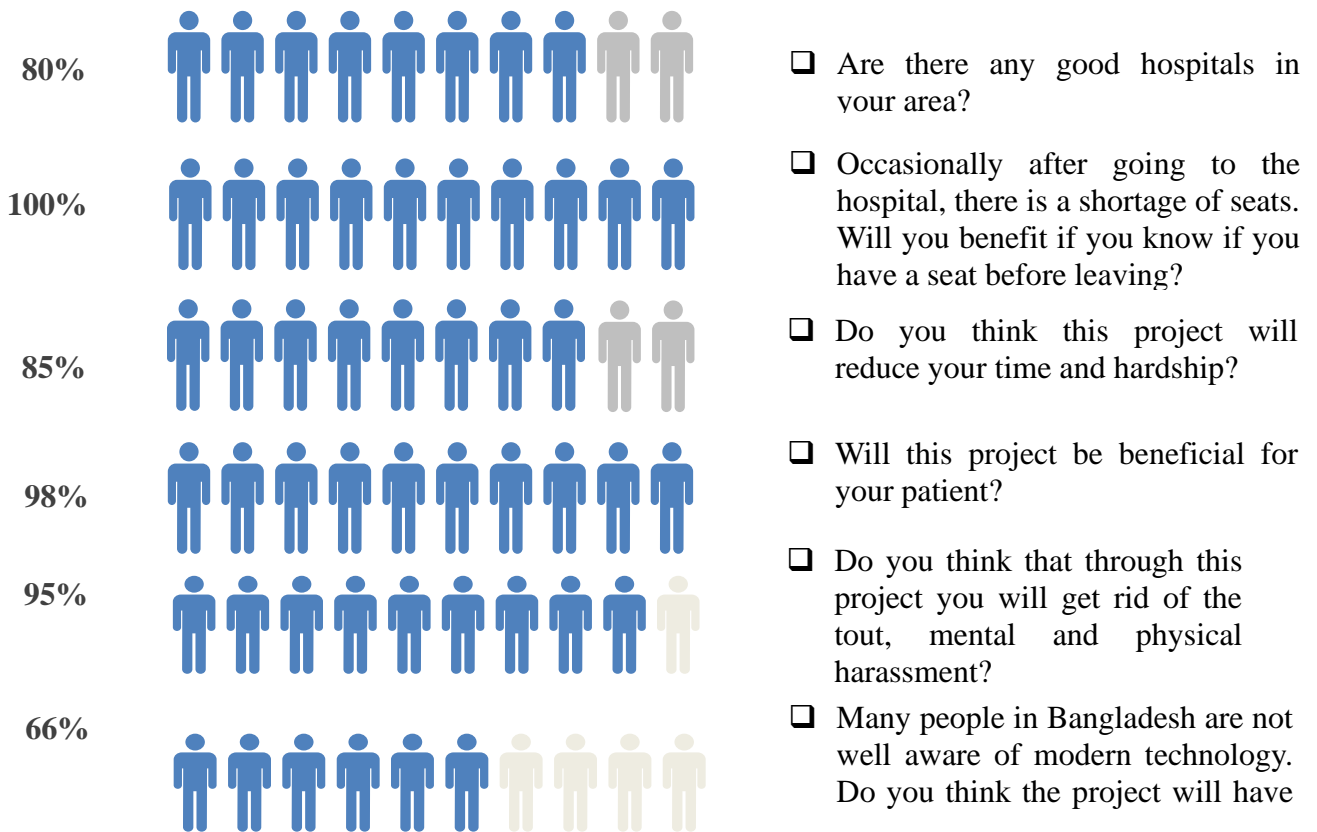
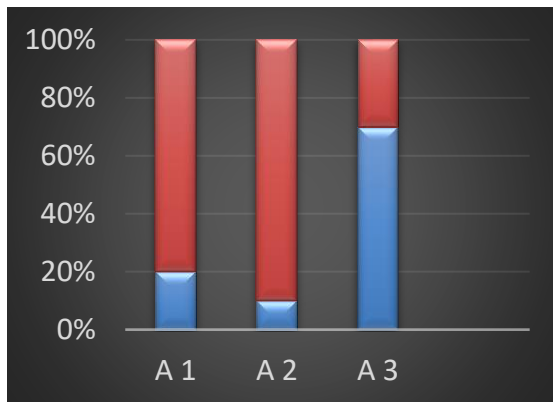


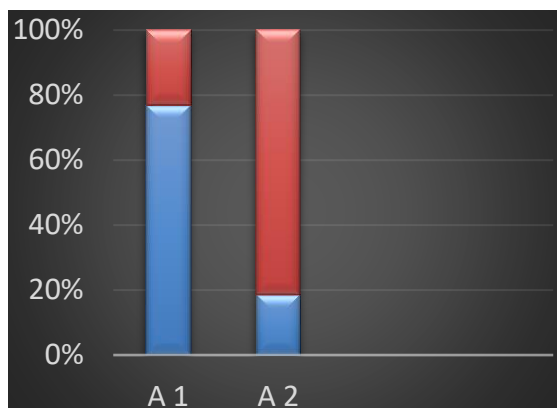
Figure 4.1.1: Requirements Collect by People

TABLE 4.1.2: PUBLIC FEEDBACKS 1



- Which option would you give more prominence to?
 A1 = Website
 A2 = App
 A3 = Both

TABLE 4.1.3: PUBLIC FEEDBACKS 2



- How often do you think the number of empty seats can be adjusted?
 A1 = 6 Hour
 A2 = 12 Hour

For implementing our website, we had to collect some requirements. We can categorize our all requirements into software section and hardware sections.

4.2 Hardware Specification

The most well-known arrangement of necessities characterized by any working framework or programming application is the actual computer resources, it is called hardware. A hardware necessities list is regularly joined by a hardware similarity list, it is called hardware compatibility list or HCL particularly in case of operating systems. A HCL lists tested similarity and some of the time inconsistent equipment gadgets for a specific operating system or application. The following sub-areas discuss the different parts of hardware prerequisites.

4.2.1 Hardware requirements for present project

Processor: Minimum core i3 Processor;

RAM: 4GB;

Hard disk: Local disk C 200 Mb

4.3 Software specification

A software requirements specification (SRS) is a record that catches total description about how the system is required to perform. It is generally closed down toward the finish of requirements engineering stage. Software Requirements deal with software resource requirements and pre-requisites that need to be installed on a computer to provide optimal functioning of an application. These prerequisites or pre-requisites are not included in the software installation bundle and need to be installed separately before the software is installed. It's a package. We have used the framework which also developed by popular languages. We focused on minimizing the run time executions and lessen the bugs and errors.

4.3.1 Software requirements for present project

For building up the website, we need the accompanying Software Requirements:

- Operating System: Windows 10
- Development Tool: Visual Studio IDE/ Code Editor, Pixie Color Picker, WAMPP/XAMPP
Local server
- Language: HTML5, CSS3, JavaScript, PHP, JavaScript library – jQuery
- Database: MySQL
- Framework: Bootstrap (for Front End), PHP (for both Frontend and Backend).
- Browser: Google Chrome, Mozilla Firefox

4.4 Design Requirement

Our website is dedicated for all end users. So, it is very important to be easier and user friendly to both expert and inexperienced users. It should ensure that every user need to use it without any difficulties and complexity. Every developer tries to present his project to his/her user so that it can be easily accepted and it basically depends lots on its look. So, we tried to use simple and easy user interface for our website.

CHAPTER 5

DESIGN SPECIFICATION

5.1 Business Process Model

Business Process Modelling helps to understand the interaction with the user and provider graphically to easily understand the whole system. The following figure 5.1 shows business process model of this system database. [1][8].

The model of our project is given below.

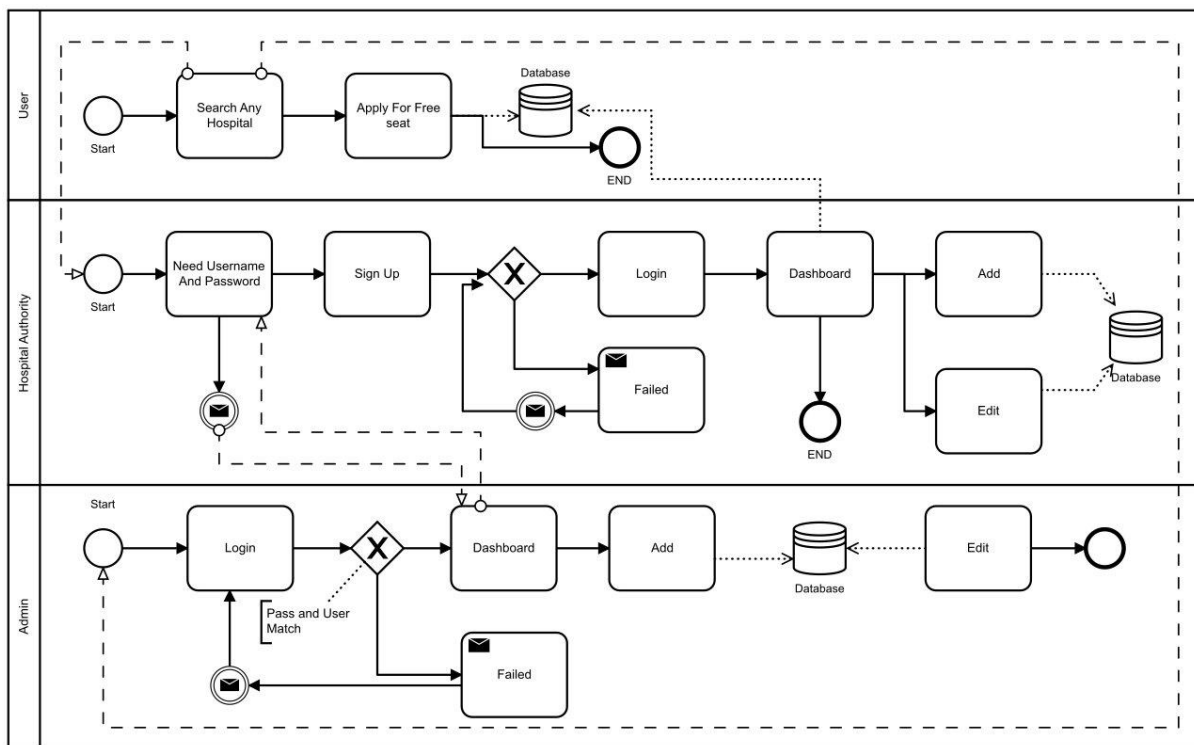


Figure 5.1: BPMN

5.2 Use Case Modelling and Description

Use case model describes the interaction among the actors of any system. It helps to understand the system easily by a graphical representation. The following figure 5.2 shows use case modelling of this system. [1][9].

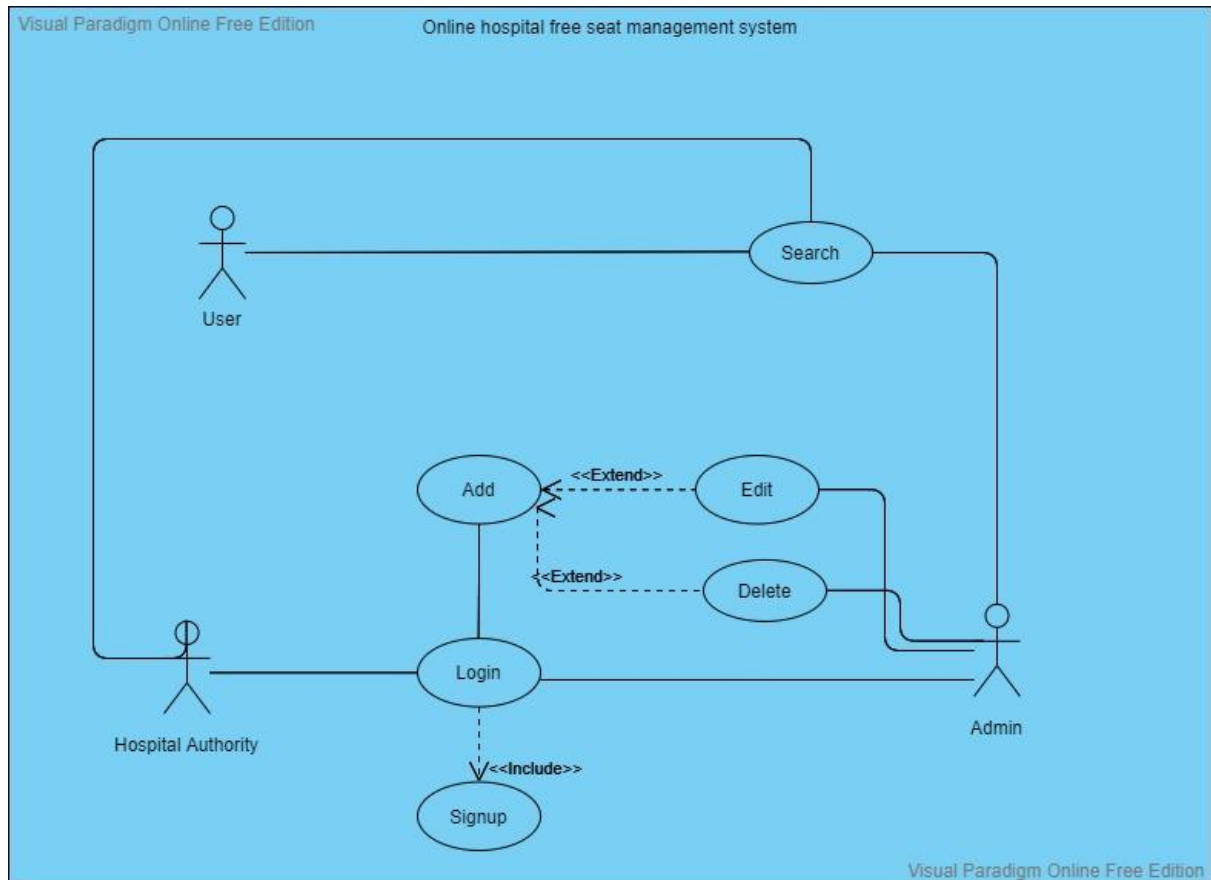


Figure 5.2: Use Case Modelling and Description

We can see that, there are three actors are include in our project's use case diagram. The main actor of this project are Hospital Authority and Admin. Admin is the main controller of total information Database and another actor's activity. And hospital authority can control his own hospital details. He or she delete and edit anytime. And user only can search and see.

Actors:

- User
- Hospital Authority
- Admin

5.3 Entity Relationship Diagram

An entity relationship graph connections of entity sets put away in a database. By characterizing the entity, their attributes, and showing the connections between them. Mainly it is used to sketch out the design of a database. We show two pictures. First one figure 5.3.1 shows only entity and attributes and second one 5.3.2 shows Only Entity to Entity Relationship. We are not showing the connection between them in the 5.3.1 figure. Because of complexity. For this reason, we again show a connection diagram 5.3.2. [1].

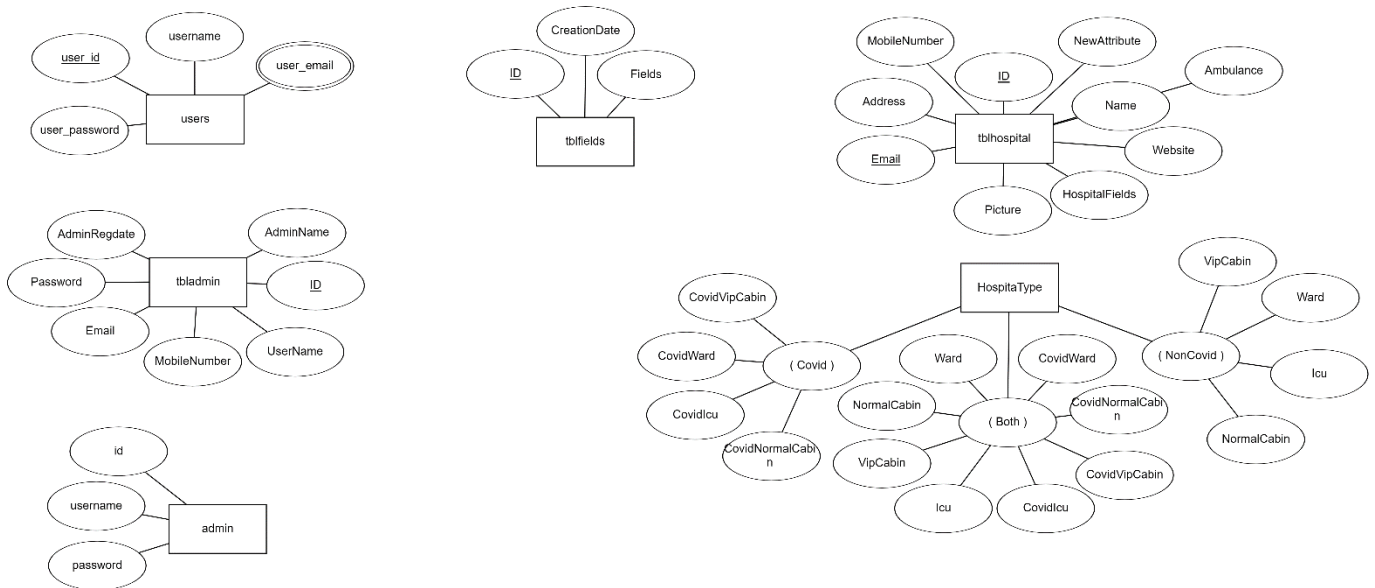


Figure 5.3.1: ERD Diagram (Only Entity and Attributes)

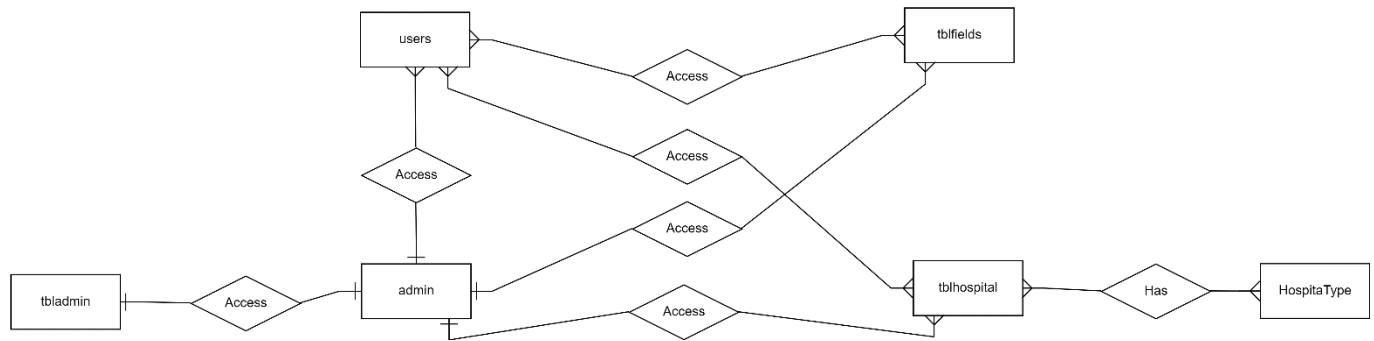


Figure 5.3.2: ERD Diagram (Only Entity to Entity Relationship)

5.4 Database Design

Database Design is the way toward creating a definite data model of data set. This data model contains all the need sensible and actual plan decisions and actual stockpiling boundaries expected to produce a plan in an information definition language, which would then be able to be utilized to make a data set. A completely attributed data model contains definite properties for every substance.

The term Database Design can be utilized to portray a wide range of part of the plan of a general data set framework. Primarily, and most accurately, it very well may be considered as the logical design of the base information structure used to store the information. In an article information base the elements and connections map straightforwardly to protest classes and named connections. Nonetheless, the term information base plan could likewise be utilized to apply to the general cycle of planning, the base information structure, yet additionally the structures and questions utilized as a component of the general data set application inside the database management system.

5.5 Logical Data Model

In our project we used MySql Server to store and call back the data into database. We had to store the following Data and Information to our database. It's a business process model which is use for understanding database. The following figure 5.5 indicates the database and how the system access data. [2].

- **Admin:** Email and Password
- **Hospital Service Provider:** Email and Password, Account Information, Track availability and Action information.
- **For User:** Only search option.

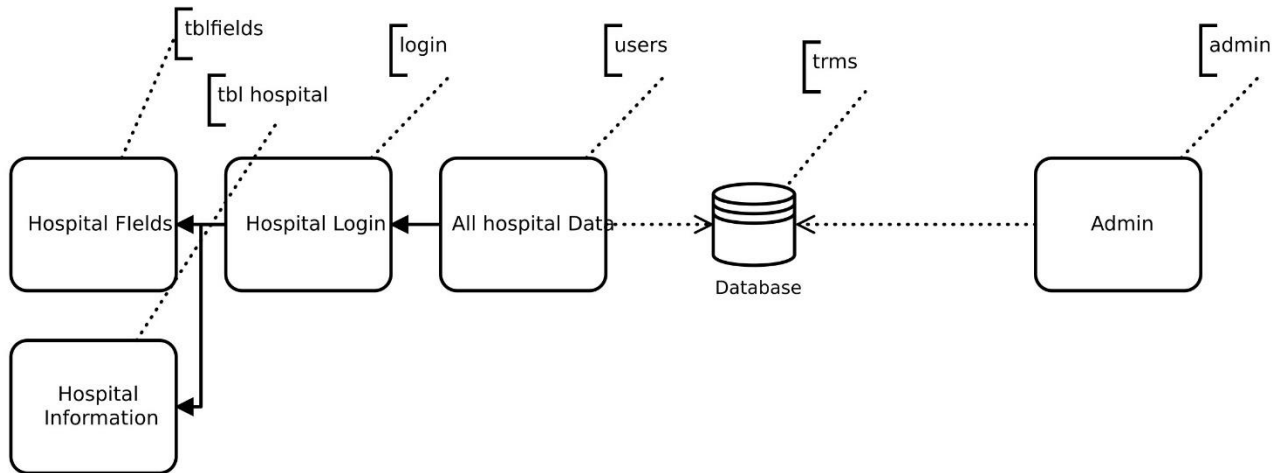


Figure 5.5: Logical Data Model

5.6 Relational Database Design

RDD is the way toward creating a data model of data set. This data makes with a set of tables with some rows and some columns. Here we can see 5 tables in this database. And many columns and have many rows. Every row of every table with represents record of data and column represent the attribute of data. A completely attributed data model contains definite properties for every substance. In RDD, the information is coordinated into tables and a wide range of information access are completed by means of controlled transactions. The following figure 5.6 shows which table in the database depends on which table. [2].

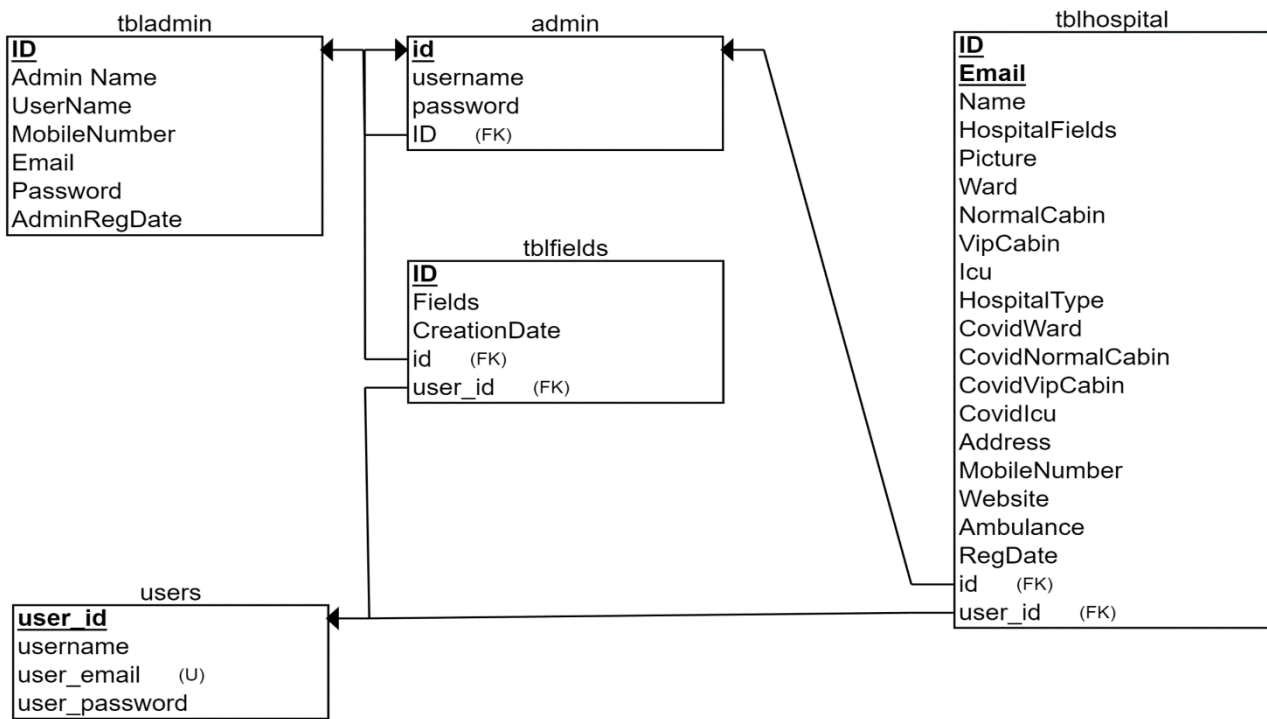


Figure 5.6: Relational Database Design

CHAPTER 6

IMPLEMENTATION AND TESTING

6.1 Implementation of Database

We have utilized MySQL server to executing data set to our website. SQL is most popular and hugely used in websites and application development. It is suitable for implementing web application all over the world. It has been used for storing and fetching data for our website. We use 4 table this system database. Admin information store in the “tbladmin” table. What kind of hospital this information store in the “tblfields”. All authority details in the “users” table. And hospital all information will store in the “tblhospital”.

6.1.1 Database Table for This System

The following table 6.1.1.1 is for Admin. And table name is “tbladmin”. Table 6.1.1.2 is for Hospital Field and name is “tblfields”. Table 6.1.1.3 is for Hospital Authority and name is “users”. Table 6.1.1.4 is for Hospital all record where all hospital records will be kept and name is “tblhospital”.

TABLE 6.1.1.1: DATABASE TABLE FOR ADMIN NAME “tbladmin”

No	Column	type	Primary key	Foreign key
1	ID	integer	No	No
2	AdminName	vvarchar	No	No
3	UserName	vvarchar	No	No
4	MobileNumber	vvarchar	No	No
5	Email	vvarchar	No	No
6	Password	vvarchar	No	No
7	AdminRegDate	vvarchar	No	No

TABLE 6.1.1.2: DATABASE TABLE FOR TABLE FIELDS NAME “tblfields”

No	Column	type	Primary key	Foreign key
1	ID	integer	Yes	No
2	Fields	varchar	No	No
3	CreationDate	timestamp	No	No

TABLE 6.1.1.3: DATABASE TABLE FOR HOSPITAL USERS NAME “users”

No	Column	type	Primary key	Foreign key
1	user_id	int	Yes	No
2	username	varchar	No	No
3	user_email	varchar	No	No
4	user_password	varchar	No	No

TABLE 6.1.1.4: DATABASE TABLE FOR HOSPITAL NAME “tblhospital”

No	Column	type	Primary key	Foreign key
1	ID	int	Yes	No
2	Name	varchar	No	No
3	HospitalFields	varchar	No	No
4	Picture	varchar	No	No
5	Email	varchar	No	No
6	Ward	bigint	No	No
7	NormalCabin	varchar	No	No
8	VipCabin	Varchar	No	No
9	ICU	varchar	No	No
10	Prosenjit	varchar	No	No
11	CovidWard	Int	No	No
12	CovidNormalCabin	Int	No	No
13	CovidVipCabin	Int	No	No
14	CovidIcu	Int	No	No
15	Address	Varchar	No	No
16	MobileNumber	Varchar	No	No
17	Website	Varchar	No	No
18	Ambulance	Varchar	No	No
19	RegDate	timestamp	No	No

6.1.2 Database implementation description

Here we discuss how system works, and it is described in the following points.

- Hospital Information, their Images, their free seat are stored to the database by admin and hospital authority.
- User easily can search and see the which hospital has how many available seats.
- Admin can enter the web site by a hide link.
- Admin need only username and password. Which is already set in the database.
- Hospital authority need at first sign in then need login. Then hospital authority can change and add information. And this information will store in the database.
- Several options which are controlling input option and navigations those were added by developers to database.

6.2 Implementation of Front-end Design

Any website's usability and looks depends on Frontend design implementation. More refined frontend design offers more acceptancy to its users. How much frontend design will be refined and straight forward it will be much acceptable and user friendly to its user. For our frontend design, we have used the following languages and framework.[12].

6.2.1 Framework

Bootstrap: We used the CSS framework Bootstrap 5. Which is so popular. This framework is a fully free open-source framework of CSS used for responsive web applications. It helps to design responsive websites without coding a lot of lines. [13].

6.2.2 Language

HTML: HTML refers Hyper Text Markup Language. Most of the web developers use HTML language for creating Web pages. Structure of a Web page can be described by HTML. HTML describes how to display and arrange the components in browser. We use html for input, edit, sign in, login all everything.[12].

CSS: CSS refers Cascading Style Sheets. CSS describes how elements will be arranged and how colours will be displayed. It performs for design various contents, fonts, and colours for presentation and their separations. We use for style our web page. [12].

JQuery: It is a JavaScript Library. It greatly simplifies JavaScript programming. We have use some jQuery to add some fascinating animation to improve the looks of our webpage and some section will be work by jQuery. [12].

JavaScript: JavaScript is the world's most popular programming language of the Web. It is easy to learn. It is exceptionally lightweight language, interpreted or in time compiled programming language with top notch functions. JavaScript is a model based, multi-worldview, single-strung, unique language, supporting Object Oriented Programming. [12].

PHP: It is a server-side scripting language that is embedded in HTML. It is used to manage dynamic content, databases, session tracking, even build entire e-commerce sites. It works with a number of popular databases, including MySQL, PostgreSQL etc. [10].

6.3 Testing Implementation

Each application should be tried before they can be utilized by clients or customer and it is indispensable as we can't make any application with no bugs or mistakes in it. It is our obligation to check runtime blunders and assemble time mistakes both. And also need to check functionality that we have implemented work properly. We need to check all the functionality with valid and invalid entry. Valid entry needs to be success, and invalid needs to be fail. If those two-entry work properly we can ensure our system error free. We also need to check the final output as it matched to our desire output.

There is so many features and options in our Online Hospital seat management system website. To test our project, we have to check out all of our features and options of our website to examine that all of our options are working or not. We have checked the options and compare with expected outcome.

Options which are declared in navigations are listed below:

- Home

- Hospital Authority Sing Up
 - Hospital Login
 - Dashboard
 - Add Hospital Information
 - Manage Information
 - Edit Hospital Information
 - Delete Hospital Information

- Admin Login
 - Dashboard
 - Add Hospital Information
 - Add hospital Fields
 - Manage Information
 - Edit Hospital Information
 - Delete Hospital Information
 - Delete hospital Fields
 - Delete Any Hospital All information
 - Control the whole database

- Search

We had to check all options individually. At first, we had to run our project by local server in our personal computer.

Home: When we are in Homepage of the website and click the option, it will reload the same page. We see a Search option in the main Homepage and a Hospital Authority option top of the Homepage.

Hospital Authority: At first register in the Signup option then login in the website by using mail address.

Dashboard: When login completed, we see a Dashboard. In this Dashboard we see how many hospitals and how many fields added in this system.

Add Hospital Information: From the Dashboard we find the option Add Hospital Information. And we can add hospital information. When add the hospital against the hospital email id, another hospital cannot be added. Only edit the information. And there is also an option. Delete option. If we delete the information then we add information again.

Admin: Here only need Login not need Signup. Because user name and password would be set in the database previously. Admin can enter his page by a link. This link will be known only admin. When admin enter the page, it has a dashboard and a sidebar. In the dashboard admin can add or delete hospital fields and see the hospital and remove hospital. In the side bar this option has also. And add any hospital. And edit anything. And a search bar.

6.4 Penetration test

A penetration test which is also known as pen test is a practice of comprehensive security program. Sometimes it also exposes a missing security device like firewall, intrusion detection system, intrusion prevention system. Penetration test is one of the most important in organization security system because it can identify the security weakness of an organization very successfully. It also helps to make strategic decision. [2].

6.4.1 Basic of External penetration testing

External penetration testing is a method of penetration test. In this method tests are target those assets of a company which are outside or visible to the internet. Company website, mail server, domain is the main target of the external pretention test. [2].

6.4.2 Basic of internal penetration testing

This is another method of penetration test. This method is including many elements. There is lots of device that need to test for weakness like server, internal router interface, and internal firewall

interfaces. This kind of testing is very important and also useful because it helps to estimate how much damage a disgruntled employee could cause. [2].

6.5 System Testing

Here we discuss how the system has been tested from beginning to end.

- **Integration Testing:** Integration testing done before, during and after integration of a new module into the main software package. One piece of programming can contain a few modules which are regularly made by a few distinct developers. It is urgent to test every module impact on the whole program model. After mix testing the task works effectively.
- **Unit Testing:** Unit testing performed on each module or block of code during development. Unit testing is normally done who writes the code or program.
- **System Testing:** System testing done by a professional testing agent on the completed software product before it is introduced to the market.
- **Acceptance Testing:** Acceptance testing is a beta testing of the product done by the actual end user.
- **Recovery Testing:** Recovery testing is done to demonstrate a software salutation is reliable, trustworthy and can successfully recoup form possible crashes.
- **Functional Testing:** Functional Testing also known as functional completeness testing. Functional Testing includes attempting to think about any possible missing capacities. Programmers may make a rundown of extra functionalities that an item could to further develop it during practical testing.
- **Security Testing:** Security Testing is a variation of Software Testing which guarantees, that framework and applications in an association, are liberated from any provisos that may cause a major loss. Security testing of any system is about finding all possible loopholes and weaknesses of the system which might result into a loss of information at the hands of the employees or outsiders of the Organization. [4].

6.6 Test Results and Report

The following table 6.6 is mainly indicates when we run the system, the system running properly or not. This table is shows that the expected output and actual output are same or not.

TABLE 6.6: TEST RESULTS AND REPORTS

Test Case	Test Input	Expected Output	Actual Output	Result
Add Hospital	Correctly enter name, Seat etc.	To display “Successfully Data has been added”	Showed “Successfully Data has been added”	Passed
Edit Hospital Details	Correctly update Seat name etc	To display “Success”	Showed “Success”	Passed
Login	Correctly enter name, email.	To display “Successfully e Login”	Showed “Successful”	Passed
Use Same Mail	Enter email, when add	To display “Use Another Email”	Showed “This email already used. Try Another”	Passed

We check the system many times. We don’t find error. And this is the result of the testing.

6.7 Sample Screenshots

Home Page: The following figure 6.6.1 shows the home page of Online Hospital Seat Management Systems. When we enter the link, we see this home page.

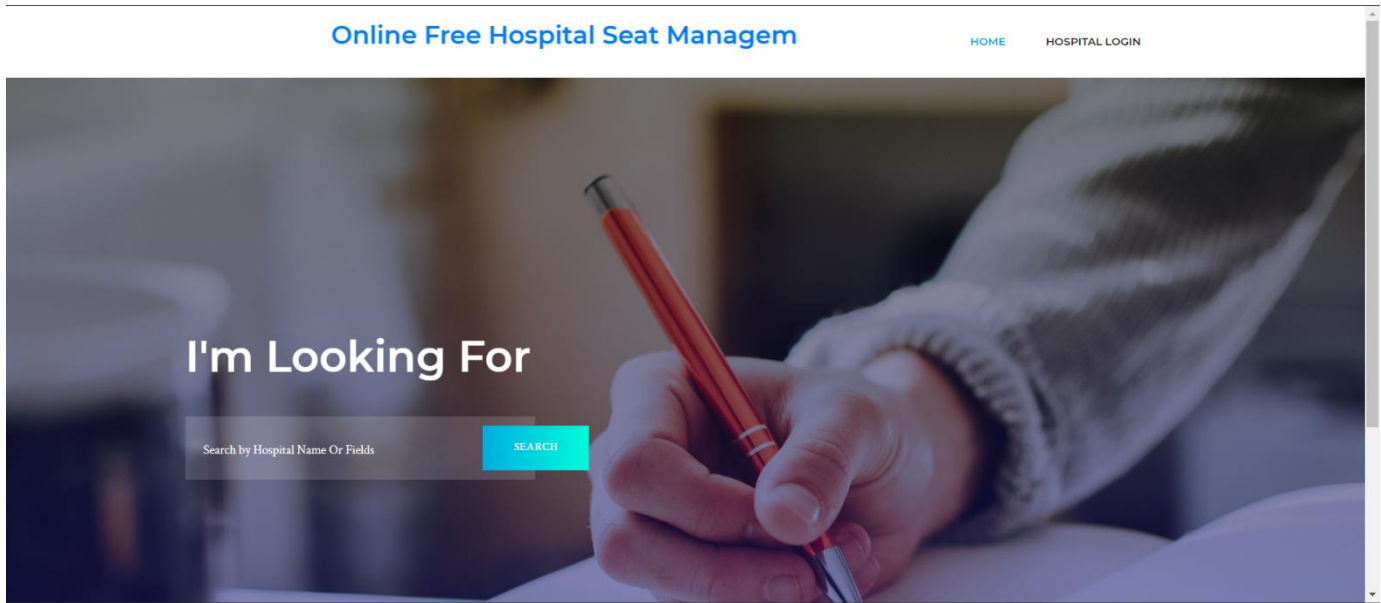


Figure 6.6.1: Homepage

Search: The following figure 6.6.2 shows the search result. When we click the search button of home page, we see this page. It remains all information of a hospital like Hospital name, Address, Hotline number, Official website, Ambulance Service, Specialized For, Hospital type, Free seats etc. When we click show button from Free Seat column, we get update information about how many seats are vacant according to hospital type. If it is covid, it will show the details of Covid Hospital. If it is noncovid, it will show the details of NonCovid Hospital. And if it is both, it will show the details of Covid Hospital and NonCovid Hospital both.

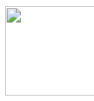

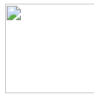
S.No.	Photo	Hospital Name	Address	Hotline Number	Official Website	Ambulance Service	Specialized For	Hospital Type	Free Seat
1		popular					Kedny	covid Hospital	Show
2		popular medical college hospital					Cardiology	noncovid Hospital	Show
3		rajshahi medical collage hospital					Kedny	noncovid Hospital	Show

Figure 6.6.2: Search

Non Covid: The following figure 6.6.3 shows the available free seat of a hospital. If the hospital is noncovid hospital then show the noncovid free seat. When we press the show button of hospital type, if it is noncovid, then the number of seats in that hospital can be seen. If there are no available seat then show the seats are zero.

Available Free Hospital Seat

[Back Home](#)

Name	Ward	Normal Cabin	Vip Cabin	Icu
popular	0			
popular medical college hospital	2	4	2	4
rajshahi medical collage hospital	5	1	1	1
popular	0			

Figure 6.6.3: Non Covid

Covid: The following figure 6.6.4 shows the available free seat of a hospital. If the hospital is covid hospital then show the covid free seat. When we press the show button of hospital type, if it is covid, then the number of seats in that hospital can be seen. If there are no available seat then show the seats are zero. And if the hospital treats both covid and noncovid, then the number of seats in that hospital can be seen in two parts one is covid section and another is noncovid section. If there are no available seat then show the seats are zero.

Name	Covid Ward	Covid Normal Cabin	Covid Vip Cabin	Covid Icu
popular	2	1	3	4
popular medical college hospital	1	1	1	1
rajshahi medical collage hospital	0	0	0	0
popular	2	1	3	4

Figure 6.6.4: Covid

Hospital Sign Up: The following figure 6.6.5 shows the create account of a hospital. At First need to singing up for any hospital. Only 3 information have to give. Username, Email and Password. If the email already has in the database, it doesn't take anymore. If the email is unique then the sign up complete. And authority prepared to login.

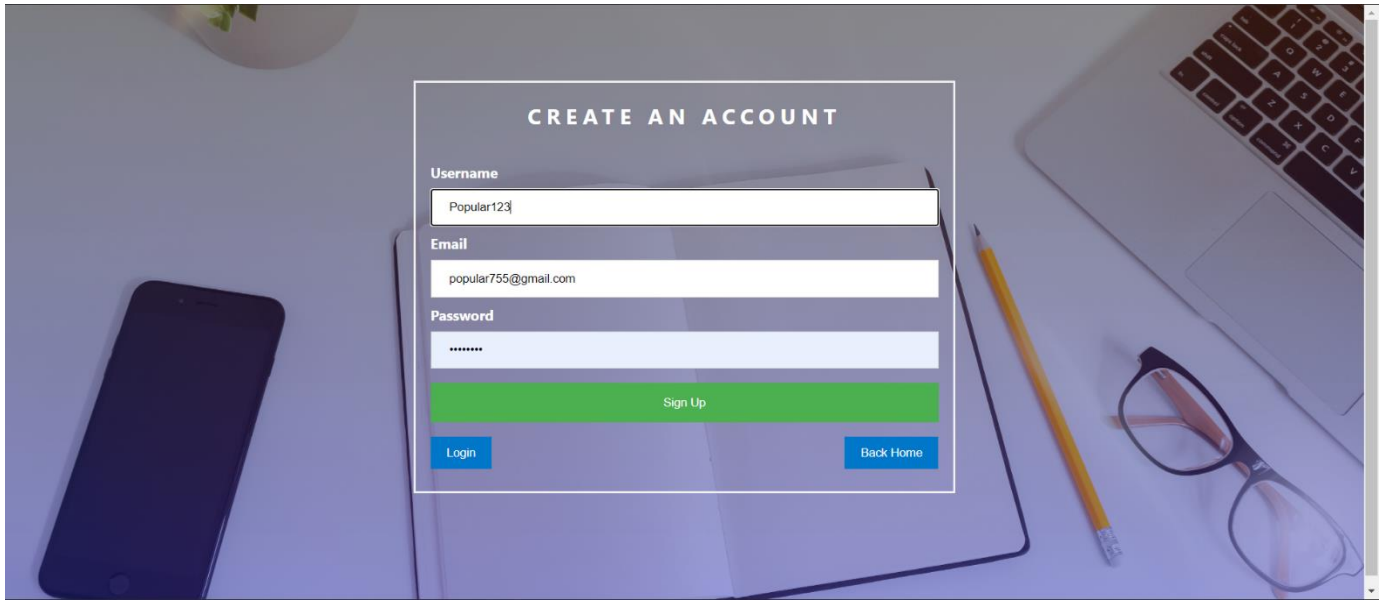


Figure 6.6.5: Hospital Sign Up

Hospital Login: The following figure 6.6.6 shows the login page of any hospital authority. It is Need to login for any hospital. So, need an email address and password. And the email and password are the ones that have been used for sign up. When login complete then the authority enters hospital seat management main page. Or dashboard.

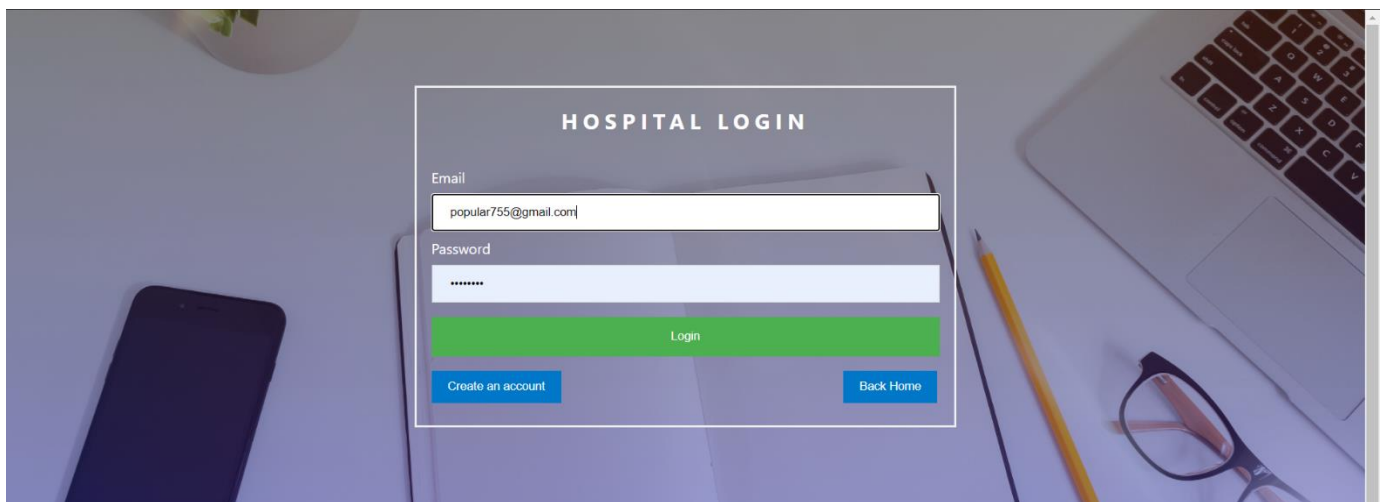


Figure 6.6.6: Hospital Login

Dashboard: The following figure 6.6.7 shows the dashboard. Here authority can access the add feature, edit feature.

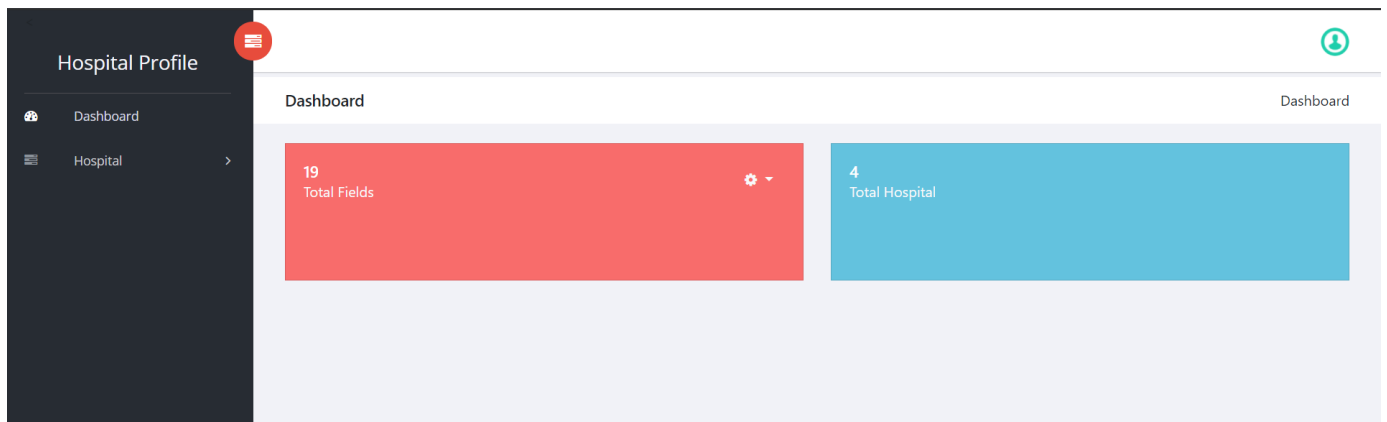


Figure 6.6.7: Dashboard

Header File: The following figure 6.8 shows the header file in the hospital authority section. In this header file have two options. Hospital authority can go to back or home page and logout. When logout then need to login again.

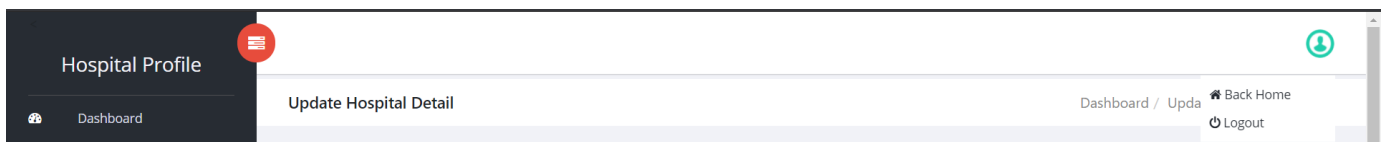


Figure 6.6.8: Header File

Add Hospital Profile: The following figure 6.6.9 shows the Fill up form. By help this form authority can add their hospital information. When we click Add button, we get a fill up form where include Hospital Details like Hospital Name, Hospital Pic, Hospital Address, Hospital Hotline Number, Hospital Type etc.

Figure 6.6.9: Add Hospital Profile

Add Hospital seat: The following figure 6.6.10 shows the seat of any hospital. Hospital needs to set Hospital seat. Then we have to add the number of seats in some sections.

Figure 6.6.10: Add Hospital seat

Edit Hospital Profile: The following figure 6.6.11 shows an edit page of the hospital. When we

click Edit Hospital Profile, we see this page where has Serial No, Hospital Name, Area of Fields, Registration Date, Action etc. In this fields if we edit any information, we can do it from.

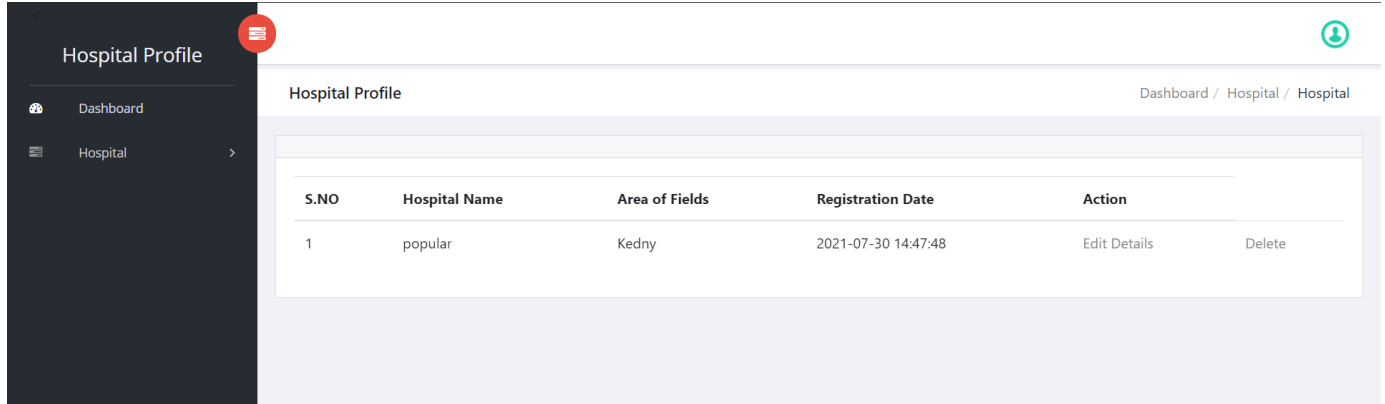


Figure 6.6.11: Edit Hospital Profile

Update Hospital Details: The following figure 6.6.12 shows the update form. When click edit details this page will show. Every data fetch from database this page. Now we can edit all Hospital information. We can edit Hospital Name, Hospital Picture, Hospital Address etc.

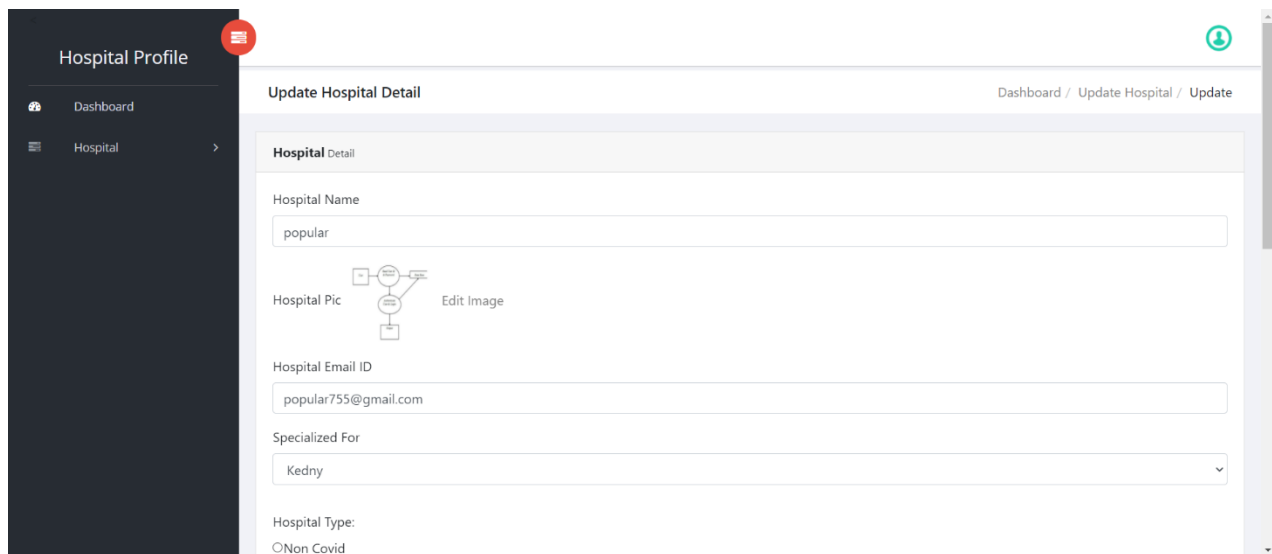


Figure 6.6.12: Update Hospital Details

Update Hospital Seat: The following figure 6.6.13 indicates the seat section of any hospital. This section, here we can update Hospital available free seat. Hospital Authority can do this after that every eight hours.

Hospital Type:

Covid
 NonCovid
 Both

Covid Ward

Covid Normal Cabin

Covid VIP Cabin

Covid ICU

Figure 6.6.13: Update Hospital Seat

Admin Login: The following figure 6.6.614 shows the admin login page. Admin can enter this page by dint of a hidden link. Now Admin need User name and Password which is previously stored in the database. Admin don't need to sing up.

ADMIN LOGIN

User Name

Password

[Log in](#)

[Back Home](#)

Figure 6.6.14: Admin login

Admin Dashboard: The following figure 6.6.15 shows the admin dashboard. When Admin Login will complete this page will show. This Dashboard will similar to Hospital Authority Dashboard. But Hospital Authority can't access everything. But Admin can access everything of this system from this Dashboard.

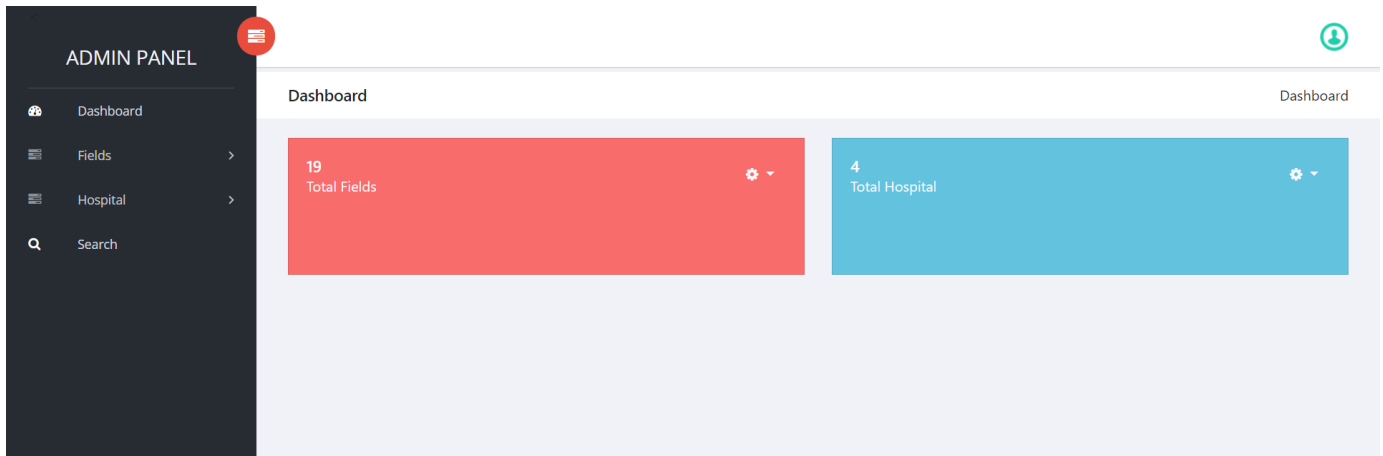


Figure 6.6.15: Admin Dashboard

Admin Manage Fields: The following figure 6.6.16 shows the admin Manage field. When we click total fields on the Dashboard this page will be shown. In this page we can see how many fields are in this system. And Admin can edit or delete any fields from this page.

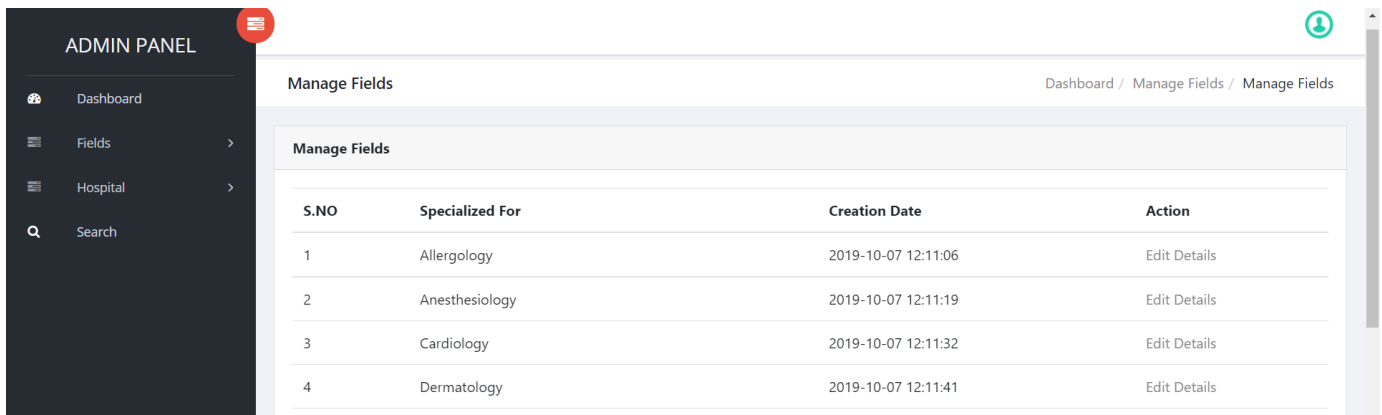


Figure 6.6.16: Admin Manage Fields

Search Hospital: The following figure 6.6.17 shows the admin search option. It's especially for Admin. Admin can search a name or hospital fields.

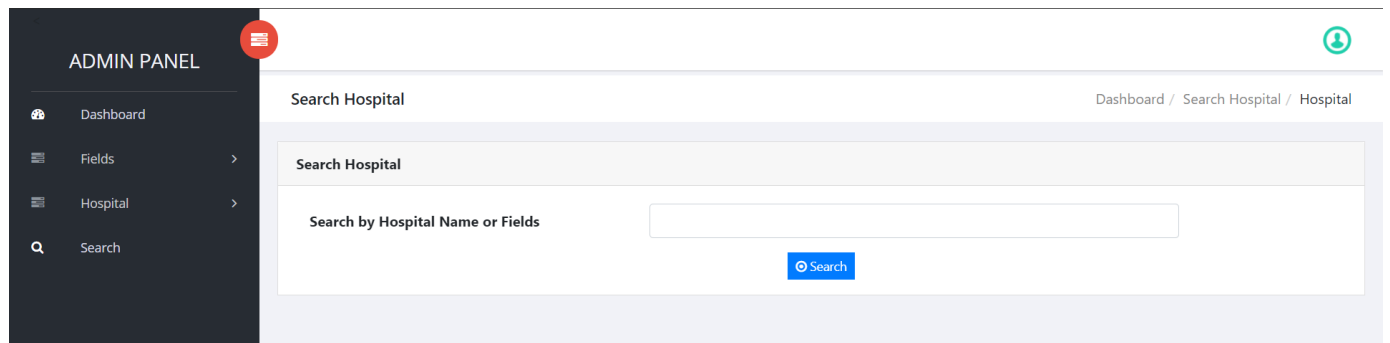


Figure 6.6.17: Search Hospital

Search Hospital Details: The following figure 6.6.18 shows the all-hospital details. When search completed admin can see this page. Admin show the hospital that admin search. Admin can edit or delete information from this page. And admin can also edit or delete from the sidebar.

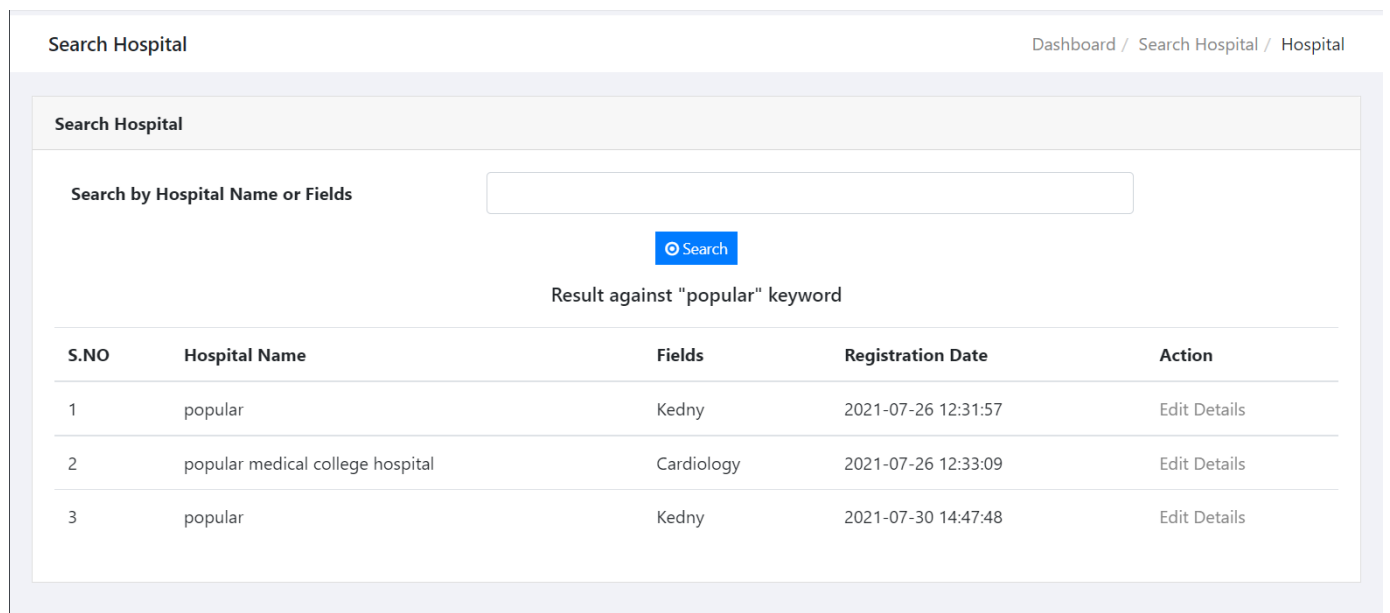


Figure 6.6.18: Search Hospital Details

Manage Hospitals: The following figure 6.6.19 shows the admin manage hospital. In this page all hospitals are shown. Admin can also delete or edit information from this page.

ADMIN PANEL

Manage Hospitals

Dashboard / Manage Hospitals / Manage Hospitals

S.NO	Hospital Name	Area of Fields	Registration Date	Action
1	popular	Kedny	2021-07-26 12:31:57	Edit Details Delete
2	popular medical college hospital	Cardiology	2021-07-26 12:33:09	Edit Details Delete
3	rajshahi medical collage hospital	Kedny	2021-07-26 20:45:59	Edit Details Delete
4	popular	Kedny	2021-07-30 14:47:48	Edit Details Delete

Figure 6.6.19: Manage Hospitals

CHAPTER 7

IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY

8.1 Impact on society

Online hospital seat management system fits for the website which offering the option to choose hospital without going there. It is providing the facility to give the feedback of the services of Hospitals and Clinic by using the website. At a time, it is providing the Location Information, Hotline no, Ambulance service, Direction to find Hospital, Official webpage link. It can take a great Impact to improve the hospital Service quality which is blessings for all of us in our society. On the other hand, it makes a great opportunity for IT Service Provider. A great part of our unemployment young generation can join for providing IT service to this website. Our IT service providers are being more available to the public users through online. At the same time, it is ensuring the more possibility to get IT Service in emergency time.

8.2 Impact on Environment

This project will make a great effect on social environment. This system is very easy and helpful to an educated people. This website that can be used anyone. Anyone can search hospital or hospital fields. So, there is no negative impact on the environment. It is a safer platform for all types of users. Our project will not have any negative impact on environment.

8.3 Ethical Aspects

To fulfil this website main objectives and goals we should maintain some Ethical aspects which has been described below:

- Admins will have to evaluate the information of this website is right or wrong because it can have a great impact to any patient.
- Every information and data should check and updated within a short period of time.
- Hospital Authority need an extra person to handle this software.

8.4 Sustainability Plan

Sustainability for Online hospital seat management system is a judgment about whether the program, as currently constructed, will meet the demands of all users today and in the future. The evaluation of Online hospital seat management system sustainability requires examination from more than one standpoint. For example, in future when the patient will be discharged from the hospital then the empty seats will be updated. But now it is being done manually.

CHAPTER 8

CONCLUSION AND FUTURE SCOPE

9.1 Discussion and Conclusion

A developing country need digital system. This project makes a step to digital hospital system. This project pushing the country towards development. When everyone used it and give their opinion that will be a great gift for us and it will be a starting success for us. It will motivate us for future invention. The project Online Hospital Seat Management system is automation the working in a hospital. The software takes care of all the requirements of an average hospital and is capable to provide easy and effective storage of information related to patients that come up to the hospital. It generates update information about hospital seats. When we first determine to make and effective seat planning system then the main goals was to reduce patients and their family members harassment. Because there is no system like online hospital seat management in our country perfectly. Then we planned a design for our idea which are working perfectly. And finally, we have completed our project with our dedication and hardworking. And we will improve it day by day with more effectively.

9.2 Scope for Further Development

Now we are working with only seat plan system in hospital. In future we will work for other options of Online Hospital Seat Management System. We try our best for developing our website in present time. If we find any scope for developing in future, we want to develop and change something of our application. In future we will add some feature like online serial or appointment system for a hospital, Blood bank information, nearby hospital and rating wise searching. In future we will add rating wise list to the hospitals and we also add nearest hospital wise list.

REFERENCES

- [1] Saimanoj K, Poojitha G, Dixit KD, Jayannavar L. Hospital Management System using Web Technology. The Mattingley Publishing Co. Inc, vol 83, pp. 4493–4496, May-June 2020
- [2] Adebisi O.A, Oladosu D.A, Busari O.A and Oyewola Y.V, Design and Implementation of Hospital Management System, vol. 5, ISSN. 2277-3754, July 2015.
- [3] Luke Welling, Laura Thomson. Sams PHP and MySQL Web Development, 2nd edition, Paperback- 20 February, 2003, pp 105-209.
- [4] Learn about SILO.TIPS, available at <<<https://silotips.com/download/hospital-management-system/>>>, last accessed on 10/08/2021 at 11:33 PM.
- [5] Learn about WIKIPEDIA, available at << https://en.wikipedia.org/wiki/Project_planning/>>, last accessed on 10/08/2021 at 11.45 PM.
- [6] Learn about Course Hero, available at << <https://www.coursehero.com/file/73243777/Hospital-Management-System-Project-reportpdf/>>>, last accessed on 07/08/2021 at 11.05 PM.
- [7] Dr. SAJAN MATHEW, SOFTWARE ENGINEERING, 1st Edition, S. Chand & Company Pvt. Ltd, 2003, pp 170-180
- [8] Learn about WIKIPEDIA, available at << https://en.wikipedia.org/wiki/Business_process_modeling/>>, last accessed on 08/08/2021 at 11.45 PM.
- [9] Learn about WIKIPEDIA, available at << https://en.wikipedia.org/wiki/Use_case_diagram/>>, last accessed on 08/08/2021 at 09.45 PM.
- [10] W. Jason Gilmore “Beginning PHP 5 and MySQL 5 from Novice to Professional, 2rd Edition”, Jul 9, 2008, pp 100-150.
- [11] Learn about W3schools, available at <<<https://www.w3schools.com/>>>. Last accessed on 07/07/2021 at 1:33 pm.
- [12] Learn about getbootstrap, available at <<<http://getbootstrap.com/>>>. last accessed on 07/08/2021 at 10:10pm.
- [13] Learn about stackoverflow, available at <<<https://stackoverflow.com/>>>, last accessed on 07/05/2021 at 2:20am.

PLAGIARISM REPORT

Online Hospital Seat Management System

ORIGINALITY REPORT

21 %	16 %	1 %	19 %
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Daffodil International University Student Paper	2 %
2	Submitted to University of East London Student Paper	2 %
3	Submitted to The British College Student Paper	2 %
4	Submitted to CSU, Dominguez Hills Student Paper	2 %
5	Submitted to Amity University Student Paper	2 %
6	Submitted to University of Moratuwa Student Paper	1 %
7	www.slideshare.net Internet Source	1 %
8	dspace.daffodilvarsity.edu.bd:8080 Internet Source	1 %
9	Submitted to Arab Open University Student Paper	1 %

10	Submitted to University of Greenwich Student Paper	1 %
11	medlibrary.org Internet Source	1 %
12	pestrust.edu.in Internet Source	1 %
13	Submitted to University of Northumbria at Newcastle Student Paper	<1 %
14	Submitted to Ghana Technology University College Student Paper	<1 %
15	Submitted to MAHSA University Student Paper	<1 %
16	Submitted to Southampton Solent University Student Paper	<1 %
17	Submitted to Utkal University Student Paper	<1 %
18	Submitted to Aspen University Student Paper	<1 %
19	dspace.library.daffodilvarsity.edu.bd:8080 Internet Source	<1 %
20	scholarworks.calstate.edu Internet Source	<1 %

21	www.coursehero.com Internet Source	<1 %
22	docplayer.net Internet Source	<1 %
23	Submitted to TechKnowledge Student Paper	<1 %
24	Submitted to Universiti Sains Islam Malaysia Student Paper	<1 %
25	Submitted to Laureate Education Inc. Student Paper	<1 %
26	thedigitalprojectmanager.com Internet Source	<1 %
27	www.dcs.shef.ac.uk Internet Source	<1 %
28	eprints.utem.edu.my Internet Source	<1 %

Exclude quotes On

Exclude matches Off

Exclude bibliography On