e-Health Care System in Bangladesh

BY

Kh.Najmuzzaman

ID: 162-15-7670

Rabby Rayhan

ID: 171-15-9324

This Report Presented in Sectional Gratification of the Requirements of the Degree of Bachelor of Science in computer science Engineering

Supervised By

Ms. Most. Hasna Hena

Assistant Professor

Department of Computer Science and Engineering
Faculty of Science and Information Technology
Daffodil International University

Co-Supervised By

Mr. Abdus Sattar

Assistant Professor & Coordinator M.Sc

Department of Computer Science and Engineering

Faculty of Science and Information Technology

Daffodil International University



DAFFODIL INTERNATIONAL UNIVERSITY

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APPROVAL

This Project titled "A Web based project e-health care system in Bangladesh", submitted by "Kh.najmuzzaman", ID No: 162-15-7670, "Rabby Rayhan", ID No: 171-15-9324 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 will be held on December 5, 2021.

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Department of Computer Science and Engineering Faculty of Science & Information Technology Daffodil International University

Internal Examiner

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Department of Computer Science and Engineering Faculty of Science & Information Technology Daffodil International University

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Department of Computer Science and Engineering Faculty of Science & Information Technology Daffodil International University

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Professor

Department of Computer Science and Engineering United International University

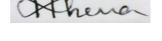
External Examiner

I

DECLARATION

We hereby declare that this project has been done by us under the supervision of **Ms. Most. Hasna Hena, Assistant Professor, and Department of CSE** at Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for the award of any degree or diploma.

Supervised by:



Ms. Most. Hasna Hena

Assistant Professor Department of CSE Daffodil International University

Co- Supervised by:

Mr. Abdus Sattar

Assistant Professor Department of CSE

Daffodil International University

Submitted by:

Kh.najmuzzaman

NAJMUZAMAN

Id Number: 162-15-7670

Department of CSE

Daffodil International University

Rubby Fayham.

Rabby Rayhan

Id Number: 171-15-9324

Department of CSE

Daffodil International University

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We must acknowledge with due respect the constant support and patience of our family

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kh.Najmuzzaman

Rabby Rayhan

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ABSTRACT

In this project a website based (E-health) System has been developed. The main purpose of this work is to serve Bangladeshi people in a digitalized and flexible way in the medical platform. In this work the project controls various nearby Doctors and nurses by using this website where all the data of these doctors, nurses, and patients are stored in a storage called a data center. People can search about the profile and appointment of an expert doctor that they Want to see from a specified area. The people no need to wait a long time in the Doctor's chamber. A critical patient is provided with the opportunity to arrange a doctor's service in their own home for immediate care through this website. People do not need to travel from one city to another for rare medicines, they can see the list of rare medicines through our Bangladesh website and search on this website for the medicines they need. A person can see all the service history that they get from this website through a database. If a jury patient needs any kind of nurse service, they can get that service through our website.

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CHAPTER 1

INTRODUCTION

1.1 Overview

"Technology" is the most famous topic in today's world which is being updated day by day. People in each sector are working to update their daily lives using new technologies as well as build their own networks nationally and globally. In terms of Bangladesh, we have outstanding new technologies everywhere, but we still have some barriers to keep up with the world's 1st Range countries. So, with this basement in mind, we want to work for medical science using new technologies to ensure proper human treatment and at the same time risk our lives. Historically people have relied on their physicians or various scientific experts for health information and advice. People search online for health information and advice for a variety of reasons. Worldwide, about 4.5% of all Internet searches are for health-related records. These include a growing older population, and healthcare providers emphasize the primary duty of patients treated for illness to maintain and improve their personal health. In the meantime, a number of content providers have identified the academic and financial benefits of providing online health information. However, we have created a web-based e-healthcare system to help people and offer them a flexible platform. The place where the user can easily find the nearest doctor is called "Doctor Finder". There are many medical centers and hospitals in Bangladesh. Many go to those hospitals as patients. But those hospitals lack facilities. As such, there is no standardized management, and the main problem for patients is to hire the doctors they really want. Patients suffer the most from this problem. Which finds an easy way to reduce the patient's bad time as well as ensure better treatment. With this web-based e-healthcare system, a patient can easily find the doctor they need in a specific area around their area and most importantly, a patient can easily get a doctor's appointment. They can also find a doctor who specializes in any sector. In this case a patient can save his time and reduce his life risk. The Internet allows information to be shared in the form of text and images and can keep people in touch with up-to-date new information from some of the most prominent resources in clinical careers. The testers provided in this paper are part of a larger initiative aimed at bridging the gap in our knowledge of how real international buyers compare statistics and recommendations online.

1.2 Motivation

The main reason for the interest in the Doctor Finder and Doctor Home service system is to ensure better for the people of Bangladesh, taking quick treatment as well as risking their lives. This website is largely based on scientific remedy service. Will be used for this website Helping people get doctor appointments, finding blood donors .You can find back medicines and doctors in the surrounding and selected cities in Bangladesh. This web also can be helped by finding the various kind of specialized doctors like medicine Cardiologist, Dentist, Urologist, Gastrologist and so many specialized doctors. A person can be appointed by a doctor in a flexible way. For example, a person can contact a doctor in his free time via this website by appointing a doctor's schedule. In this app we offer a feature that divides time in many slots. So, in that case a patient can meet a doctor by choosing his time and date.

1.3 Objectives:

- 1.To create an online base e-health system, so that people can easily see their schedule and hire a doctor.
- 2.To swallow the risk of life.
- 3.One of the most important services is that people can save their prescriptions and any kind of hospital related report through our website. It can help people for their future treatment. They can easily download their documents. Patients will be able to show their report or prescription to any doctor anywhere in Bangladesh through our website (e-health care system).
- 4.To create a database through which a patient can view all previous history of receiving services from this website.
- 5.To connect patients with doctors in a specific zone in this website so that people can easily get all appointments and better treatments from anywhere in Bangladesh.
- 6.Our web site also has a list of blood donors with the exact contact information so that people can easily find their donor, including the Specific Zone. Any blood donor can easily register on our website.

One of the most important services is that we provide rare medicines of any kind through our website. It can help people who are searching for these drugs in one city to another. They can save time and lead a better life.

This paper is organized into 6 chapters.

- 1. Chapter 1 provides an overview of the project.
- 2. The background study of our project is discussed in Chapter 2.
- 3. Chapter 3 provides an introduction to e-health care.
- 4. Written by Chapter 4 Design and Development Part.
- 5. Chapter 5 provides implementation and discussion.
- 6. The last chapter 6 contains the conclusion and the future scope of this work.

CHAPTER 2

BACKGROUND

2.1 Introduction

Basically, a thesis paper consists of two main parts in a background study. Related The work that has been done in the past of the project for which the paper was written and Nearby work that has been done in current or ongoing work. So based on The background study of this theory will be written here for history and surroundings Work recognition.

2.2 Literature Review

The study presents a distributed Healthcare company information Portal (HEIP) and clinic information systems (HIS) framework for use at Taiwan college clinics across the country (NTUH). A single sign-on solution has been installed for the clinic client relationship management (CRM) in HEIP. The consequences of the recently advanced Outpatient data structures (OIS) are discussed in HIS. [1] Future HEIP plans with CRM-oriented capabilities are addressed, including e-mastering, far-flung session and prognosis (RCD), and vaccine offerings. Finally, the incorporated HEIP and HIS architectures based on middleware technologies are provided, along with the possible methodologies. The preliminary overall performance of multimedia, time-based facts exchanges via the wireless HEIP facet are gathered to evaluate the architecture's performance. So, this is a study based on a web portal representing the medical quarter on a website published in 2006[2]. Traditionally, exercise advice has been given in person, but patients increasingly turn to the internet for health counsel. As a result, patients are given contradictory advice from various sources and must pick which websites to trust and which to disregard. Thirteen people with high blood pressure participated in a longitudinal study in which they looked for facts and guidance about their condition to understand better how customers make these decisions. [3] A content analysis of the organization discussions found support for a tiered model of belief, in which distrust or rejection of websites is based on design aspects and acceptance or selection is based on material content elements such as supplier credibility and personalization. [4]. Can folks who are not technologically savvy do it? This is the central question in human exploration. What essential aspect of the invention helps them live a more comfortable life? A medical breakthrough that decreases pain compliments the body's general performance and prevents most people from dying prematurely. [5] Telecommunications have

always been built to a higher standard. So, keeping a website with a concept uploaded in 2014 [6] is a possible way to assist folks. E-technology is utilized to improve healthcare and health care. It is used to prevent and distribute education, diagnosis, therapy, and care forms freely supplied via digital technology on occasion. [7] It encompasses concepts like telemedicine, mhealth, telecare, public fitness, mental health, and telehealth as an open umbrella concept. These new modes of transportation result in new types of care, such as 'combined' care, which combines traditional mental health care with online therapies [8]. One of the most critical sources of fitness information is the world wide web. Clients of non- scientific experts have primarily relied on fitness websites to meet their health-records requirements, which include access to the authority's policy on health and social care data. As a result, keeping a website with a concept uploaded in 2018 [9] may be a plausible way to assist humanity.

2.3 Related Works

There are some personal internet websites of some medical or hospitals in Bangladesh. They have their own medical doctor's facts handy on those websites. For example, the Apollo & Square medical center has its website for patients [10] [11]. Furthermore, a web blog in Bangladesh attempts to merge information from several medical universities and hospitals into a single blog, which is quite similar to our work. They have entered a list of doctors and created a sign-in option. People can therefore register on this website and create their id. Essentially, they do not provide the ability to appoint doctors, and this does not apply to all of Bangladesh's cities. [12] Furthermore, certain hospitals, such as Apollo and Square, have built separate websites that are only pertinent to the hospitals and doctors that they contain, as well as all services. In Bangladesh, certain mobile phone companies provide an online health system. [13] [14] [15] Examples include Grameenphone's "Tonic Doctors," Robi and Airtel's "My Health," Banglalink's "Health Link," and so on. However, in terms of those services, this operator charges a hefty fee and has age restrictions for users. The main drawbacks of this service are that individuals can only seek advice from a small number of doctors and that you must use the operator's sim cards. However, for our project, we created a website as well as an app that will have a list of all hospitals in Bangladesh. This app and website provide services to people from all walks of life, from rural to urban. People can select a hospital category based on their financial circumstances. There is also the option of a pharmacy, ambulance, and online prescription, among other things. In any case, we feel that our work will stand out in Bangladesh and play a significant role in the medical field.

2.4 Limitation

- > The implementation language, for example, has some technical constraints.
- > There are certain ethical or legal concerns.
- ➤ It appears that a better internet gathering is required.

2.5 Scope of Problem

People's Diagnostics records contain sensitive information that should not be made available to unapproved individuals in order to maintain the security, respectability, and confidentiality of the records. Simultaneously comprehending data needs to be available whenever endorsed clients require it for legitimate medical reasons. Attacks on a patient's medical records or reports, as well as their personal information, can result in serious consequences such as patient humiliation, disgrace, and, in the worst-case scenario, identity theft. Security needs to be broken down even more as the population grows.

2.6 Challenges

a) Concerns about security and fraud

No one can overhear virtual visits, which would breach privacy and confidentiality rules. Medical records, doctor and nurse portfolios, and medicine reports include sensitive data that should not be shared. Telehealth devices may gather and transmit data on actions such as substance abuse, unwanted access and alteration of information, authentication of the sender, and secret data containers for additional data.

b) The Production of Keys

There is a chance that customers will not want to use cryptography, meaning security would be compromised. Client administration should be so simple that they do not even notice it. Encryption should be included in the system. It should not be possible to turn it off in any way. Similarly, if there is no unsure mode, there is no opportunity for someone to communicate decoded data unintentionally.

c) Patient data collection:

Collecting patient data is difficult because no patient is willing to share his or her medical information.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

A business process model (BPM) is a tool that allows you to create a flowchart. It generates a model that depicts the proper data flow from beginning to end. BPM can be used to describe the project's capacity. Almost every engineering project has a business process model. A well-established business process model aids in increasing the speed of work before beginning the project implementation effort.

A business process model allows the user and developer to see the project in a variety of ways. Places are the entity in our project. The program categorizes all of the relevant information for various E-health services. After a thorough search, the application will present the user with the requested services. Regardless, the user can go through the application's many areas and obtain the necessary information independently.

3.2 Requirement Collection and Analysis

A broad characterization of the planned rationale and condition for programming a work in progress is an essential detail. Here, we examine our structure to determine the number of items we will need. The system's requirement for scrutiny is demonstrated quickly here. This task is free of charge in order to gain access to a large number of customers. Furthermore, customers can use the web program to access their preferred Blood Donor information, Nurse and Doctor information and viewing Diagnostic Prescription. Plan of Business Demonstration, Use Case Demonstration, Data Model Demonstration, and Implementation Prerequisites are the main essentials of our framework.

The following models would be included in the admin panel:

- > Create a new visit window.
- ➤ Ability to find Nurse and Doctor on user demand.
- ➤ View important information regarding the Blood Donor information and Diagnostic Prescription, Booking System and others staff etc.

3.3 Use Case Modeling & Description

Use case model of the user is given below in figure 3.2

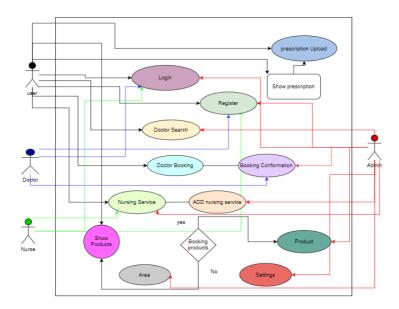


Figure 3.2 Use Case Model for User

Use Case Description for User

In software and systems engineering, a use case is a list of actions or event steps typically defining the interactions between a role (known in the Unified Modeling Language as an actor) and a system to achieve a goal. The actor can be a human or other external system.

3.3.1 Use Case of Admin and User: Admin Panel:

Use Case 01: Nursing Service.

Primary Actor: Admin

Precondition: Internet Connection

Secondary Actor: User

Main Success Scenario: Nursing service information will be display on screen and also admin can edit nursing services information.

Exception Scenario: No data added because of internet connection.

Use Case 02: Product Booking

Primary Actor: Admin

Precondition: Internet Connection.

Secondary Actor: User

Main Success Scenario: Admin can add, update, customize price about diagnostic products.

Exception Scenario: No data found because of internet connection.

Use Case 03: Doctor Area

Primary Actor: Admin

Precondition: Internet Connection

Secondary Actor: User

Main Success Scenario: On this section, admin can add area of doctor at home services.

Exception Scenario: No data added because of internet connection.

Use Case 04: Prescription

Primary Actor: Admin

Precondition: Internet Connection

Secondary Actor: User

Main Success Scenario: In this scenario, admin can delete and store prescription.

Exception Scenario: No data added because of internet connection.

Use Case 05: Admin-Doctor

Primary Actor: Admin

Precondition: Internet Connection

Secondary Actor: User

Main Success Scenario: Admin can manage doctor booking confirmation system.

Exception Scenario: No data added because of internet connection

Use Case 06: Admin-Doctor Search

Primary Actor: Admin

Precondition: Internet Connection

Secondary Actor: User

Main Success Scenario: Admin can manage doctor Search information.

Exception Scenario: No data added because of internet connection

Use Case 07: Registration

Primary Actor: Admin

Precondition: Internet Connection

Secondary Actor: Admin can manage doctor, user, nurse registration system.

Exception Scenario: No data added because of internet connection

Use Case 05: Login

Primary Actor: Admin

Precondition: Internet Connection

Secondary Actor: User

Main Success Scenario: Admin can manage doctor, user, nurse login update, delete customize

system.

Exception Scenario: No data added because of internet connection

User Panel:

Use Case 01: Login

Primary Actor: User

Precondition: Internet Connection

Secondary Actor: Admin

Main Success Scenario: User can use his/her id and password for login into system.

Exception Scenario: No data found because internet connection.

Use Case 02: Registration

Primary Actor: User

Precondition: Internet Connection

Secondary Actor: Admin

Main Success Scenario: User can register by his/her information to complete registration in

system.

Exception Scenario: No data found because internet connection.

Use Case 03: Dashboard

Primary Actor: User

Precondition: Internet Connection

Secondary Actor: Admin

Main Success Scenario: Click the Dashboard button and one can see all information of one need.

Exception Scenario: No data found because internet connection.

Use Case 04: Doctor Search

Primary Actor: User

Precondition: Internet Connection

Secondary Actor: Admin

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Main Success Scenario: On this section, user can see doctor booking appointment, doctor search,

doctor boking conformation.

Exception Scenario: No data found because internet connection.

Use Case 05: Prescription upload

Primary Actor: User

Precondition: Internet Connection

Secondary Actor: Admin

Main Success Scenario: User can upload prescription seeking for store in system.

Exception Scenario: No data added because internet connection.

Use Case 06: Nursing Services

Primary Actor: User

Precondition: Internet Connection

Secondary Actor: Admin

Main Success Scenario: On this section, user can book Nursing services, schedules Nursing

services on basis of amount.

Exception Scenario: No data found because internet connection.

Use Case 07: Diganotic Products

Primary Actor: User

Precondition: Internet Connection

Secondary Actor: Admin

Main Success Scenario: User can see view his/her need products and available for purchases from

our system.

Exception Scenario: No data found because internet connection.

3.4: Logical Data Model

The relationships between entity sets recorded in a database are depicted in an entity-relationship diagram (ERD). In this case, an entity is a data component. ER diagrams, in other words, depict the logical structure of databases [8]. The entity-relationship diagram depicts the relationship between the database's entity sets (ERD). The ER diagram can be used to depict the logical structure of a database. It delves as deeply as possible into the database and describes the data model. The graphic depicts all of the entities and their relationships. All of the entities' attributes and the main key [9] and foreign key [10] are defined here. The application's ER diagram is

shown in the following figure.

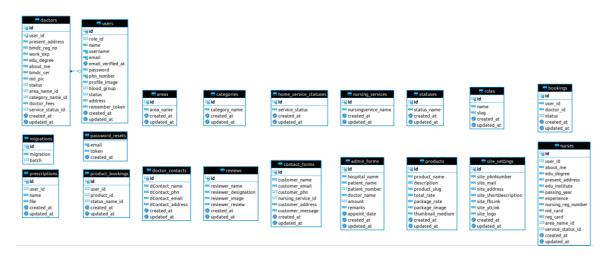


Fig: 3.4 ER diagram

3.5 Design Requirements

The most essential task for completing the project is determining the requirements for designing the entire project. The other side of the development is entirely dependent on framework planning. This is a visual representation of how the system will operate.

- ► The access of the system will open for administration. The principal authority in the administration.
- ► The complete framework will be checked by the administrator. Also, show your support for and rejection of any solicitation.
- ► Admin is providing information about Doctor and Nursing services and accepting booking requests and others features.

CHAPTER 4

DESIGN SPECIFICATION

A design specification is a detailed document providing information about the born of a project to set criteria the developers will need to meet [4]. Its use is called for where a structure or product has to be specially made to meet a need.

A design specification is a statement that describes how a design for a system will be created. We'll exhibit the front-end and back-end design of our mobile application, website and admin panel in the Design Specification section. We'll also go over the many tools and platforms that we employed in this project.

4.1 Front-End Design

The frond-end sought to make an introduction layer at first. It showed the client that collaborating with our framework is the best option. The front end is the most essential component of improving an online platform. The consumer side zone is also known as the front end. When customers visit a website, the goal is to make sure the information is well-organized and easy to navigate—advancement of the web from the front. From Wikipedia, the free encyclopedia, jump to the path, seek. The process of creating HTML, CSS, and JavaScript for a website or Web application so that a user can see and interact with it directly is known as front-end web development or customer-side web development. A back-end designer is a programmer who develops the intellectual back-end and the computational logic, programming framework, or data set. Engineers develop components and highlights that a client may access through a web browser.



Figure 4.1: Front-End Design

Become a front-end web developer by completing the following steps: -

- Learn how to use HTML and CSS, as well as JAVASCRIPT, JQUERY, and BOOTSTRAP. Moreover, we will get better at it.
- Make things. It is one thing to experiment with (small) UI elements.
- Read.
- Front-end development is more than just creating a website.
- Our life will be saved if we use version control.
- Act as a go-between.

4.1.1 HTML

HTML is the foundation of any website. Without first mastering HTML, it is impossible to establish a website. We will miss out on many unique features if we solely utilize HTML to build our site page. Other steps, such as CSS, can make a page more customizable. As a result, we've started using this language to make our internet pages more attractive and valuable. In addition, to make our web pages more dynamic, we use JavaScript content.

4.1.2 CSS

The abbreviation for "Cascading Style Sheet" is "Falling Style Sheet." Cascading Style Sheets

are used to plan the layout of Site pages. They can be used to identify content styles, table sizes, and other page-specific characteristics that should be expressed in HTML. CSS's primary purpose is to separate a web page's content (expressed in any markup language) from its presentation (created using Falling Templates). CSS offers several benefits, including greater substance accessibility, increased flexibility, and the ability to regulate various chronological display aspects. It also assists in decreasing the presentation's multidimensional nature and, as a result, saving time.

CSS allows you to select different style designs and rules based on your needs and provide a comparative HTML answer many times.

4.1.3 BOOTSTRAP

Bootstrap is an open-source JavaScript framework designed by the Twitter group. It's a mix of HTML, CSS, and JavaScript code that's meant to make creating user interface components easier. Bootstrap was also updated to include HTML5 and CSS3 support. The front-end framework is another name for it. Bootstrap is a collection of free tools for creating websites and online apps. It provides fonts, outlines, gets, courses, and other interface components in HTML and CSS-based layout formats and optional JavaScript extensions.

4.1.5 JAVASCRIPT

JavaScript is a programming language for prototyping. This means that models are used in most JavaScript articles, such as String. Composition based on a show PC program is a sort of inquiry-driven programming in which methods for cloning existing papers that serve as models are used to achieve direct reuse (also known as inheritance). [5]

4.1.6 JOOURY

JQuery: Question is a JavaScript library that is tiny, fast, and lightweight. It is multi-staged and can accommodate a wide range of projects. It combines several simple actions that need multiple lines of JavaScript code with processes that can be performed with just one line of code whenever they're required. A lot of the more complicated aspects of JavaScript, such as AJAX calls and DOM management, can be reduced for significant savings. [6]

JQuery is a JavaScript library that is quick and light.

> JQuery stands for "make less achieve more" and means "organize self-ruling."

The following are the key features of JQuery:

> HTML control

➤ DOM control

- > DOM element selection
- CSS control
- > HTML occasion approaches
- Module extensibility
- > AJAX
- > HTML event method

4.2 Back-End Design

Similar to client-side development, the back end is the machine that runs a site that the customer does not see or openly partner with, but it routinely falls short without hesitation. Incorporate smooth functionality and data from the database into the software. The setup is a server-side vernacular blend of database and item writer that continues to run on web servers and cloud servers. The front end is sometimes referred to as the client-side, and it is frequently considered when putting together a website. A back-end engineer is a type of computer programmer who creates a clear back end and a computational technique of reasoning for a website, programming, or information system. The expert creates fragments and features that a client can access via a front-end application or structure in a circuitous way.

They can be viewed as a contraption or organization in media transmission, while the back is the structure that supports this organization.

Fig 4.2: Back-End Design

Become a web designer for the back end:

- ➤ Become familiar with PHP and XAMPP. Furthermore, We will get better at it.
- ➤ We should have a better understanding of databases.

The terms front end and back end are used in programming to describe the tensions between the presentation layers and the data layer, which can be a piece of programming, a physical system, or hardware.

Although some presentation work is done on the server, the client is typically viewed as the front end, while the server is viewed as the back end in the client-server show.

There may be several levels between the gear and the end-user while programming.

Each has back and front-end part which can be explored separately. That reflects the essential component being unraveled by providing an easy-to-use interface, while the back typically handles business logic and data storage.

They can be viewed as a device or organization in media transmission, whereas the back is the structure that supports this organization.

- ➤ Learn PHP and XAMPP to become a back-end web developer.
- > we must have a deeper understanding of database management

4.2.1 PHP

"PHP: Hypertext Preprocessor" is an abbreviation for "PHP: Hypertext Preprocessor." PHP is an open-source scripting language that is widely used. PHP can conduct system limits, such as making, opening, reading, structuring, and closing records on a framework. PHP can manage structures, such as gathering data from records and adding extra information to a report. It has the ability to encode data.

4.2.2 XAMP

XAMPP is a free and open-source cross-organization web server stack group created by Apache Companions, consisting mostly of the Apache HTTP Server and Nginx Server, MySQL database, and interpreters for PHP and Perl programming languages.

4.3 Interaction Design and UX

Interaction design, often abbreviated as IxD, is "the practice of designing interactive digital products, environments, systems, and services." While the digital side of this statement is true, interaction design is also useful when creating physical (non-digital) products, exploring how a user might interact with it [6]

Maintaining excellent and easy contact between the system and the user is critical for the project's success in any application. In particular, this type of application, "SOHOZ DHAKA," requires regular data updates from users to deliver improved service. In such instances, awkward user interaction can lose users' attention and be detrimental to the application's and website's features. We can identify the user's problem and fix the problem they encountered while using the program by using the interaction design approach. The user's interaction with an application, on the other hand, determines how the user feels when using the app and website. The user interacts with the system.

We had numerous individuals test our application for UX. Most of them felt the application's user interface is welcoming and valuable, while some claimed it needs more diversity in marketing Vehicles Services and Machines shop, Booking and other staffs.

4.3.1 Interaction Design

User experience design, or UX design, is incomplete without interaction design. The way we communicate with our brand and our clients or users is called interacting design. We ensure how to benefit our users in this section.

4.3.1.1 Usability: Usability is more significant in the UX system; usability refers to how engaging and accessible our website is and how quickly we can go from one page to the next. In this stage, we must consider user interface design elements such as the navigation bar, logo or icon placement, how familiar our website is, maintain consistency, and address any errors or defects. **4.3.1.2** Accessibility: The speed with which our site appears when searched on Google or another search engine is determined by accessibility. We must focus on SEO (Search Engine Optimization) in our industry so that when a user searches for our website, it is found much faster than other review websites.

4.4 Implementation Requirements

For client login, there is no client name or secret phrase in the framework. This framework is completely free for clients on this website. Clients can also propose us using their name and email address. So, complete the structure and send us the necessary data for a proposal. Participation setup is a method of delivering visual representations of an online organization that will be utilized for early proof of concept testing and later as judgments for producers and originators. Mockups, frameworks, and models are passed on by a correspondence maker. Regardless, a correspondence organizer can plainly use client inquiries, field studies, and organizational setup to create this collaboration framework. A percentage of the time, the correspondence organizer is also the experience creator, and other times, the jobs are separate. The association organizer thinks about the all-inclusive plan a lot of the time, but every now and again they don't.

Usage is an affirmation of a certain assurance or figuring as a program, component, or another PC structure through PC programming and sending in programming construction. For a given specified or standard, there may be several executions. Web programs, for example, contain programmatic enhancements and implementations of Internet Consortium-proposed subtleties Programming tongues are used in the instruments. In, there is a remarkable case. When a powerful class performs an interface, it poses a barrier to organized programming; for this reason. This is the strong class of the interface, and it connects the procedures that are used.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Front-end Design

Front-end web development, also known as client-side development, is the process of creating HTML, CSS, and JavaScript for a webpage or Web application so that a consumer can see and interact with it directly. The challenge with front-end development is that the tools and tactics used to create a site's front end are always changing. Therefore, the creator must constantly consider how the field is changing. The goal of website design is to guarantee that when customers visit the site, they see content organized in a way that is both easy to understand and relevant. This is further complicated by the fact that clients today utilize a diverse range of devices with varying screen sizes and purposes, necessitating the designer to take these factors into account while planning the site. They must ensure that their site appears correctly in various projects (cross-program), varied working structures (cross-stage), and specific contraptions (cross-device), which necessitates careful foresight on the maker's side.

5.2 Implementation of Database

The usage plan is when you set up the DBMS on the appropriate hardware, redesign the database to function best on that hardware and programming stage, then create and load the data into the database. Create the database as well as the tables. Data should not be burdened. The steps for utilizing the database are as follows: Adrienne Watt is a writer. The segmentation of the development procedure into a series of phases, or steps, each of which focuses on a different aspect of the improvement, is a crucial feature of programming development—waterfall in the SDLC.

- ➤ Life Cycle of a Database
- > Gathering requirements
- Research and analysis.
- ➤ Logical Planning.

- > implementation.
- > Putting the plan into action

5.3 Implementation of Interactions

The difficulty in implementing the relationship between features is a discretionary component concern in feature-arranged composition PC applications. If the interfacing features are optional, neither of the modules for those features can contain the affiliation code.

Separating such association into a backup module is a constrained technique for implementing it. In any event, it does not scale as the number of subordinates grows. This study demonstrates how to profitably complete subordinates for mixtures of attributes from each social affair. The inheritance of feature modules is used to execute a social occasion of features. A super component module serves as a standard interface for attendees at that gathering. It permits showing a non-select supplemental material for social situations along these lines. This study also shows how to use Highlight Gluon, a part-organized programming lingo that gives this technique mouth works. Composition with a feature

PC programs are a type of programming in which the source code for each component has deteriorated. Despite the fact that it began as a method for executing nearby classes, it has since evolved into a method for accomplishing similar programming tasks; such a collection of tasks is called item advertising. This allows you to create designs by simply selecting the features for that core thing.

5.4 Testing Implementation

The method to put an action for the planned course of action is known as use. The course of action should have been completed, and our objectives should be apparent before we recognize it. Each and every one of the activities described in the course of action was put to the test. Test content can also be used to convey instructions to a test execution device. The content for computerization is written in a programming

language that the device can understand. Manual test content refers to tests that must be performed manually rather than using a test execution mechanical assembly. The test techniques, or test content, are then surrounded in a test execution plan, which shows which methodology should be run first — sort of like a superscript. Creating a test system is another way to organize the tests such that the best testing can be done in the time available.

5.4.1 Testing of the Main System

Being the - landing page of the deployment entryway, it was attempted to connect to the database using the proper network. Inappropriate database linking was immediately repaired, and validation was conducted to ensure that enough information was recovered and shown without errors.

5.4.2 Testing of databases

Database testing was irritated by network and capability tests. The test started with the plan organized, ensuring that the correct information representation was made.

5.4.3 Database Server and Administration Tools

The database server enables the structure to store and retrieve data for the system's needs. The database association can use the association instruments to make fortifications or important updates to the site's database. One of our objectives is to reduce the structure's cost. As a result, we choose the XAMPP server for our database needs. It was chosen because it is a well-known and well-understood open source database system that is offered for free and is used by a large number of prominent association instruments.

5.4.4 Web Server

Any PC with an online or neighborhood connection can host a web page on the web server. It accomplishes this by associating a specific envelope on the area computer with the IP address of the PC. When a user from another PC tries to access the encouraging PC's IP address through HTTP, they are routed to the chosen root envelope shown in the web server's course of action report. We used the standard free source web server Warm for this system's ultimate goal, or, at the end of the day.

5.4.5 PHP server

The PHP server allows the software on the host PC to run PHP code and see PHP site pages.

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Interpretation in PHP the course of action organization structure was created using 5.6.0. With the tweak of the warm web server that was used, this PHP is just fantastic. The PHP server is available.

5.4.6 Apache Server

The Apache HTTP Server is a free and open-source web server that uses the internet to deliver web content. It has known as Apache, and it soon became the most popular HTTP client on the internet after its release. Although it is often assumed that Apache's name comes from its development history and process of improvement through patches and modules, this was proven incorrect in 2000. The term was revealed to be derived from the Native American tribe's reverence for its tenacity and durability. Before drive deep into Apache, let us define what a web application is and the typical architecture found in web apps.

5.4.7 Nginx Server

NGINX is an open-source web server that includes reverse proxy, caching, load balancing, and video streaming. It started out as a web server to provide the best possible performance and stability. In addition to being an HTTP server, NGINX can also act as an email proxy server (IMAP, POP3, and SMTP) and a reverse proxy and load balancer for HTTP, TCP, and UDP servers. NGINX is an open-source web server that includes a reverse proxy, caching, load balancing, video streaming, and other features. It started out as a web server to offer the best possible performance and stability. In addition to being an HTTP server, NGINX can also act as an email proxy server (IMAP, POP3, and SMTP) and a reverse proxy and load balancer for HTTP, TCP, and UDP servers.

5.5 Test Results and Reports

This project will help the people of Bangladesh to get a most flexible and simplest platform in medical region to take health service with quicker way. So, overall result of this project is the people of Bangladesh can easily get the doctor's appointment, find the nearest hospital or clinic, can see the nearest pharmacy, and can order the medicine from anywhere in Bangladesh. A login option has been created for patients and doctors by which they can make their own account here. However, a patient can see all the records about the preceding provider that taken from this website. The maximum interesting aspect is the people of Bangladesh can get all the facilities ©Daffodil International University

with the aid of sitting there domestic. They don't need to move and run to various places to see whether there are available doctors or not, whether the cabin is free or full etc. People can get all the opportunities from anywhere in Bangladesh from one city to another city.

- > Testing for browsing the website
- > Testing for Dashboard/ Home screen scroll.
- > Testing for Blood Donor's information process.
- > Testing for Diagnostics Prescription process.
- > Testing for Doctor at Home process
- > Testing for the Nursing System.
- > Testing for the login process for all participants.
- > Testing for the Booking process.
- > Testing for Contact of system.
- > Testing for Admin Panel process.

5.5.1 Home page of this system



This is the home page for our E-healthcare Services, as we see in Figure 5.1. The user may easily access and choose his or her needed health services.

Figure 5.5.1: Home page of this system

5.5.2 Login for all participant

Figure 5.5.2 shows how a user can easily log in using their user id and password.

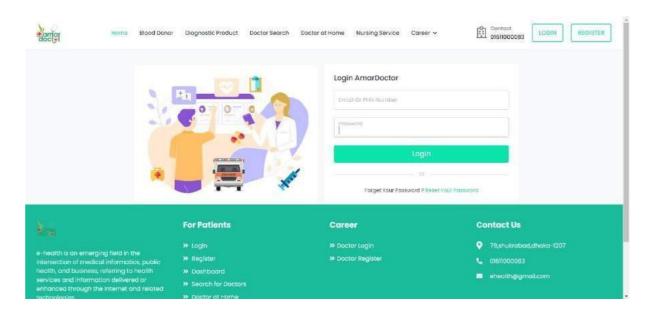


Figure 5.5.2: Login

5.5.3 Blood Donors Information

Figure 5.5.3 shows how a user can quickly locate Blood Donor's Information.

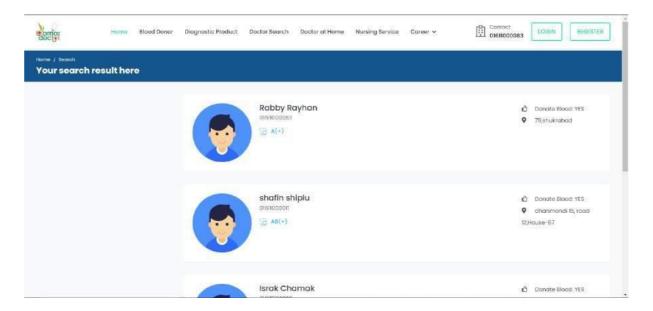


Figure 5.5.3 Blood Donor's Information

5.5.4 Digenetic Prescription

Figure 5.5.4 shows that a user may quickly look up Digenetic Prescription in the system.

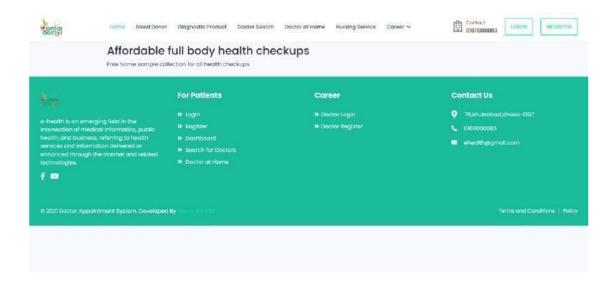


Figure 5.5.4 Digenetic Prescription

5.5.5 Doctor at Home

Figure 5.5.5 shows that a user may quickly look up Doctor at Home Information.

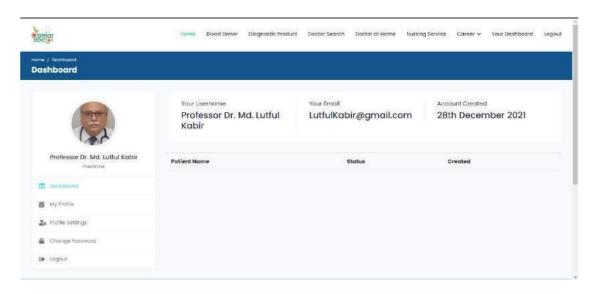


Figure 5.5.5 Doctor at Home

5.5.6 Nursing System

Fig 5.5.6 will allow us all information about Nurse and Nurse can add its information for our healthcare.

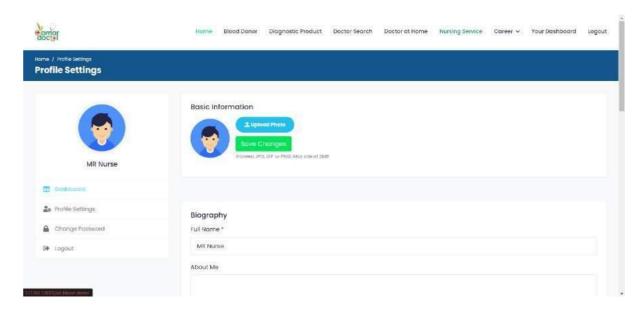


Figure 5.5.6 Nursing System

5.5.7 Booking States

Fig 5.5.7 will show all kinds of user quince IDs and track all kinds of booking like Doctor and product booking states.

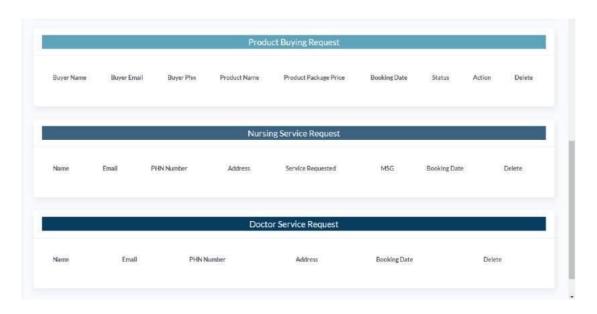


Figure 5.5.7 Booking States.

5.5.8 Contact of system

Figure 5.5.8 depicts how users can get in touch with us.

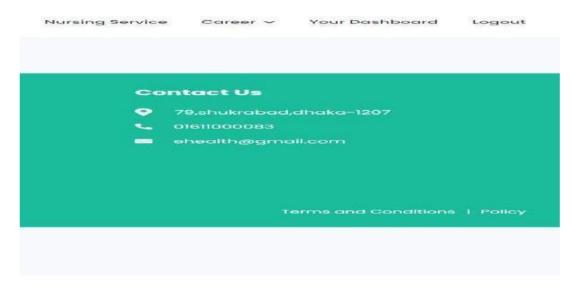


Figure 5.5.8 Contact of system

5.5.9 Admin Panel

5.5.9.1 Admin Dashboard

Figure 5.5.9.1 shows that an admin can see all of its activities on admin panel dashboard.

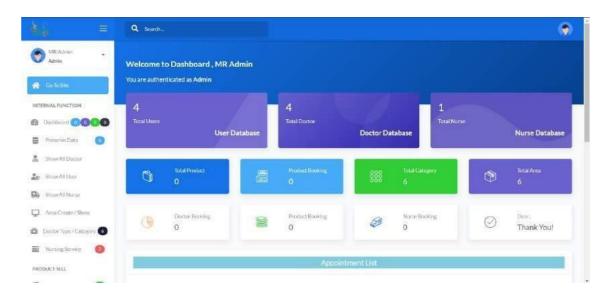


Figure 5.5.9.1 Admin Dashboard

5.5.9.2 Booking Request Management

Figure 5.5.9.2 shows that an admin can manage all kind of user booking request states system.



Figure 5.5.9.2 Booking Request Management

5.5.9.3 Custom information

Figure 5.5.9.3 shows that an admin can manage all kind of user Custom information

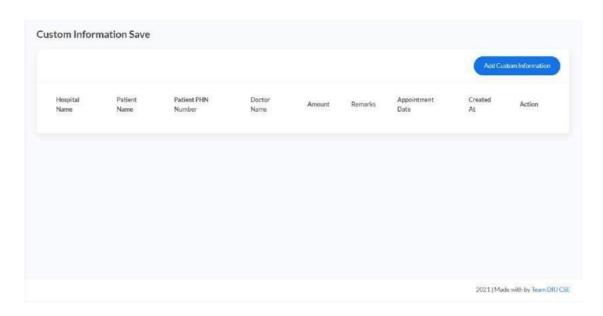


Figure 5.5.9.3 Custom information

5.5.9.4 All User information

Figure 5.5.9.4 shows that an admin can manage all kind of all user information

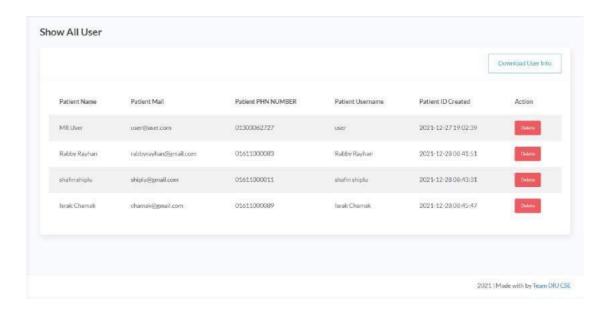


Figure 5.5.9.4 All user information

5.5.9.5 Nurse information

Figure 5.5.9.5 shows that an admin can manage all kind of user Nurse information

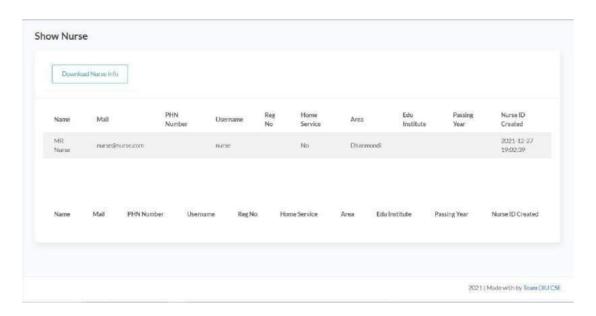


Figure 5.5.9.5 Nurse information

5.5.9.6 Add Area Information

Figure 5.5.9.6 shows that an admin can add area information for all participant.

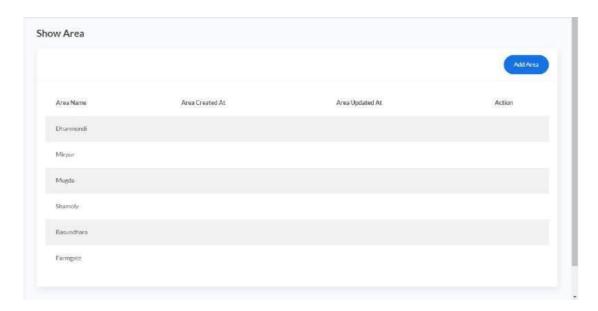


Figure 5.5.9.6 Add Area information

5.5.9.7 Category information

Figure 5.5.9.7 shows that an admin can manage all kind of user need Category information

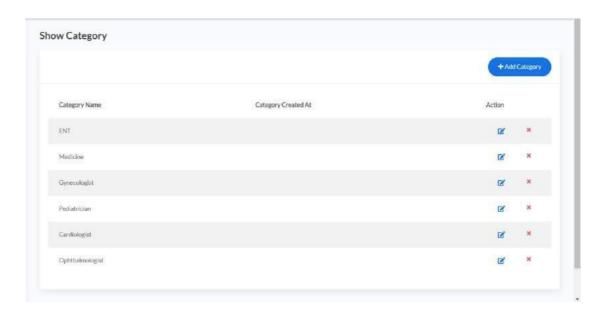


Figure 5.5.9.7 Category information

5.5.9.8 Nursing Services information

Figure 5.5.9.8 shows that an admin can manage all kind of Nursing Services information.

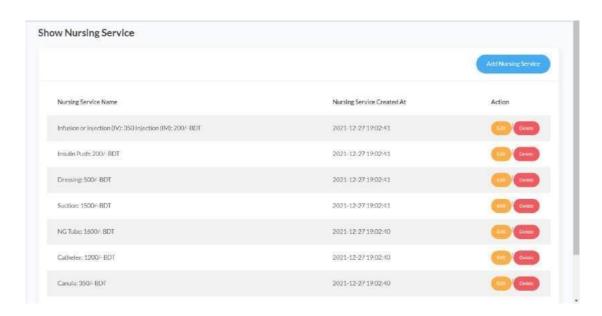


Figure 5.5.9.8 Nursing Services information

5.5.9.9 Add products

Figure 5.5.9.9 shows that an admin can add all kinds of user needed products.

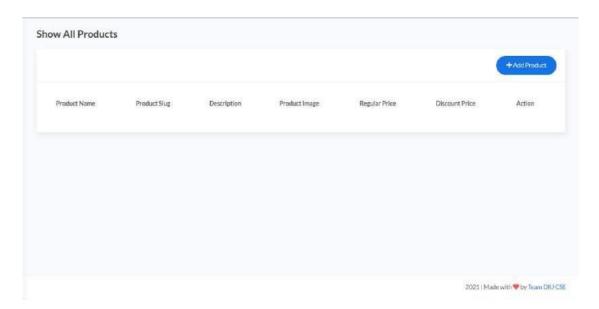


Figure 5.5.9.9 Custom information

5.5.9.10 Site Setting

Figure 5.5.9.10 shows that an admin can manage and add all essential data to control this website.

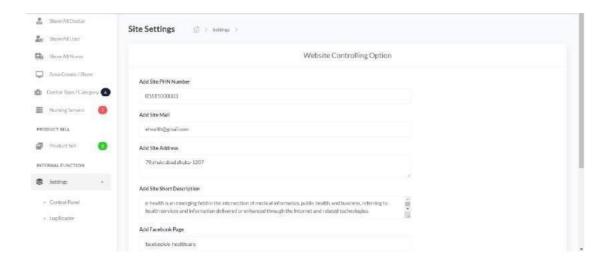


Figure 5.5.9.10 Site Setting

5.5.9.11 Site Setting Description

Figure 5.5.9.11 shows that an admin can add all important descriptions to make this website user- friendly.



Figure 5.5.9.11 Site Setting Description

5.5.9.12 Showing logs.

Figure 5.5.9.12 shows that an admin can see its website's errors and make faster decisions based on showing logs.

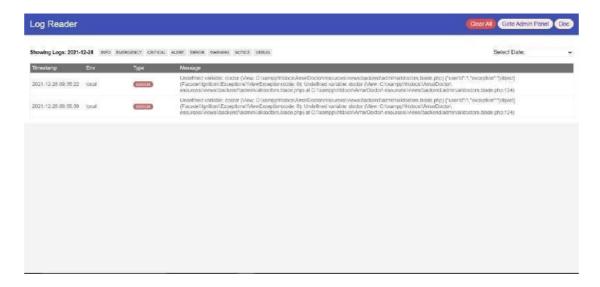


Figure 5.5.9.12 Showing logs

5.5.10 Footer

Figure 5.5.10 depicts the footer as the final component of the system. Users may simply access their many uses links, make suggestions, and contact us.

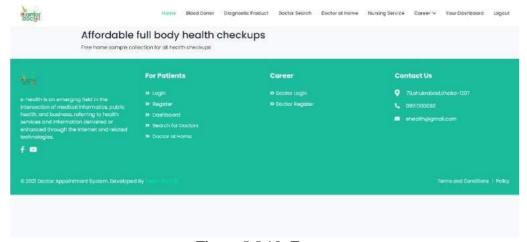


Figure 5.5.10: Footer

PHP(Laravel) code implementation

Figure: PHP (Laravel) code for our system

HTML and CSS Front-end Code

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CHAPTER 6

IMPACT ON SOCIIETY, ENVIRONMENT AND SUSTAINABILITY

6.1 Impact on Society

impact of society save transport costs proper treatment

save time

we asked the patient's of what they think were their benefits from ICT health services in hospital, patient's said that they saved transport cost and they got proper treatment .we asked 110 patient's was if they think that the doctor's nurses and health staff in hospital are expert in using ICT health services.

6.2 Ethical Aspects

Users can see what type of course and what type of service we are providing without logging. But when the user wants to see the details of our services and provide.

6.3 Sustainability Plan

We believe that through our web we can reduce the distance between Doctor and Patient.

CHAPTER 7

CONCLUSION AND FUTURE SCOPE

7.1 Conclusion

Our application is mainly made for the regular people who use android mobile phones. Now almost everyone uses android mobile phones. Through this medium, we tried to make an application which is not only useful but also is a compulsory product for people. For that purpose, we added. so many useful features like prescription alarming, doctor interaction information, medical information, emergency ambulance, and blood donors.

We have added some important first aid tips also. The location of the nearby hospitals is one of the most important adding and challenging works of this project. In the future, we will try to improve our application with extra features. This application will help you to choose the right medicine and doctor interaction information with the conditions of your health.

7.2 Scope for further Development

We are working on it and there are a few of scopes to development in this Application like

- > We can use video conferences with doctors and prescribe from doctors.
- > We can add taking foods with the health condition. That's why, we can always
- maintain our protein and calories level.
- ➤ An emergency contact is added for an emergency situation and notified nearest hospital using GPS.

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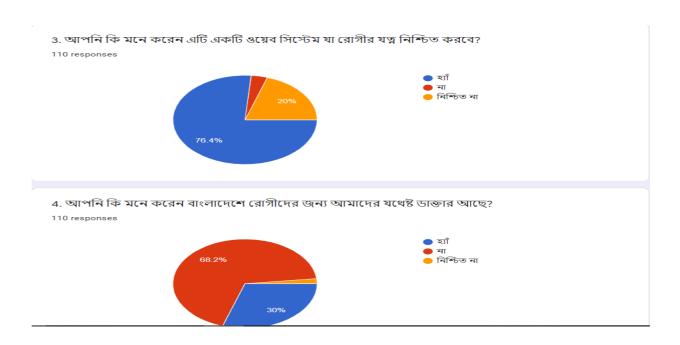
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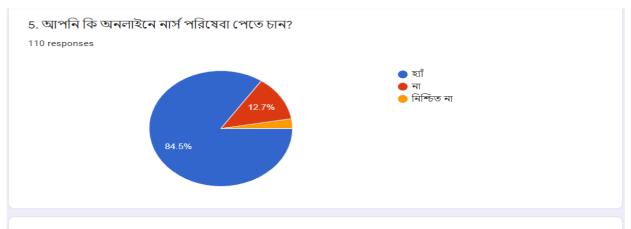
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APPENDIX

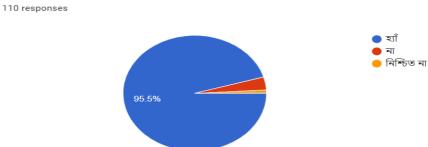
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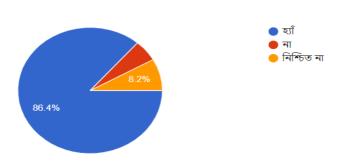


6. আপনি কি আপনার বাড়ি থেকে অনলাইনে আপনার অ্যাপয়েন্টমেন্ট নিশ্চিত করতে চান?



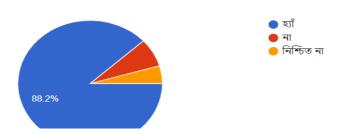
7. আপনি কি মনে করেন ই-হেলথ কেয়ার একজন ওয়েব রোগী এবং একজন ডাক্তার/আপনার মধ্যে ব্যবধান কমিয়ে দেবে?

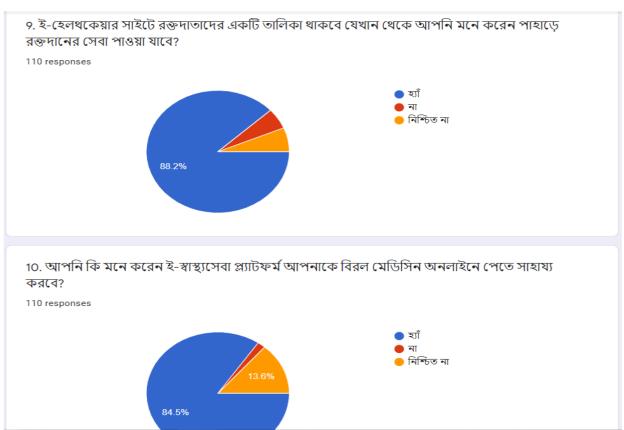


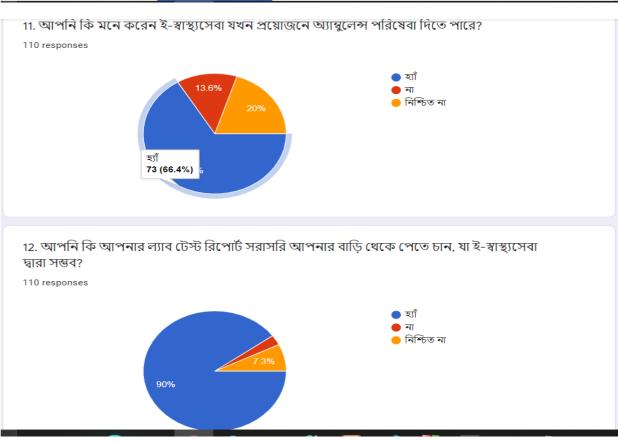


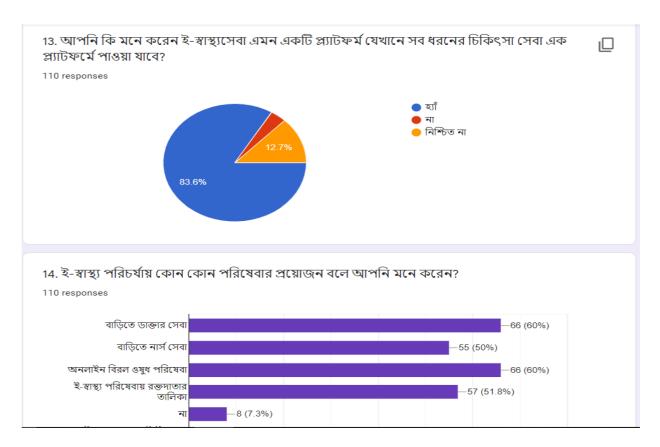
৪. আপনি কি মনে করেন ডাক্তার এবং রোগীর মধ্যে এখনও দূরত্ব আছে?

110 responses



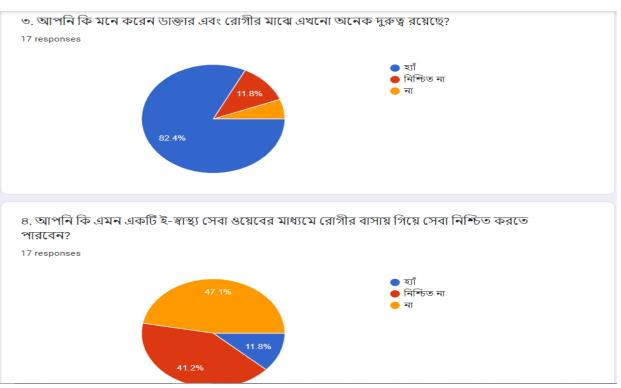


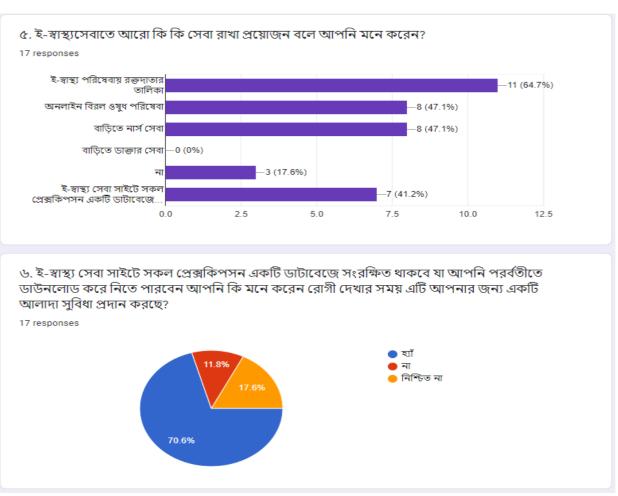


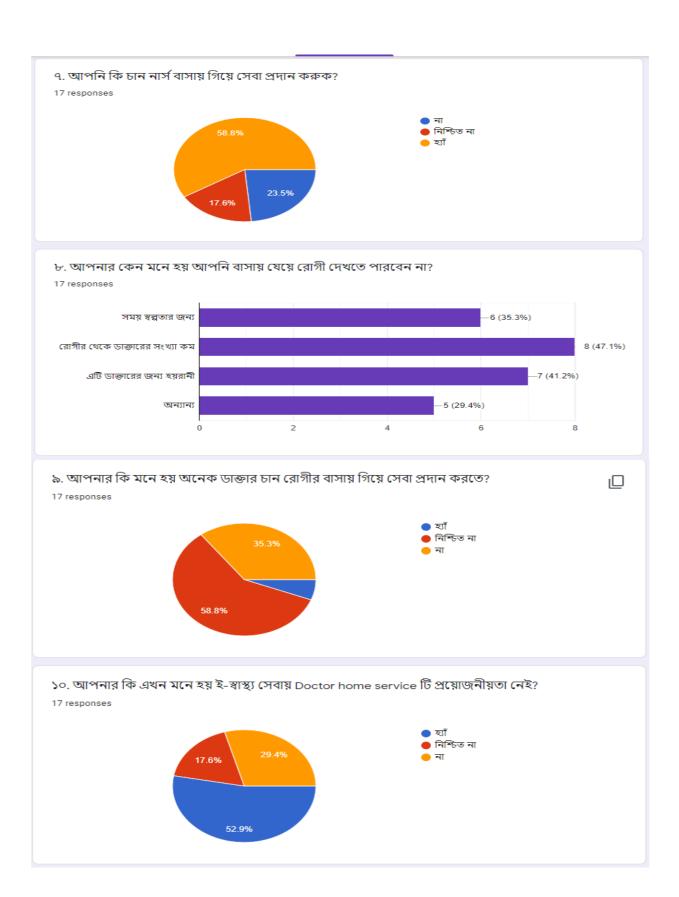


Doctor Survey From & Probability:









Plagiarism Test of Our Project Report:



