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APPROVAL


This Project titled “**Smart Medicare**”, Submitted by **Partha roy**, ID No:182-16-324 to the Department of Computing & Information Systems, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computing & Information Systems and approved as to its style and contents. The presentation has been held on- 21-11-2022.

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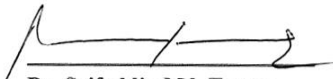
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I hereby declare that; this project has been done by me under supervision of Abdullah Bin Kasem Bhuiyan, Lecturer, department of Computing and Information System (CIS) of Daffodil International University. I am also declaring that this project or any part of there has never been submitted anywhere else for the award of any educational degree like, B.Sc., M.Sc., Diploma or other qualifications.

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Acknowledgment

First of all I would like to express my gratitude to almighty creator by whose grace I was able to complete the documentation in my project. Also, I would like to thank my family, my parents, who have given me courage, without their sincere support, I would never have been able to complete this project properly and successfully. And most of all whom I would like to thank the most with whose good wishes I was able to complete my project in a healthy and beautiful manner and according to the right direction is my respected teacher and my supervisor Abdullah Bin Kasem Bhuiyan. It would have been impossible for me to complete this assignment satisfactorily without the guidance and assistance of the lecturers of Daffodil International University.

Finally I would like to express my gratitude and thanks to my parents and my respected teachers for their support that I have dared to undertake and complete my project.

Dedication

I would like to dedicate the project work to my parents. Because of their tireless work today I am able to study in a good place and do a project and those who have given me the best effort so that I can do this project well. And I also express my gratitude to my friends who helped me when I faced minor problems by discussing them and trying to solve them and they helped me with that time so I thank them from the bottom of my heart.

Executive Summary

Smart Medicare is an online based medical project. The main purpose of which is to avoid the trouble of the hospital so that a patient can get the service very easily at home. Through the online platform system, a patient can book a nurse for any type of disease and get quality care at home. As a result, a patient will get the right quality service by reducing the extra bin of the hospital sitting at home and if the patient wants, he can buy the subscription for the hospital. This

system is mainly based on nurses and mainly employed people. Those who are basically small families and all are busy will benefit a lot from using this system. Because it is not possible for a busy family to visit the hospital every day to see the condition of the patient. In Bangladesh, there are many cases where the patient is left in the medical facility for full recovery even after he has recovered fairly well. And have to pay a lot of extra money which is impossible for a normal working man. So they can save both time and money by using Smart Medicare. And a patient can purchase hospital subscription through this system so that a patient can enjoy the maximum benefits using this system.

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Chapter 1 – Introduction

1.1 Introduction

In our daily life, we face a lot of problems. The disease is one of the most common issues for a person's life. Hospitals in Bangladesh often have to stay in the hospital for a long time due to minor reasons as there is no one at home to take proper care of the patient. And due to the low number of seats, the condition of the patients is bad and as a result the patients do not get the proper care. With the passage of time, the use of technology is increasing day by day. Everyone wants to get right quality and right service in less time and one of the medium is technology. Now so all sectors are using technology to sustain them. Similarly, Smart Medicare is a system that Bangladesh has not started yet or the use of the existing technology is not advanced. With this system, the patient will not have to suffer in hospital for normal problems and after serious problems, the working people will get many benefits and save money by using this system. In this context, we are going to create an easy website, faster and smooth appointment system between Smart_Medicare and the patient.

1.2 Documents contents

The project activities will be described based on the following chapters.

Chapter-1: Introduction

Brief Description and Summary of Smart Medicare.

Chapter-2: Initial Phase

In preliminary research, main aims and objectives, defects and background of the project and possible solutions.

Chapter 3 – Literature Review

Literature Review is based on registration problem domain is discussed, and that problem is solved and how to solve it is discussed and what are the new features and their limitations and finally the proposed method.

Chapter 4 – Methodology

In this chapter I will discuss some methods for my project that I can use in Smart Medicare. and recommend a method and plan how to implement it.

Chapter 5 – Planning

In this chapter I will outline the project planning and breakdown structure, time planning, modeling, risk identification and a Gantt chart for the project with resource allocation.

Chapter 6 – Feasibility

This chapter will calculate the feasibility and cost benefit of the project and analyze how well the method will work for the project.

Chapter 7 – Foundation

Data collection techniques to identify project user problems and solve them and what technologies to use will be discussed.

Chapter 8 – Exploration

The project's activities will be diagrams in this part. There will be demonstrations of prototypes of the new system as well as old system and new system schematics.

Chapter 9 – Engineering

The structure of Smart Medical will be shown through the structure diagram. And the interface will be designed.

Chapter 10 – Deployment / Development

This chapter will reveal the project's coding samples and a list of possible troubleshooting and development issues.

Chapter 11 – Testing

This chapter will examine the functionality of Smart Medical and perform various types of testing such as unit testing, integration testing, and project functionality to ensure safety.

Chapter 12 – Implementation

This chapter will cover all types of implementation techniques.

Chapter 13 – Critical Appraisal and Evaluation

Evaluation of initial goals, and critical evaluation will be covered in this section.

Chapter 14 – Lessons Learned

In this chapter I will present the problems I encountered in the project and how I learned from them and how I solved them.

Chapter 15 – Conclusion

This chapter of the project will explain what I have done and finally my experience in the project summary and documentation.

Chapter 2 – Initial Study

2.1 Project Proposal

Introduction

In our daily life we face a lot of problems. Disease is one of most common issues for a person's life. Hospitals in Bangladesh often have to stay in the hospital for a long time due to minor reasons as there is no one at home to take proper care of the patient. And due to the low number of seats, the condition of the patients is bad and as a result the patients do not get proper care. In this context, we are going to create an easy website, a faster and smooth appointment system between Smart_medicare and patient.

User and nurse can register in the project and create their own profile by logging in. Once created, the user can make a nurse apartment of his choice in that house. Users can also avail other services through online payment system.

Vision of this project is to create nurse patient handling management system that will help patients to book nurse appointment at home and and fulfil their prospects. The system also includes hospital subscription system modules that will help patient Financial gain. The system operates a variety of services at a time and patients can choose from all the services they need for booking.

2.2 Background Study

We see that during covid 19 there were not enough seats for the patients in the hospital as a result many people died due to lack of proper care. And the current situation is bad at this time using my system the patient can get the services properly by booking a nurse sitting at home as per the doctor's instructions. And those who have to stay in the medical for the usual time do not want to stay longer. With this, the patient can save money by purchasing a subscription to the hospital, which no online nursing appointment system has so far.

Families with only two to three members need people to look after them all day if one member falls ill or has to be hospitalized. But the environment in the hospital does not

adapt to the body, resulting in a sicker patient and an additional cost to the family in various ways. For those who need to stay in the hospital for medical check-ups after childbirth but do not have anyone to sit there to take proper care of them, online appointment booking has been created so that a patient can get services at home. So I have taken steps to implement the project by thinking about all those aspects.

2.3 Problem Areas

There are several issues we deal with on a daily basis. One of the most frequent problems in a person's life is illness. Because there is no one at home to properly care for the patient, hospital patients in Bangladesh frequently have to stay in the hospital for a very long time for very trivial causes.. And due to the low number of seats, the condition of the patients is bad and as a result the patients do not get proper care. In most of the Bangladeshi hospitals due to less number of seats, the common people do not get seats, as a result, they face various kinds of hardships in the hospital and it is seen that many people cannot get proper treatment due to the extra hardships and spend a lot of money, so they become disappointed. Also, people who are busy, if their loved one has a problem or if a family member is sick, then if they leave their work and spend time in the hospital, then they will have to face a lot of loss in their personal life. As a result, they use my system, both time and money can save. Also this system has an important feature that by using it the patient can easily get some commission on top of his total bill from any hospital thus they will get financial support.

In this context, we are going to create an easy website , faster and smooth appointment system between Smart_medicare and patient.

Feasibility Study

➤ Operational Feasibility (Based on different solutions):

Operational Feasibility: All information will be stored in the system by the admin, so the user can easily get any type of information at any time. This will make the

user happy and increase the usage of this system. all the inputs are all self explanatory which a patient can take very easily. Moreover, having a hospital subscription will make them more willing to accept it as it helps them save their earnings more. Training will also be conducted to inform users about the essence of the system so that they feel comfortable with the new system.

➤ **Technical Feasibility (Based on operational feasibility for different solutions):**

Web-based: It has a website as interface (font-end) users can log-in to this system from anywhere without any hassle of installation. And they can take all kinds of services from the system which reduces the hassle of a user .Compared to traditional installed software, most online apps are more consistent across platforms. Usually, a web browser, of which there are numerous, is the minimal need (Internet Explorer, Firefox, Chrome and Safari to name a few). So you can still run web apps whether you're running Windows, Linux, or Mac OS. By doing this, the user may quickly install updates over the web server without providing any form of update. As the system is a webpage, a patient or user can access any information by logging into the system at any time. The number of mobile users is high in today's era so being web based any patient or user can access it instantly from anywhere. And patient can easily access it from any device like Windows, Linux, Laptop, Desktop without any hassle.As a result, a patient can familiarize himself with this system in a very short time and enjoy it happily in any situation.

➤ **Economic Feasibility (Cost benefit analysis for different solutions based on operational and technical feasibilities):**

Being a web-based application, users will be able to access it very easily, so there is no need to incur any additional costs for the devices. Because if it was done only as a desktop app then each user would have to have a separate laptop or desktop and as a result the user would lose interest in it. Since it is web based, the user can log in anywhere if he has a

phone and if he wants to have a tab laptop with any device at any time, the resulting productivity gains can be expected. As smart medicare is web based, the cost is very low and the patient or user can avail this service anytime through laptop or mobile phone hence it can expect to provide increased profits.

➤ **Market research analysis based on the feasibility factors:**

I researched the nursing appointment system in Bangladesh whose main feature is to book nursing through a unique number. As a result, patients are hesitant about the nurse and no information about the nurse is uploaded to the system, and some common services are added to it. But the benefit of the patient is not considered in any of them, but by registering the user in my system, they can see all kinds of updated information of the nursing nurse and can see their rating. As a result, the patient will not have any doubts about what kind of service this service will be. Apart from this, a new module has been added to this system keeping in mind the patient's money, which is no nursing appointment booking system in Bangladesh till now and that is hospital subscription. If a patient buys a hospital subscription, he can get a certain amount of discount from certain hospitals, so ultimately it will focus mainly on working and middle class people to increase user interest.

2.4 Possible solution

Project users often face great difficulty in finding their requirements and various complications arise, so the system should provide all the necessary information for the user to find exactly what they need.

Chapter 3 – Literature Review

3.1 Discussion on problem domain based

Smart Medicare mainly focuses on the tail so that patients don't spend extra time and money, and they don't have to pay extra. Many a times patients are admitted to hospitals for minor reasons due to lack of proper attendants and due to less number of seats, patients are in critical condition and hence patients do not get proper care. In this context, we are going to develop a simple website, fast and smooth appointment system between smart_medicare and patient. Researching the point system of Bangladesh Nursing has shown that there is no such reliable website which makes a patient doubt to make an appointment from that system to a nurse at his home. Because the existing systems only provide information for the contract holder. But in my system I will put all the information of the nurse on my web side. And user can confirm from that and they can make nurse appointment with pleasure. And keeping in mind the benefits of the patients in the system, the hospital has kept the subscription system module which will help the patients financially. The system handles various services at a time and patients can choose from all the services required for booking. Some of the major issues are discussed here.

- The patient has to suffer in the hospital.
- Chances of catching new diseases are much higher.
- It costs the patient's family additional time and money.

3.2 Discussion on the problem Solution

Smart Medicare project is to develop a nurse patient handling management system that will help patients book nurse appointments at home and fulfill their potential. The system also includes hospital subscription system module which will help in financial gain of the patient. As the use of technology is increasing day by day and at the same time all information is driven by computers and databases. Regarding the following problem, there are a few solutions to take into account:

- **Authentication:** As my system has three modules and that names is admin, user and then it is hospital modules. Where in every case their user authentication will be checked when they want to enter the system and if they fail then they will not be able to log in to the system and only admin of full system can access all modules.
- **Access:** Only admin can access everything together in this system. And the user can see only his/her necessary functions such as selecting the nurse and showing all the information of the nurse which is very important for a patient.
- **Privacy:** Privacy is an important issue in online based systems. No one can access this system without user authentication. So VPN or different types of server network should be used to keep them safe.
- **Security:** Security is an important issue for every system. Only admin can access all the system. And the nurse's profile will also be managed by the admin so that outsiders cannot access the system ensuring complete security of the system. Since all the information of the nurse will be uploaded by the system admin, the admin will check and consider all the information of the nurse properly so that there will not be any kind of privacy problem in this system.

3.3 Comparison among the leading solutions

This modern age has come down as a boon for the use of information technology making life easier. So to make life easier, different companies have tried to solve the same system in different ways to benefit their users. Smart Medicare is an ideal system for this though. But still there are several other systems in the same place and well-known in Bangladesh currently the site's qualities, flaws and problems are highlighted below:

Information:

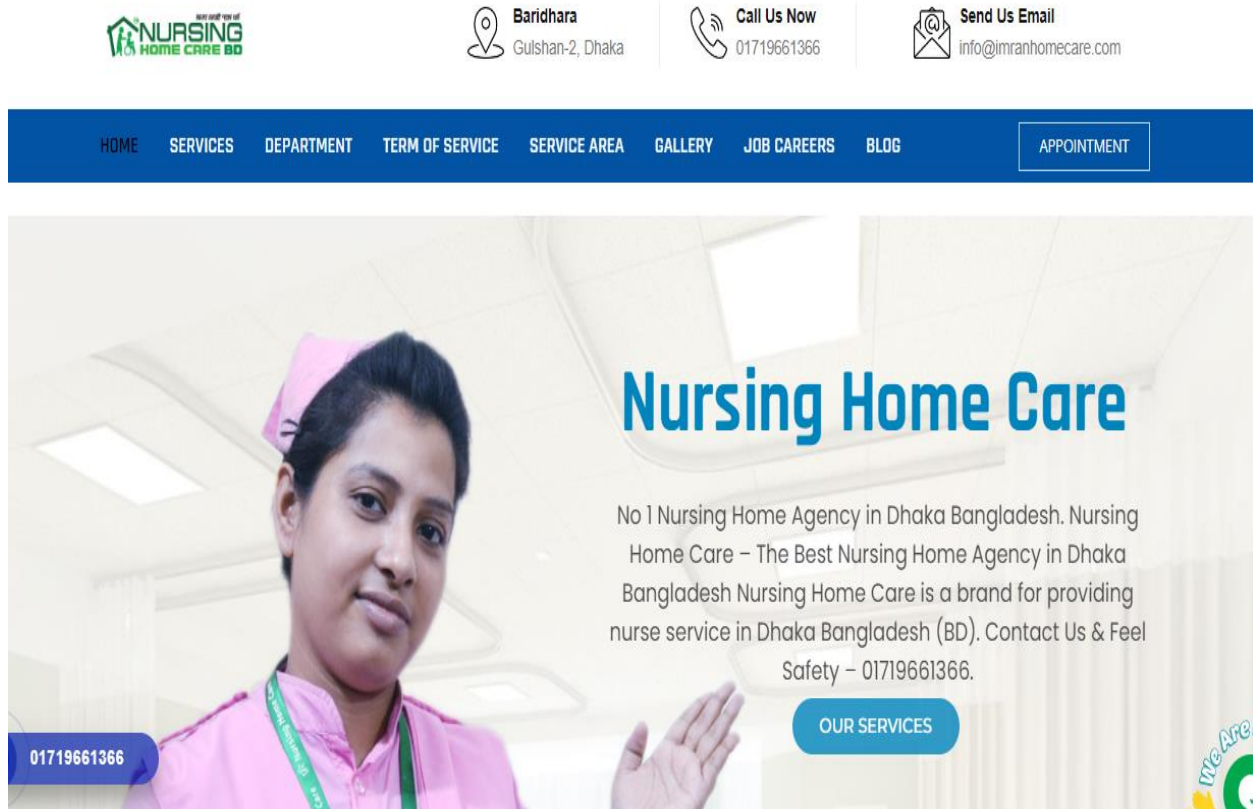


Figure 1 The overview of the site-1

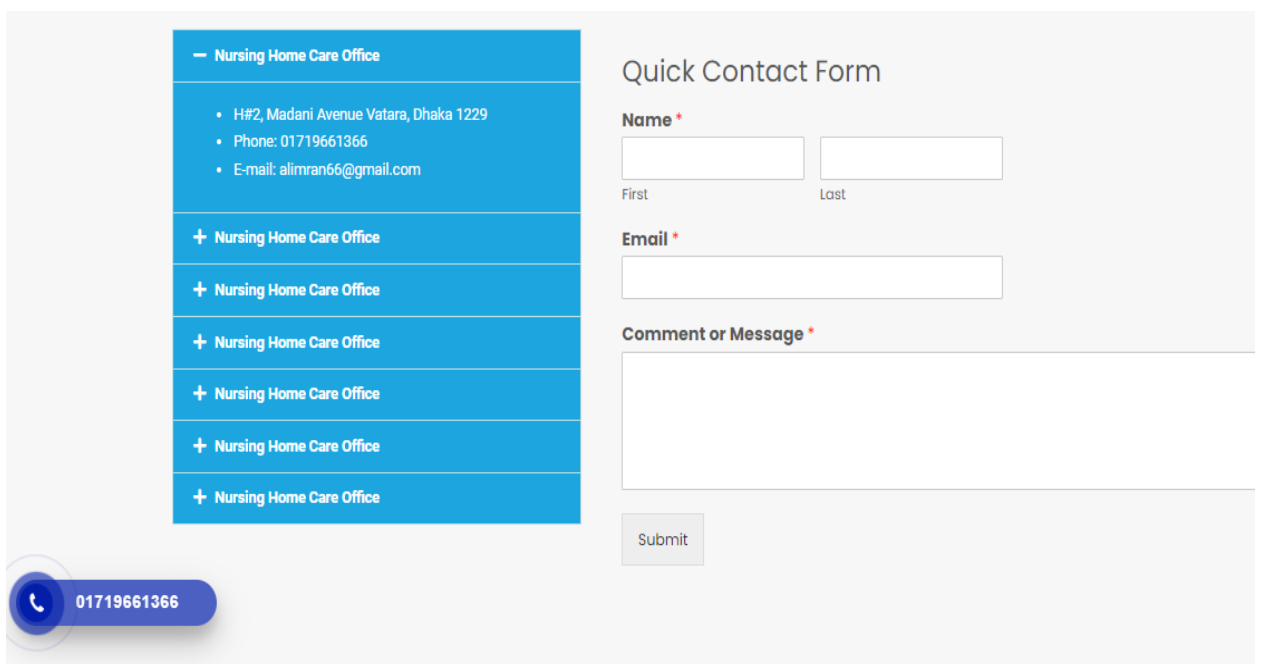


Figure 2 The overview of the site-2

Nursing Home Care BD

SERVICES

Nursing Home Care is a brand for providing nurse services in Dhaka Bangladesh (BD).
Contact Us & Feel Safety – 01719661366.



PHYSIO THERAPY AT HOME

Under this service, we are promised to maintain, restore, and promote not only physical function but also health and fitness. As per expert therapist suggestion, our therapist works almost 24/7 and prevents symptoms, develops disorders and functional limitations and disabilities that may be caused by disease, disorder. You needed physio therapist Contact us.



ONE CALL SERVICE

We provide medical equipment's and oxygen cylinder rent sell also refill for all client needs. The equipment's offered by us are very reliable and best price in Bangladesh and well researched. We always carry out a background check on every piece of equipment before use. Furthermore, equipment rental rates can be negotiated based on client budget constraints. We provide more experienced staff members based on the equipment home delivery in Dhaka.



OXYGEN SUPPORT

Under this service, we are promised to maintain, restore, and promote not only physical function but also health and fitness. As per expert therapist suggestion, our therapist works almost 24/7 and prevents symptoms, develops disorders and functional limitations and disabilities that may be caused by disease, disorder. You needed physio therapist Contact us.

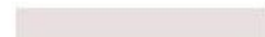


Figure 3 The overview of the site-3

<https://www.nursinghomecarebd.com/> Bangladesh

Best Features

- Easy to use this system.

limitations

- Bad Design.
- No information about nurses is provided in the system.

- The system is missing user reviews.
- Website works very slow.
- The system does not have online payment method.
- No profile of nurse is given in the system.

3.4 Recommended Approach

The performance of the new system will affect the performance of the old system, as can be seen from the aforementioned website analysis. So I am giving the aspects of the new system comparing it with the previous system:

- The new system is easy to use and user friendly.
- The system also has features for a hospital subscription system that would benefit patients financially.
- Users can create their own profile by registering the system.
- If the patient wants, he can make the payment online.
- Users can give feedback about the service.
- They can buy all the necessary medical equipment from the same site.

Chapter 4 – Methodology

Research methodology is essentially "how" certain research is conducted in practice. More precisely, it relates to the methodical methods used by the researcher when designing the study to ensure accurate results that meet the goals and objectives of the research. The software is advanced using a selected approach. The program improvement team is a computer that functions best from an extension that ensures the growth and efficient management of the company. They were picked because they insist that every strategy has advantages and disadvantages of its own. The selected strategy determines the progression's victory percentage. Consequently, we will describe how to thoroughly investigate acceptable aspects using chosen approaches and appropriate data in this chapter.

4.1 What to use

Computer code design technique heavily relies on software design methodology. Fluid models, agile computer code development, graphical models, spiral models, quick application development, collaborative application development, dynamic process development models, etc. are a few of the additional approaches for creating computer code. You can instruct in three different methods here. pros and cons.

Structured System Analysis and Design Method (SSADM) or Waterfall Model :

The first SDLC model used to guarantee project success in software code engineering was the waterfall approach. The earliest known example of computer code is this. The structure of this approach is comparable to that of classical computer code. True linearity is followed in this optimization. To put it another way, the phase won't function until the preceding phase is finished if any adjustments are needed to suit your criteria.

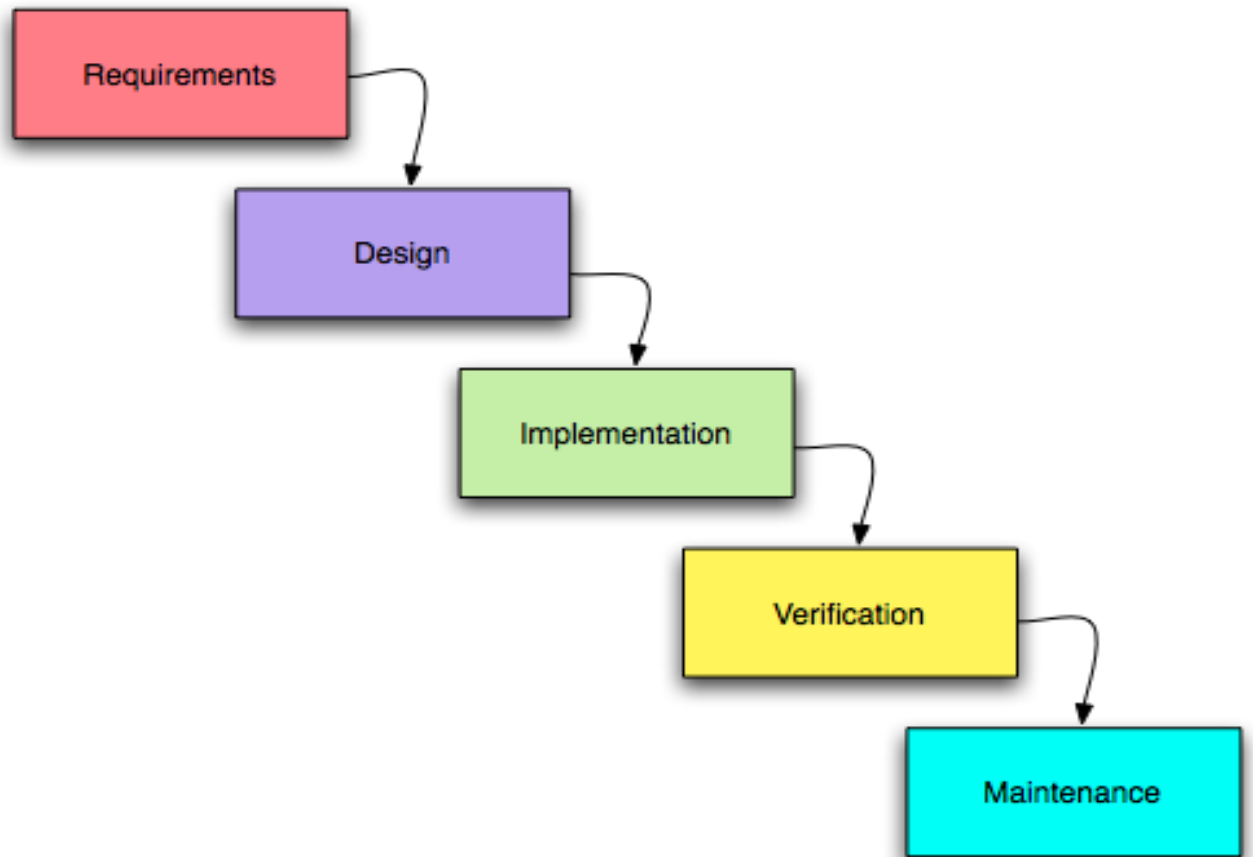


Figure 4 Structured System Analysis and Design Method (SSADM) or Waterfall Model

Advantage of Structured System Analysis and Design Method (SSADM) or Waterfall Model:

- This model is very easy to understand and easy to work.
- After completing each phase perfectly, the second phase starts.
- The model sets the goals early before starting the processes.
- The structure is simple and the functions are clearly understood.

- The waterfall model works very well for projects or systems that are small.
- All levels of work are done perfectly.
- With little client involvement, the project is mostly dependent on the project team.

Disadvantage of Structured System Analysis and Design Method (SSADM) or Waterfall Model:

- If there is a problem with any stage of the task, it must be resumed from the beginning.
- Because complicated projects regularly change their needs, the waterfall model is not advised for these projects. It is preferable to avoid using the waterfall model altogether.
- There is a lot of danger and uncertainty.
- Ineffective model for continuing, protracted projects.
- For developers and testers, documentation requires a lot of time.

Rapid Application development

A development paradigm called Rapido Application Development produces high-caliber development work. Rapid prototyping also works more quickly than other techniques. It is created in such a way that programmers who work rapidly may create a piece of software, make numerous updates, and maintain quality in line with customer expectations, providing credit to a good project for maximum advantages.

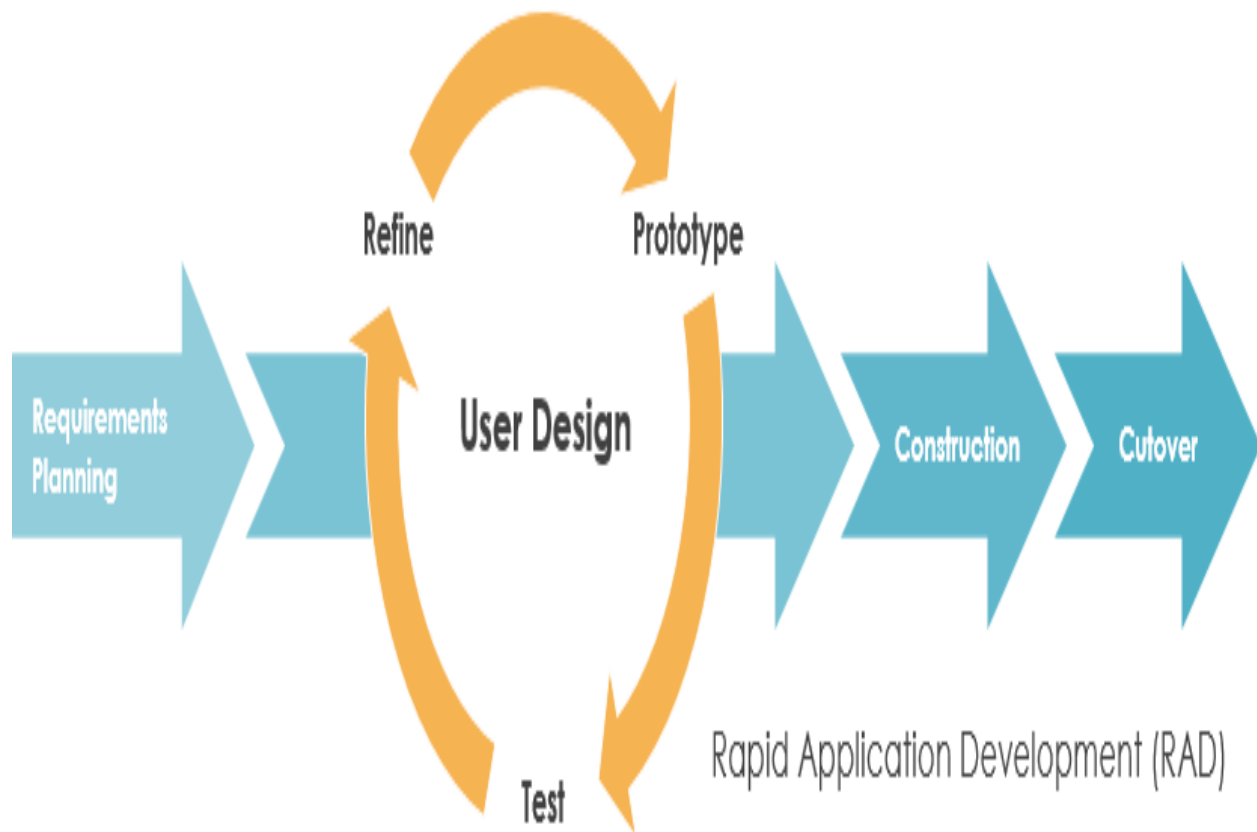


Figure 5 Rapid Application development Model

Advantage of Rapid Application development

- RAD is best used in projects where requirements may change frequently.
- being versatile and changeable
- Very Easy to use
- Deliverables may be transferred easily thanks to the use of scripts, high-level abstractions, and intermediate programs.
- Prototyping in nature has less chance of errors.
- Manual coding gets rasy because it results when using code and generating code.
- It can gain weight in a short period of time with few people.
- It is adaptable and flexible to use very easily.

Disadvantage of Rapid Application development

- If the project is not too big then it is better not to use this scheme.
- It is never appropriate to use it if the project has technical risks.
- A crass amount of app development happens because of a progressive start and it's all app development.
- Because there is no record of what has been done, it is challenging to track progress and problems.
- Tracking issues is difficult because we don't know how it's progressing when we use it to show what's been done.
- If the technical risk is substantial, it is not appropriate.

Choosing Methodology

Out of these two methodologies I decided to use DSDM method for my project. I think my smart medical project will be done very well by using DSDM method in the simplest and most beautiful way in a short time. Any firm may adopt DSDM since it guarantees timely delivery and high-quality products, both of which are obviously essential. It is essential to have a business understanding of DSDM-projects. Business representatives engage with advanced teams to achieve this. And DSDM includes methods that promote teamwork and facilitate verbal communication. Most notably, DSDM teams are being urged to embrace change to incorporate new perspectives to address new problems and manage them properly. and enables solutions to be developed based on a more thorough knowledge of the specifics in the solution.

4.2 Why to Use

To effectively satisfy the financial criteria within the allotted time window, the system must be highly specialized. Actions that have been strategically validated aid in achieving the goals while preserving the planned project's maximum value. The model will be simple to use and every phase can be finished flawlessly with my requirements, making it an excellent approach. By using the waterfall model, the project can be completed right from the beginning and recharged before any problems occur from the beginning. But in work

we should aim to fix our requirements from the beginning because if they are not correct then we have to start from the beginning of the waterfall model but if we can start the project by choosing the requirements correctly then the waterfall model is important for a project. By which method I can do my work very easily This is a very good mythology. Since it is a medium-sized project, working in accordance with the waterfall model would yield the best results, therefore I will utilize T in my project. The model is simple to create objectives and structure before beginning the process, and the function is well understood.

4.3 Sections of Methodology

There are various aspects of the DSDM that the development team must adhere to. These are :

- **Feasibility study Stage**

Project Economics This part of the project involves measuring the technical and operational capabilities of the proposed project and analyzing the work process.

- **Pre-project stage**

Project Budget Information and Conceptual Terms This section contains the fundamental prerequisites.

- **Requirement Gathering Phase**

Various strategies may cause problems in the project, which may render the project ineffective, and project functions and requirements are identified in this section.

- **Requirement Analysis and Prioritization Phase**

What are the requirements of the project which are very important for the projects are inspected. And prioritizing a technique max use prioritizing requirements.

- **Search and Engineering Stage**

This department is involved in conducting various sorts of investigations and resolving necessary phase issues in order to carry out an unchanged necessary investigation, make numerous inquiries, and decide what is essential for the strategic phase.

- **Review stage**

The system is enhanced at this stage by being tested against other created systems in the project and with the system's user; if it is determined that the system needs to be adjusted, it is then returned to the stage before.

4.4 Implementation Plans

Advanced applications are released when the project is near completion i.e. when it reaches its final stage. And if users find any kind of problem using it, they identify that problem and fix it later. The system cannot be activated until the detected problem is resolved. In this final stage everything is reviewed and using it errors are found or resolved after reconsideration the system will be ready for launch. Most of the decisions are made in this part of project quality and project configuration and project quality planning using projects. And when it is seen that everything in the project is in order then this system is ready for use. That is, if everything is fine, the system starts.

Chapter 5 – Planning

5.1 Project Plan

In this part of the department, all the work is divided over a certain period of time. That is, each department is separated and after doing them all the work is done within that time. with a start and an ending date and this section sets out the arrangements for the termination of the extension. A time frame is planned for the project or for the project within which the work is to be completed.

5.1.1 Work Breakdown Structure

Breakdown structure breaks down the extension into smaller parts and causes each task to be done within a time limit, thereby reducing the complexity of the project and a more productive way to complete the initiative, thereby reducing time and complexity. This structure justifies our effort because it keeps realistic deadlines and stays clear of any problems. The breakdown structure described above is a very suitable one for this project since without this crucial mechanism, it might be difficult to accomplish the project. If we don't use it in the project then the project will be more complicated and difficult to complete overall. As a result, the chart below the suggested structure divides it into sections and sub-components:

No	Task name	time	Start time	End time
01	User Authentication	10 days	02/05/2022	12/05/2022
02	Manage Patient Profile	15 days	13/05/2022	28/05/2022
03	Nurse Appointment Module	17 days	29/05/2022	15/06/2022
04	Hospital Subscription Module	20 days	16/06/2022	07/07/2022

05	Payment getaway	22 days	08/07/2022	30/07/2022
06	Communication process	10 days	31/07/2022	09/08/2022
07	Appointment process category wise	15 days	10/08/2022	25/08/2022
08	Manage Nurse profile	10days	26/08/2022	05/09/2022
09	Mail conformation	13days	06/09/2022	19/09/2022
10	Verify Subscribes and Managing Subscribes History	18 days	20/09/2022	08/10/2022
11	Notification System	10 days	09/10/2022	19/10/2022
12	User Feedback	10 days	20/10/2022	30/10/2022
Total		170 days		

Table 1 : Work Breakdown Structure of DSDM

5.1.2 Resource Allocation

Resource allocation is a particularly important part of the project as it enables the proper implementation of the project through planning. All resources are supervised in an organized way. And one of the most important aspects of project planning over extended periods of time since a typical project is discrete time with no team. Project resources such as analysts and user developers identify these. A certain quality of information is provided from them which makes the project more beautiful and well done in less time. And by doing this all the features of the project are very well known to the user The following is how resources are allocated for the BBSM project to satisfy job delivery deadlines:

Time box	Task	Resource
TB1	User Authentication	Analyst, User
TB2	Manage Patient Profile	Analyst
TB3	Nurse Appointment Module	Analyst, Designer, developer
TB4	Hospital Subscription Module	Analyst, developer, Tester, User
TB5	Payment getaway	Analyst, developer
TB6	Communication process	Analyst, Designer, developer
TB7	Appointment process category wise	Analyst, Designer, developer

08	Nurse profile	Analyst, Designer, developer, user
09	Mail conformation	Developer , user
10	Verify Subscribes and Managing Subscribes History	Analyst, Designer, developer
11	Notification System	Analyst, Designer, Tester, User
12	User Feedback	Analyst

Table 2: Resource Allocation list

5.1.3 Time Boxing

The most important part for a DSDM project is the time time box. Through this, the tasks can be completed on time. Tasks are divided into time boxes to meet the target on time. A specific team for a project works intensively to achieve certain goals. And given the fixed time in advance and allowing the work to continue until the target is reached, instead of time estimation it is more about the time it is used. As a result, a project becomes more user-friendly over time as complexity increases. The timebox strategy entails halting work

at the end of the period and assessing the outcomes rather than continuing to work until the objective has been achieved and analyzing the time spent.

SL	Task	Duration	Resource
TB1	User Authentication	10 days	Analyst, User
TB2	Manage Patient Profile	15 days	Analyst
TB3	Nurse Appointment Module	17 days	Analyst, Designer, developer
TB4	Hospital Subscription Module	20 days	Analyst, developer, Tester, User
TB5	Payment getaway	22 days	Analyst, developer
TB6	Communication process	10 days	Analyst, Designer, developer
TB7	Appointment process category wise	15 days	Analyst, Designer, developer
08	Nurse profile	10 days	Analyst, Designer, developer, user
09	Mail conformation	13 days	Developer ,user
10	Verify Subscribes and Managing Subscribes History	18 days	Analyst, Designer, developer

11	Notification System	10 days	Analyst, Designer, Tester, User
12	User Feedback		Analyst

Time Box	Deliveries	Task Size	Total time (Days)
TB1	Design Specification	Compound	10
TB2	Frontend Design	Compound	15
TB3	Database Design	Complex	17
TB4	Patient can registration and Login	Compound	20
TB5	Patients will be able to apply for Nurse	Complex	22
TB6	Patients will be able to apply for Service request	Complex	10
TB7	Admin can customer service authentication	Complex	15
TB8	Patient can get Hospital Subscription	Complex	10
TB9	View Subscription list each hospital authority and System admin.	Compound	13
TB10	Each hospital authority can verify subscription list	simple	18
TB11	Patient Get confirmation	Simple	10
TB12	Patients will be able to feedback the service	Simple	10
TB13	Unit Testing and Blackbox testing	Compound	4

TB14	Resolve Issues identify	Compound	3
TB15	Release project	Simple	2

Table 3: List of the time boxes

5.1.4 Gantt Chart

Because it is utilized in project management, the Gantt chart is particularly significant for a project. One of the most helpful methods for visualizing the activities involved in any event or project across time is via a Gantt chart.

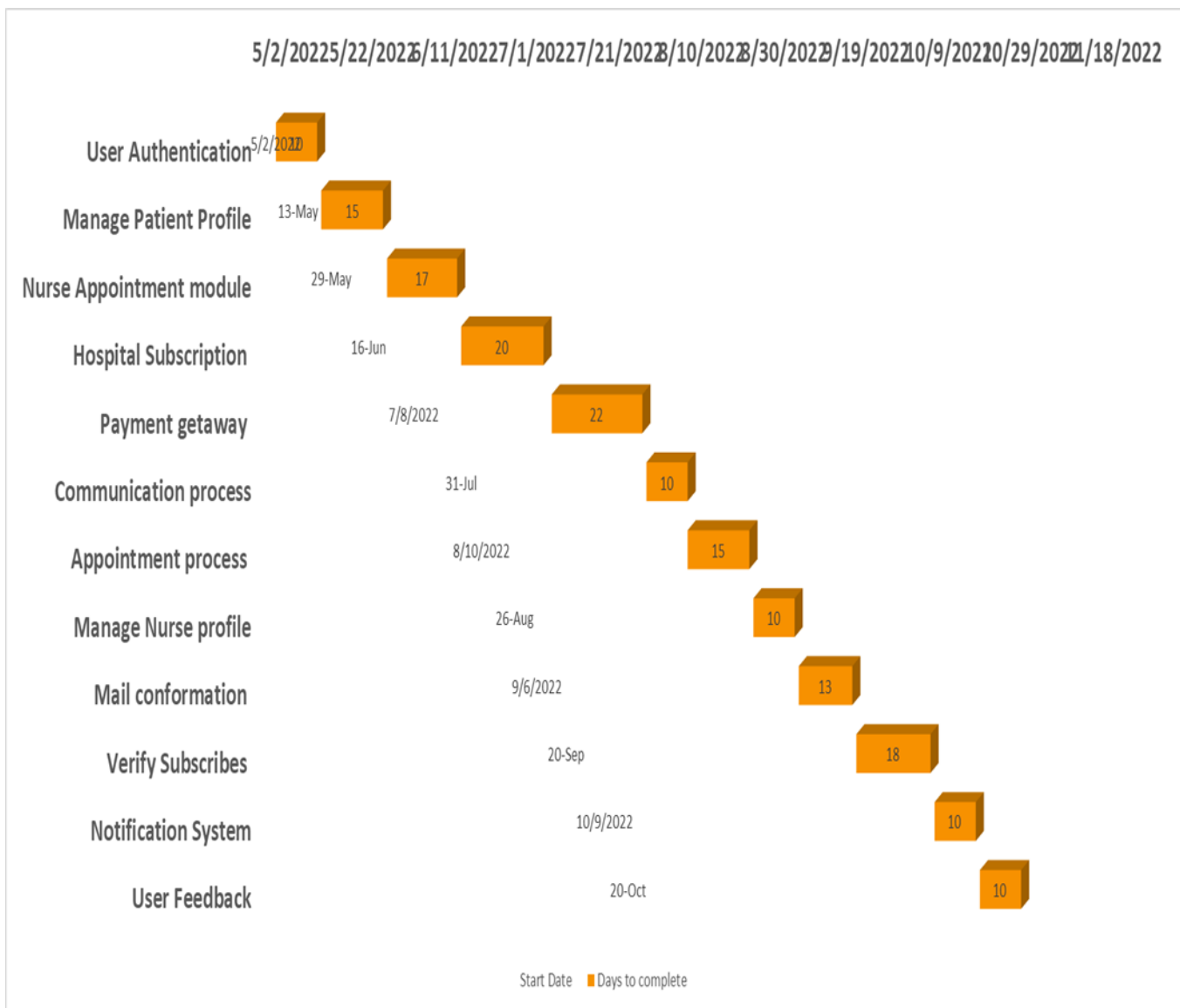


Figure 6 Project Gantt chart

5.2 Test Plan

Test planning is one of the most important parts of the project. In this part the test is planned and tested according to the specified structure. A specific piece of information is available to confirm whether program enhancements are attempted within the authorization handle. Project testing is based on predetermined inputs and predetermined frameworks, and it assures that any testing will result in the proper project performance.

5.2.1 Testing against the time boxing:

Tests against the time box process is based on a fixed and maximum guess against the time box. The ones that are entered with a meeting specification of mention which is many for nature so against time box test all shown below.

User name	Example	Role	Example
Time box ID			
Time box content			

Test Type	Test steps	Expected result	Actual Result	Comment
Unit test				
Integration Test				
System Test				
Acceptance Test				
Security Test				
Usability Test				
Reliability rest				

Table 4 Sample of testing against the time box

5.2.2 Required Test

We know there are different types of testing modules but two types of modules are most commonly used in it.

There are **two types** of systems for testing, one based on functional and another on non-functional:

Functional Testing:

Software testing is where function testing is most commonly employed. Every feature of the program must be tested as part of functional testing, which verifies software. Additionally, it is operationally important to check that the inputs are valid and to provide the proper input in order to ensure that the output is accurate. Therefore, I will use functional testing to examine each of the functionalities in my smart medical project to see if they are reliable. To ensure that inputs and outputs are accurate, I will also do functional testing on the smart medical project. So I run each of my functions through unit tests to ensure validation, then leave it for user testing before I do functional testing on my project or my husband to see if all the functions work properly.:

Functional testing examples include:

- Unit Testing
- Smoke Testing
- Integration Testing
- White box testing
- System testing
- User Acceptance testing

Unit Testing:

The purpose of Unicode is to check whether each of the above parts work as expected. Unicode is done by the developer during application development, which is a difficult phase that isolates Unicode and validates the correct criteria and its function methods can be module methods or objects. Unicode is usually managed by development and performs correct validation by checking the con.

Smoke Testing: Smoke testing reduces testing effort and helps improve project quality. And can be done manually or automation if an organization wants it. Additionally, smoke testing is simple to do and has a quick turnaround for detecting faults at an early stage, enhancing system quality and lowering risk for simpler access.

Integration Testing: A module is usually designed by individual software users and the programming logic is different for each one, so integration testing is needed to verify that the software module is integrated. If there is any application of the software model to the database, the model gland needs to change, these may not be unit tested, may become integration tests, and if they go wrong, may cause exception handling problems.

White box testing: The internal structure and coding of the software are tested to verify the tight flow of the software design and to ensure the usability of the design and to improve the safety of the development.

System testing: System testing is an important part of a project which is being developed for an operating system or which operating system it will work on. It is a critical point for a software business to succeed. Since my project is web base, it can be used with Linux and Windows methods, and it also allows you to see if it's taking the correct input and if the output matches what you expected internally.

User Acceptance testing: User Acceptance Testing is an important test for every model a project is launched through. After the integration system testing, this user appearance testing is finally done because through it, if there is any kind of user functionality problem in the software and if the user cannot use it normally, then it is fixed again, so it is an important test.

Non-functional testing:

Non-functional testing, which can have an impact on customer satisfaction, is as vital to functional testing, because it verifies the number of simultaneous logins.

Non Functional testing examples include:

- Security testing
- Reliability testing
- Stability testing

Security testing: Security testing identifies a software's vulnerabilities and uncovers vulnerabilities and threats, and prevents malicious attacks from outsiders and provides security so the purpose of this security test is to detect any type of error in the system and identify the system vulnerabilities so that no confidential information revenue and personal information can be lost in the hands of any employee or outsiders after this testing.

Reliability testing: Reliability testing is done to check whether a software functions correctly at a given time in a given environment. This testing ensures that the project is in line with their expected throughput, project output, and can deliver the same results every time. For example if 10 users log in at the same time then the user authentication works properly and if the credentials are correct then those 10 users can access the website at the same time.

Stability testing: Stability testing is done to test the ability of a user to work on a project or a piece of software for long periods of time or to test the efficiency of an application. And this test is to make sure whether the application can run for a long time and whether the application will crash or fail in normal use. Finally it can be said that this testing will handle any errors in the software and reveal its reliability.

5.2.3 Test Case

There was a test case number, a test kind, a test depiction, and a test procedure.

Test case no			
Test type			
Test Description			
Test Steps	Expected Result	Actual Result	Comment

Table 5 : Sample Test case

5.2.4 User Acceptance Test Plan

After all the tests are done, the user acceptance test is the most important and final step in the testing segment. A user uses the project to identify the pros and cons, so user acceptance test planning is important for every project and examines the functionality of user tests.

Test case no
Test type
Test Description

Precondition of testing			
users Name			
Act as			
Test Steps	Expected Result	Actual Result	Comment

Table 6: User Acceptance Test plan

5.3 Risk Management

Risk management identifies potential risks for a project and analyzes the types of risks that may occur during the project's life cycle and how to identify and resolve them. Analyzing and responding to any type of risk in the project and meeting specific expected goals. Identifying the problems that may arise in the project's capital and earnings through risk management. And the process of controlling them and what technical problems may occur and strategic system failures and natural disasters are reviewed. So in this project my project will analyze capital, cost, time frame.

5.3.1 Risk Identification

Business in an organization has a positive or negative impact on the organization's business management system. The most important initial step in risk identification is to identify project alternatives with project characteristics. And research and identify the features that people don't like about the project or the problems that cause the project to close. What kind of risks the project faced and what were the technical problems, what were the natural problems in that project by identifying those risks and dealing with them. Analyzing what kind of problems can be faced in keeping with the world situation.

For example, currently in Bangladesh, patients are not receiving proper care in the health sector and due to the current climate, people are getting sick more and more, as a result, the pressure on people's medical services can increase, and then people can take online based smart medical services. So those problems should be identified and solved beforehand.

The following provides information on how this project's risks were identified and tracked:

Risk	Problem Area	Impact
Inappropriate Access	Many people, both intentional and unintentional, can enter the system and cause problems in the project without any permission. It can be difficult to contain the risk and he can take all the information of the user and give wrong information.	A person or organization can do harm by grabbing all the necessary information
Database Error	Smart Medicare has three main panels which are User Admin and Hospital Panel. As a result it becomes very difficult to manage all together.	If there is a problem with the database then the user admin and hospital panel users will be deprived of their expected results.
Subscription issue	It becomes difficult to keep records when a patient has checkups at different hospitals.	As a result, the project owner will not be able to capture the data properly. This may cause the module to fail.

Technical issue	absence of the necessary performance. absence of necessary setup. lack of the necessary speed.	Due to technical problem there may be many problems if my project is web base but still if user is multitasking and repeatedly entering my project the system can see user lock so I don't recommend user to have a multitasking device.
Backup data	Using multiple data storage facilities or data encryption technology for project backup.	<ul style="list-style-type: none"> • Financial cost will increase • All data may be lost

Table 7: Risk identification Table

5.3.2 Risk assessment

5.3.3 Risk Precaution

After risk identification and risk assessment, this step involves planning how to reduce those risks. Several steps can be taken to reduce the alertness. Minimizing current and future hazards.

- Takes place and lowers possible dangers.
- Addressing current and future hazards.
- Addressing current and future hazards.

How to address the risks of shots fired in Smart Medicare and what precautions can be taken to avoid possible ricks are analyzed in the table:

Action Plan below:

NO	Risk		Action taken by
01	Inappropriate Access	<p>Verification module must use advanced technology.</p> <p>Court verification should be done on the phone number in the evidence verification process</p>	Developer team
02	Database Error	<p>Data Normalization should be done very well while working in database.</p> <p>Table relationships should be done correctly as required.</p>	Developer team
03	Subscription issue	<p>If there is a subscription option in different hospitals then from which hospital the user has checked up can be easily identified and the information can be stored in the database.</p>	Developer team

04	Technical issue		
05	Backup data	Using multiple data storage facilities or data encryption technology for project backup	Developer team

Table 8: Risk precaution

5.3.4 Steps Taken for Attainable Risk

After receiving the possible risks, a responsible person assesses them and takes action and the necessary steps are given:

Risk	Description	probability	Impact level	Take action
Inappropriate Access	Unauthorized persons may attempt to gain access to the system	impossible	High	Modern technology must be used in the verification module. The phone number should be checked with the court as part of the procedure for verifying the evidence.

Database Error	Special care should be taken to ensure that the database relationships are correct and identify any incorrect relationships.	Likely	High	Relationship Entity Set and Diagrams Data dictionaries for data normalization have been generated as diagrams.
Subscription issue	In case of prescription treatment in multiple hospitals, the burden of which hospital he is repeatedly checking from will be fragmented.	Rapid	medium	A hospital subscription can be purchased for any hospital to analyze
Technical issue	If the device is old it may crash.	frequent	medium	All patient information will be saved in the database

Table 9: Risk dealing steps

5.4 Change Management

Change Management aims to influence and implement change by controlling change in new environments, and new technologies, and adapting people to change.

5.4.1 Factors that might cause change

There are different types of necessary conversion units for the same segment and they are:

- Its programming structure is subject to change.
- An industry-wide innovative solution can be created if there is a strong organization in the technology sector that can change the basic structure.
- Computer program modules and program modules both have the potential to evolve.
- Technology should be integrated into systems since it is a potent medium.

5.4.2 DSDM Atern Welcome Change

According to the needs of the project, the life cycle is often adjusted. Therefore, it is important to follow the project methodology so that the system is always ready to handle new issues. Due to its suitability, reliability, and ability to take an accurate approach to this myth, DSDM has been employed in my project.

It will incorporate a variety of strategies:

- It creates the update technique system, which is a mechanism for upgrading the module's technique.
- Once the module is updated then the project will be active.
- Contains information on very short dynamic roles from various users such as student and nurse details and hospital subscriptions.
- It ensures accountability as per the required norms or standards.
- Never need to worry about function protection.

5.4.3 Considering Business Priority

In order to achieve the specific goals and objectives of the project, as well as to ensure that the project objectives are satisfied, business priorities and business objectives need to be identified. Actions that can be taken in the future and actions performed in response to those actions will drive business progress, meet project user expectations, and achieve business goals.

5.4.4 Change Workshop

In addition to knowing the attitudes of team members, it is important to observe closely what kind of attitude they have on their behavior and work. Be involved in incorporating the necessary changes and create a new workshop based on how they are adapting to system changes and themselves to improve the project.

5.4.5 Changes that are allowed:

To enable changes to be carried out appropriately, all problems should be recognized and solutions should be developed. The organization's time, cost, quality, and need to adapt to changes based on these changes and enabling changes to our priority of a particular part of that system should all be considered.

5.4.6 Key Decision Taker of Change

Key decision makers change the various types of project decisions. Individual preferences for different types of adjustments are made by the project's key decision-makers and the resulting changes are implemented.

The change decision makers in this project are:

- Requirements Analyst
- Developer
- Tester

5.5 Quality Management

Analyzing the qualities that have been decided for the project and quality management to ensure that the quality is correct. To maintain quality and expected standards, quality requirements ensure that all functions function properly. Aspects to be observed control in manage quality :

- Track whether the services are being operated properly.
- Properly review and quality control the daily activities

5.5.1 Rules Applied to Maintain Quality

To satisfy the required standards and project objectives, such characteristics must be continuously maintained. The value from one system to another and from one user to another is very important. By following a specific guideline, several things like quality control and quality assurance are accomplished and by doing so a proper and high-quality project is produced.

5.5.2 DSDM Standard Quality Measures

Solution quality: When a solution to a problem is found and if the problem is solved correctly, the quality of the solution is better, resulting in users getting the output they expect. Two different types of priorities are used to complete this strategy:

- Time Boxing
- MoScow

Process quality: Once a project's strategies have been identified and quality determined, the focus is on whether the project's quality process is in place. one types of quality are defined:

- DSDM

5.5.3 Quality Plan and Measuring Meter:

Below are some steps for quality planning:

1. Checking that resource allocation is done correctly and all tasks are done according to schedule. 2. All functions in the project are deleted when a module ends. 3. Changes need to be tracked to maintain quality standards. and test results are stored at each stage for any persistent resource.

Chapter 6 – Feasibility

6.1 All possible type of feasibility

Operational Feasibility:

Unquestionable, the suggested system is entirely GUI-based, which makes it incredibly user-friendly, and all the inputs are self-explanatory, making it very easy for a patient to pick up. Additionally, training will be provided to users so they are familiar with the fundamentals of the system and can utilize it with ease. It is simple and very well decorated web base site with very nice navigation bar for smart medicare nurse and patient handling. Through which a user can easily find the information a patient is looking for so that a user can happily use the agreed Medicare. There is no need to install any kind of software to use Smart Medicare, so any user can enter Smart Medicare only if they have a mail ID or a phone number, they can register and see all the information. Smart Medicare can access all services from any type of device so that a user can easily connect himself with the scheme.

Technical Feasibility:

Includes research on characteristics, limitations, and performance that may hinder the development of an effective system. We have investigated every feature provided by the system to study the feasibility. The Smart Medicare Online platform does not have to deal with any technical issues as the user can use an internet browser with an internet connection to access any type of smart medicare service from anywhere and on any device. Smart Medicare requires no heavy software installation and no separate requirements. So finally this web based smart medicare is free and the properties are affordable.

Hardware:

- **Laptop**
 - Intel core i3,7th Gen
 - 4GB RAM, 128GB SSD, and 1tb hard disk, 64bit
- **Wi-Fi Router**

Software:

- Visual Studio Code
- XAMPP
- Microsoft office
- Google chrome
- OS Windows 11

Technology:

- HTML
- CSS
- Bootstrap
- JQuery
- JavaScript

Database:

- MySQL

Server Side:

- PHP
- laravel

Economic Feasibility:

As Smart Medicare is web based, the cost is very low and the patient or user can avail this service anytime through laptop or mobile phone. So, below is a list of the price for a **web-based** application.

Equipment	Cost per unit	Cost
Domain and web hosting	Business 2500 BDT per yearly	2500 BDT
Extranet network with VPN	2500 BDT per month	2500 BDT
Email server and web-file	20000 BDT permonth	20000 BDT
Desktop PC Model: Cloth 3888 Mat Intel Core i7-10700 processor (16th cache, 2.9 GHz, sub 4.80 GHz) 8GB (8x1) Dodra4 2666MB RAM 1st 7 to 0 rpm sata haddi	92,200 BDT	92,200 BDT
Total		117,200 BDT

Table 10 : Economic Feasibility

Market Research Analysis Based on the Feasibility Factors:

Health sector is a very necessary part of today's society. There are a large number of hospitals around us and people of all ages seek services from those hospitals .But due to

lack of enough seats in those hospitals, the patients are deprived of proper care, so I have developed this project through nursing and patient handling system in my system. The nursing apartment system that Bangladesh has is not compatible with technology, only one number is given from where one calls after knowing all the information and then thinks about booking. But my Smart Medicare Nurse Profile will provide all the information. As a result of which a user will be able to know all the information he wants thereby a patient will be satisfied in mind that he will get the right service. if the patient wants, a nurse can make an appointment at home to see him round the clock, as now everyone is busy, so many families Those whose parents do not have enough people to take care of their children or who have to stay in the hospital day and night in case of a simple injury but those things are not so serious, in those cases the patient can avoid the hassle of the hospital and get proper quality care at home.

There is no nurse profile in the nursing servicing system in Bangladesh which creates a lot of problems for a user, because a user can appoint a nurse as per his wish and in those sites there is no medical equipment required by the patient and I think about the financial problem of the patient. Saw a hospital module where a hospital can buy a subscription and there will be several hospitals included and from that he can buy a subscription for a hospital so if the patient ever visits that hospital for a medical checkup then he will get 20% cashback on his total bill That will keep Smart Medicare ahead of other medical services.

6.2 Cost Benefit Analysis :

Cost benefit analysis is very important for a project so I am analyzing cost and benefit for my project in 4th year :

Total Cost:

No	Equipment	1 st Year	2 nd Year	3 rd Year	4 th Year	Total
1	Web based application	117200 BDT				117200 BDT
2	Domain and hosting cost	15000BDT	15000BDT	15000BDT	15000BDT	60000 BDT
3	Employee Expenses	50000 BDT	50000 BDT	50000 BDT	50000 BDT	200000 BDT
4	Maintenance cost	50000 BDT	50000 BDT	50000 BDT	50000 BDT	200000 BDT
5	Other Cost	20000 BDT	20000 BDT	20000 BDT	20000 BDT	80000 BDT
6	Total Cost	252200 BDT	135000 BDT	135000 BDT	135000 BDT	657200 BDT

Table 11: Total Cost Estimation for the project

Total Earn:

NO	Earn Sector	1 st year	2 nd year	3 rd year	4 th year	total
1	Nurse appointment	150000 BDT	200000 BDT	300000 BDT	350000 BDT	1000000 BDT
2	Subscription	150000BDT	200000 BDT	400000 BDT	450000 BDT	1200000 BDT
3	Total	300000 BDT	400000 BDT	700000 BDT	800000 BDT	2200000 BDT

Table 12 : Earning estimation for the project

Total Revenue:

NO	Sector	1 st year	2 nd year	3 rd year	4 th year	Total
1	Total earning	300000 BDT	400000 BDT	700000 BDT	800000 BDT	2200000 BDT
2	Total equipment cost	140000 BDT	100000 BDT	100000 BDT	100000 BDT	440000 BDT
3	Total revenue	160000 BDT	300000 BDT	600000 BDT	700000 BDT	1,760,000 BDT

Table 13: Estimation Revenue on a five-year scale

6.3 DSDM Good or Bad for this Project

Can perform any simple task quickly and accurately under difficult conditions. The Smart Medicare Project has implemented strict rules since all adjustments can be accepted with grace and performance will not change. Can pick up any changes very easily and choose the right parameters by testing the bodies so I think DSDM is a very good technique for my project.

Chapter 7 – Foundation

7.1 The problem area identification:

Finding problems is an important part of improving projects quickly. Since the users of a project experience the most problems or benefit the most, their feedback is an excellent process for problem identification. As a result, some of the problems faced by consumers are listed below.

7.1.1 Interview

If you want to determine the real problems and symptoms of the project, the best way is the interview through which accurate information can be obtained. It is used especially by nurses and patients who meet them to understand the problems. So first set some important questions for the interview.

For User

- can get alerts.
- can obtain confirmation of feedback.
- User check any kind of information smoothly.

Admin:

- Check out the user information.
- Any user issue of any fix problems

7.1.2 Observation

Observation is an important method to directly see what kind of problems the users are facing. This method is the most effective way to observe the real problems and use the users to find solutions to them.

- Email verification to verify the validity of the site so that a user can accept it.
- Avoid suffering even in the hospital.

7.1.3 Questionnaires

Questionnaires are problems that are attempted to be solved by asking users specific questions to address the problem to get the right criteria for the project. These questions are usually of different types especially short questions mcq type questions are more so the types of questions asked are given.

Q:Why do they want to use the system?

Ans:

Q:What kind of benefits will the patient get?

Ans:

Q: How can they ensure their own safety in this service?

Ans:

Q:What will a nurse and patient gain from the system?

Ans:

7.2 Rich Picture

The model is expressed to define the initial stage scenario exploration. Which is simply called a bird's eye diagram where user activity and interaction can be visualized very easily.

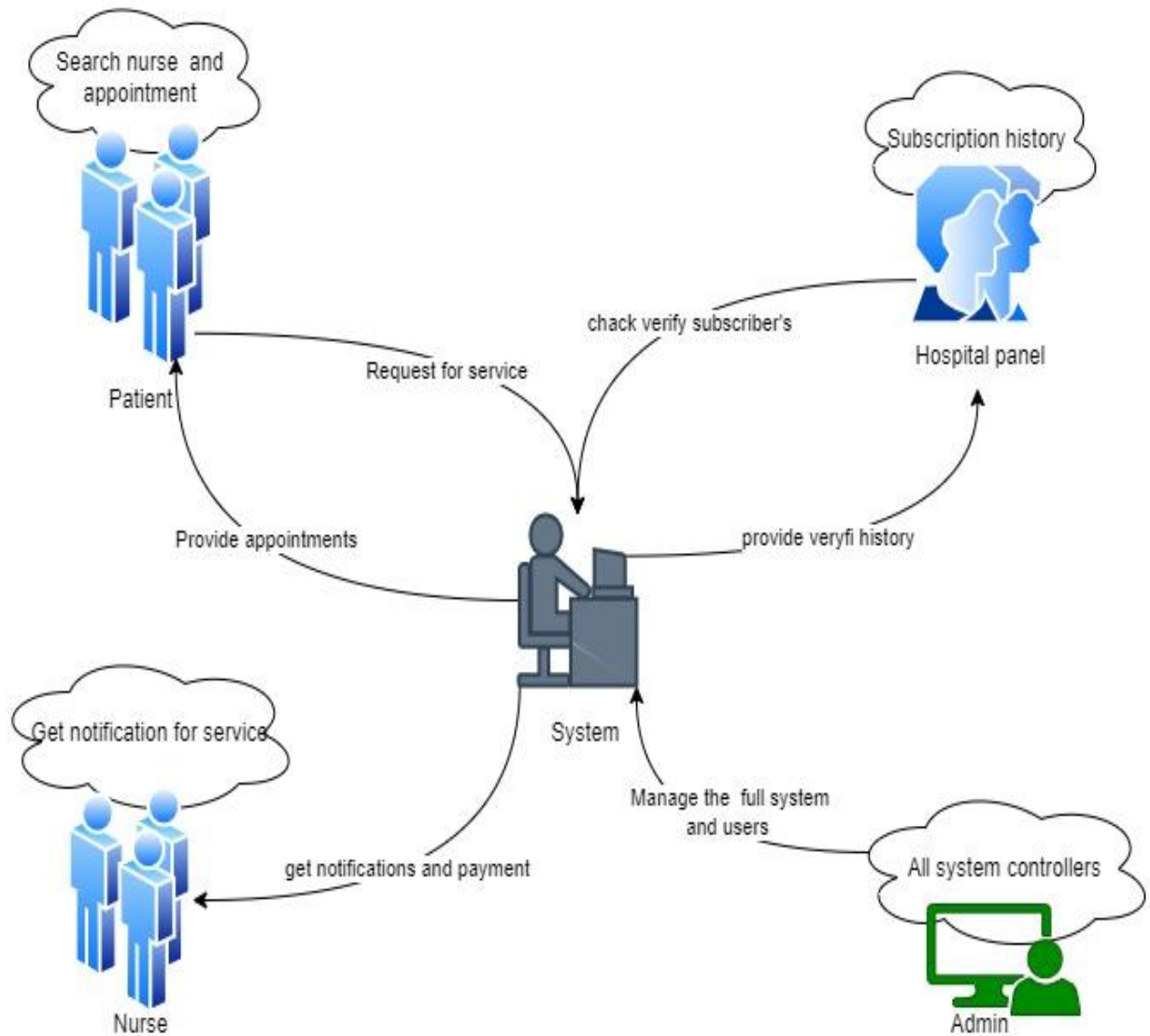


Figure 7 Rich picture

7.3 Specific Problem Area Identification

Various problems arise during data collection and identification through strategic use. And the whole system of smart medicare is beautifully described in the rich picture diagram and after analyzing them I found some problems which are called specific problems:

- Access to equipment systems required by the patient.
- Hospital subscription data in the system.
- Payment system in online module.

7.4 Possible Solution:

In the project, the problems found by user observation were identified and possible solutions were given:

- Addition of equipment needed by the patient to the system.
- Selling subscriptions for individual hospitals.
- Add online payment module system.

7.5 Overview Requirement list

Functional Requirements:

- User authentication
- User Profile
- Appointment nurse
- Subscription
- conformation
- User reviews
- Generate reports

Non-Functional Requirements:

- Get notification
- emergency services
- tutorial

7.6 Technology to be implemented

Choosing the right technology is very important if a system is to be managed and serviced properly. If the right technology of the system is not selected then the failure of the system may occur so the use of technology in the proposed system should be ensured. There are several possibilities:

Client-server Application Technology:

In this technology project, the user needs to install the application on his own computer or desktop and all the data of the application will be stored on a remote server and users can

access that data as needed. It is basically an application framework, which separates the tasks of server and client and communicates only by using computer network or internet and to the server they send a request to take a service and in return for that request the server runs multiple programs and gives access to the client.

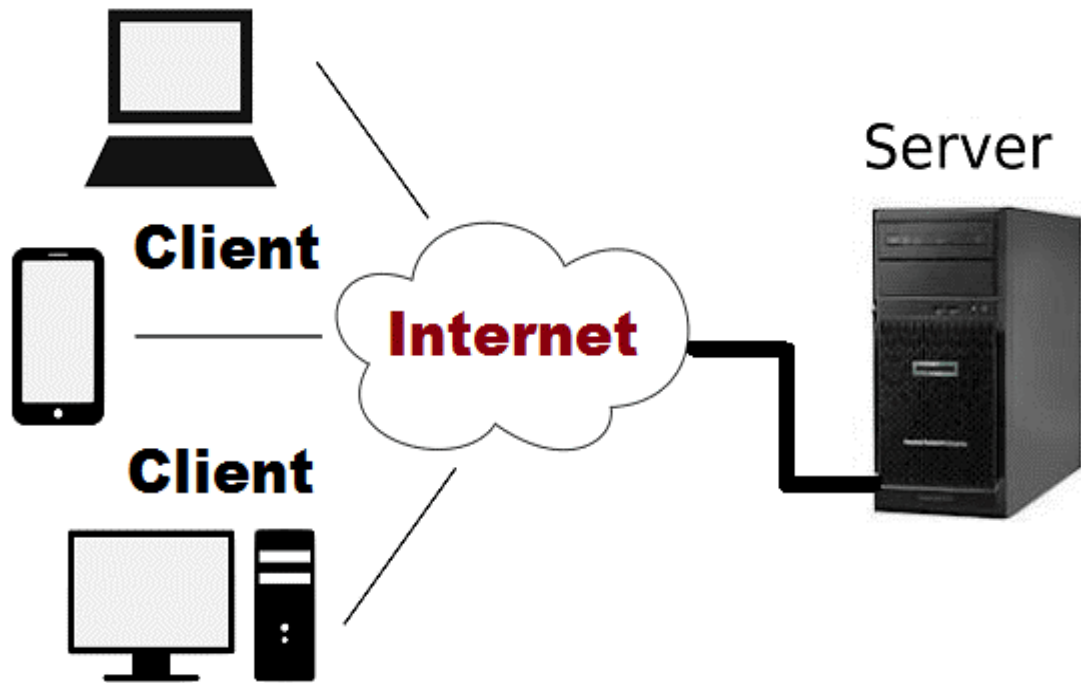


Figure 8 Client-server model

Following are the main features of client server model:

- Features can be added to the server at any time without any disruption to the client.
- A single server makes it possible to centrally handle all aspects of user authentication, authorization and data security.
- The server does not require any complicated maintenance.
- The application must be installed separately on a device.

Web application

Web application development is the project users can access all the services of the project anywhere from the remote server without installing any program only through internet

connectivity. A user can access the application through a web browser without any hassle of installation. Web applications have both client-side and server-side.

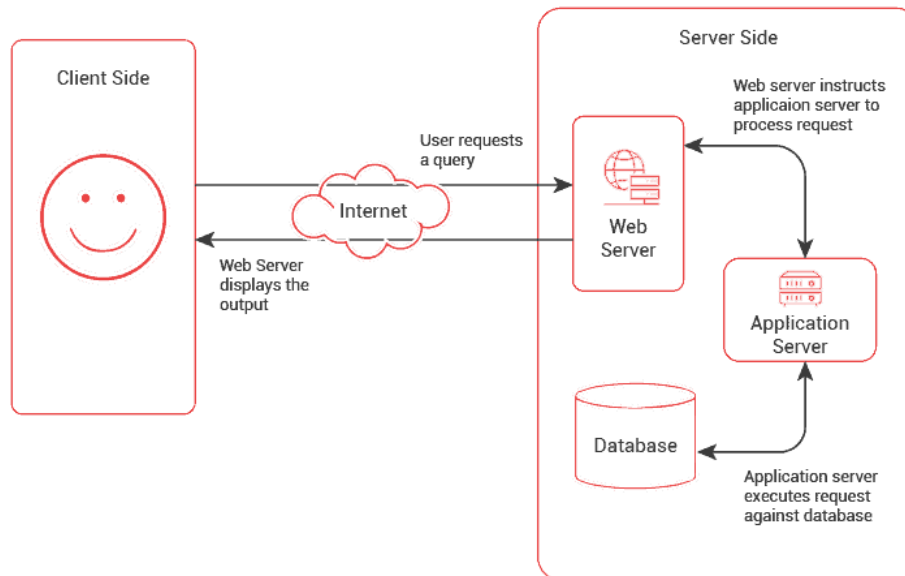


Figure 9 web application model

The web application has the following features:

- No installation hassles to be had.
- You can access the service only if you have internet access
- Data lost due to technical errors can be easily recovered.
- Costs to users and businesses in the project.
- Full users can use the same version at a time without any compatibility.

7.7 Recommendation and justification

Since Smart Medicare is an online nursing appointment system, it should be accessible anytime. And anytime any type of user tries to access it from any device. So I think web based solution is the best solution for my project and user can connect internet anytime

and open a browser to get any kind of information and any kind of benefits instantly. So application system is most usable and secure so I will use web based application technology in my system.

Chapter 8 – Exploration

8.1 Old System Use Case

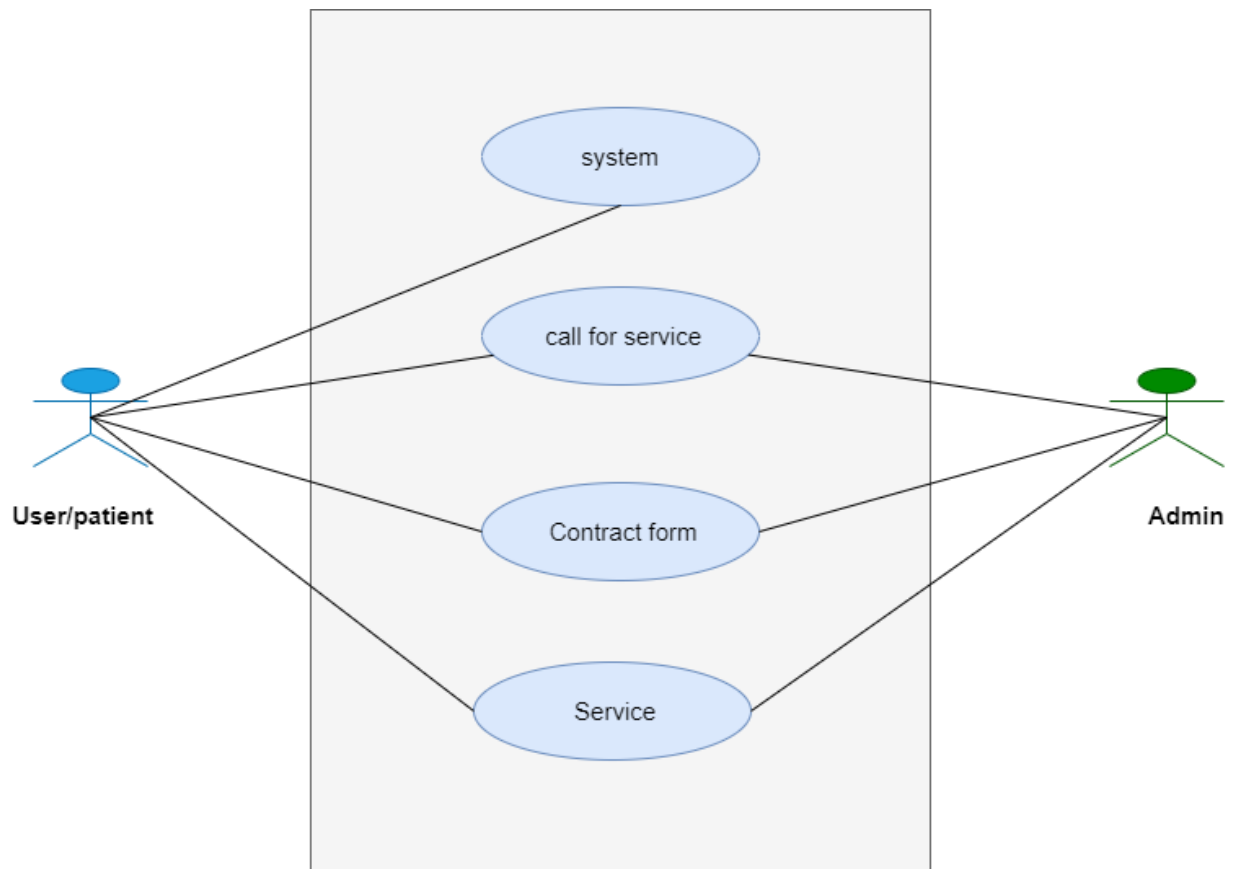


Figure 10 Old system Class diagram

8.2 Activity Diagram

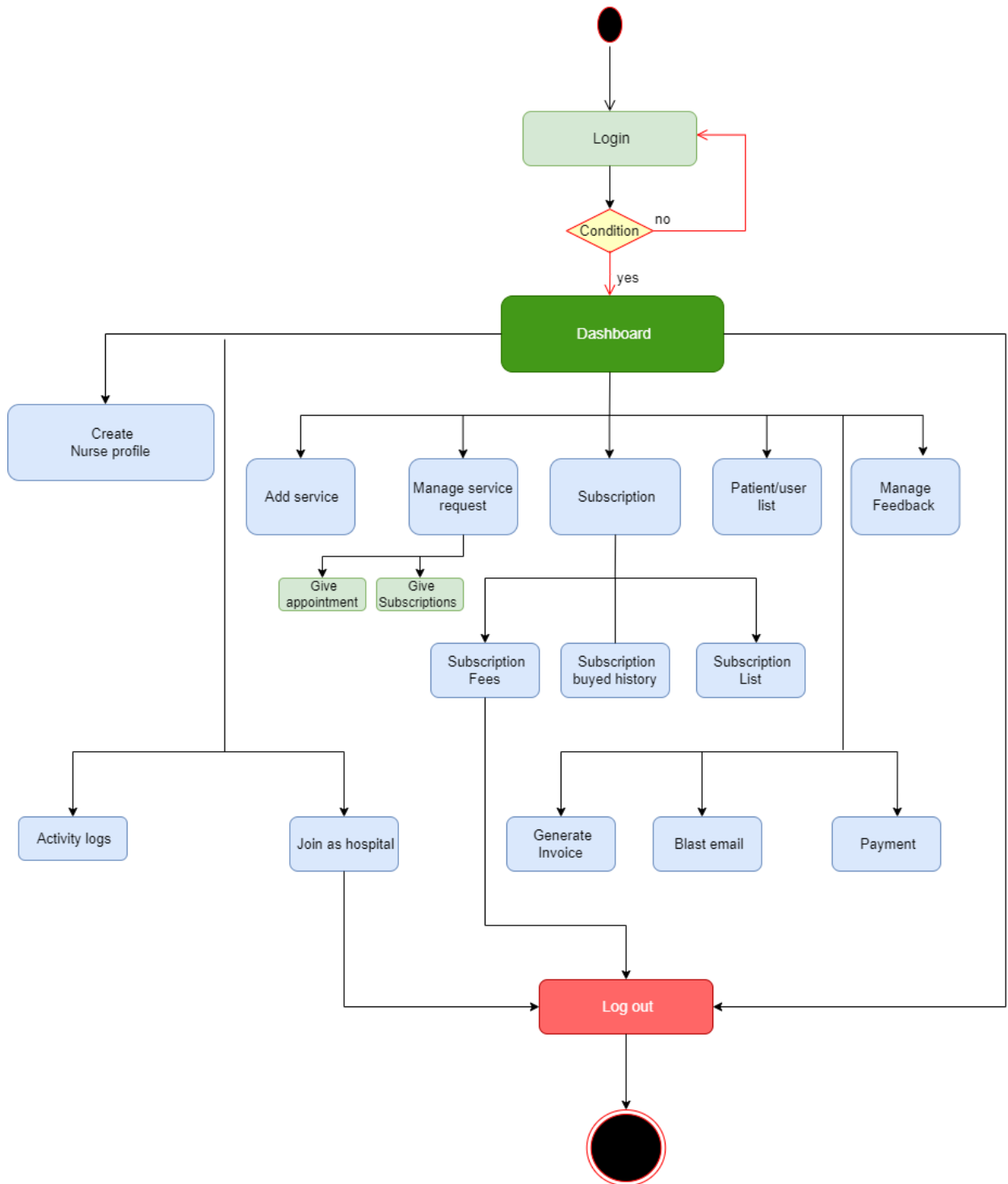


Figure 11 Admin activity diagram of smart Medicare

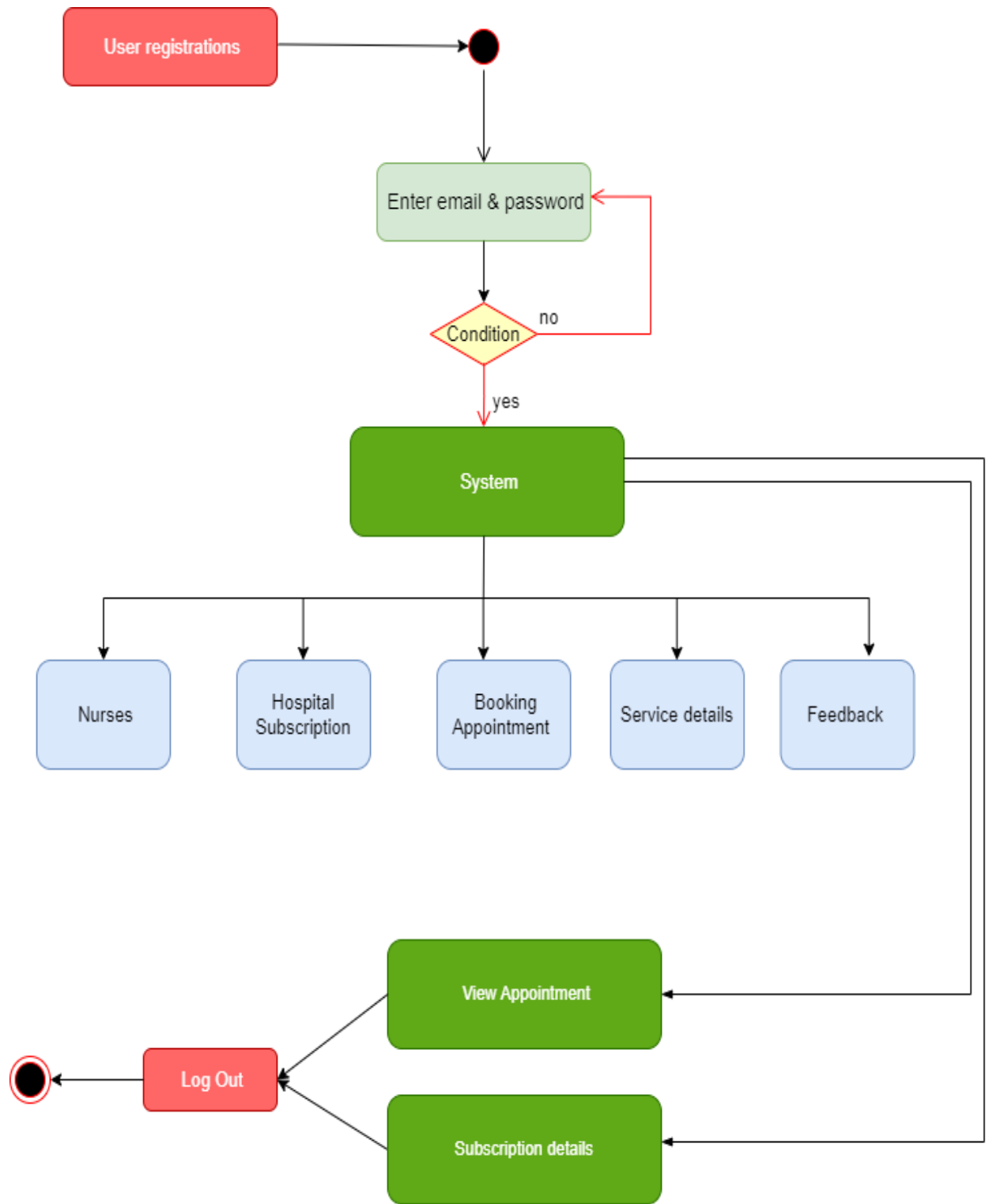


Figure 12 User/Patient activity diagram of smart Medicare

Figure:10

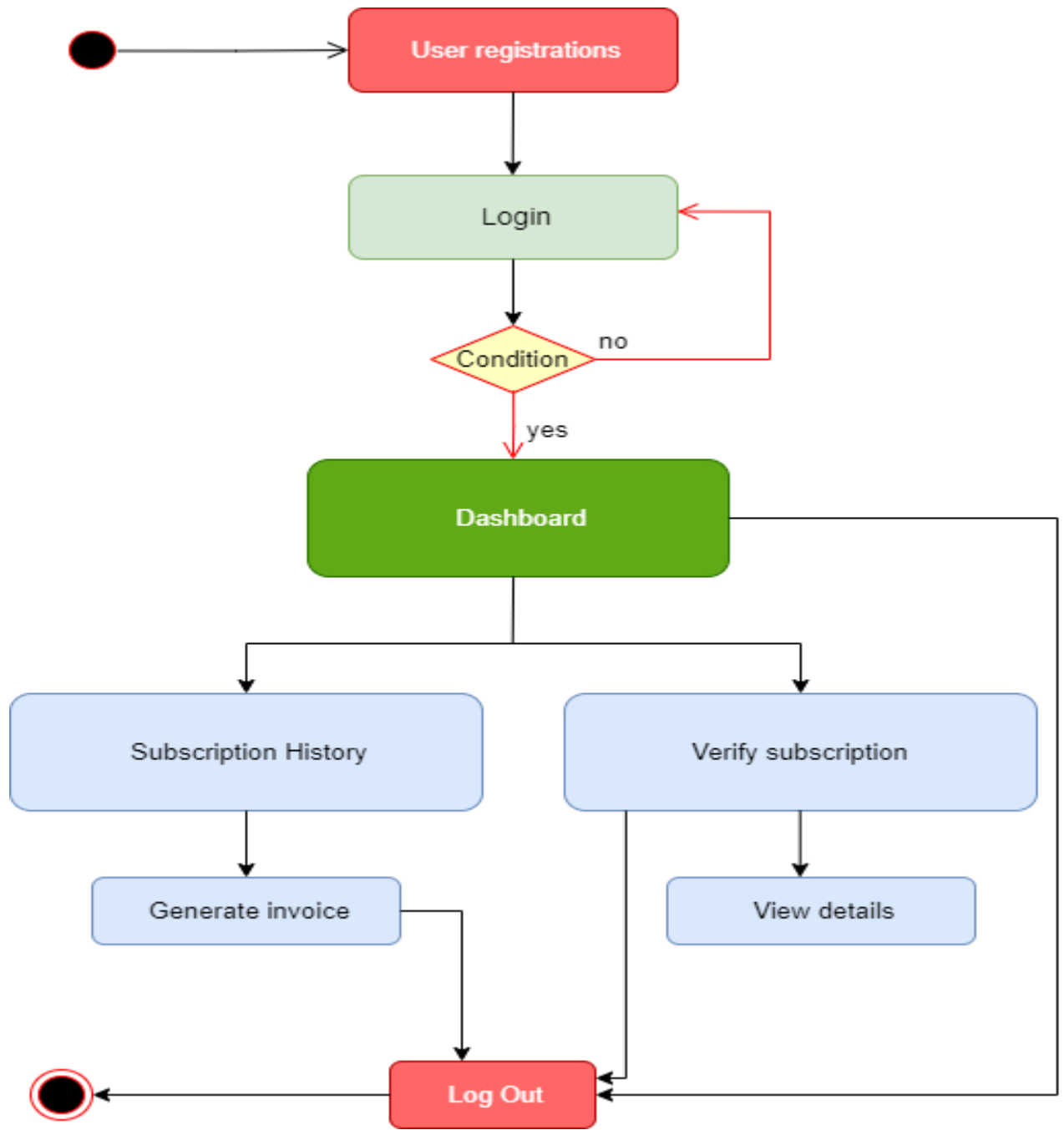


Figure 13 Hospital panel activity diagram of smart Medicare

8.3 Full System Use Case

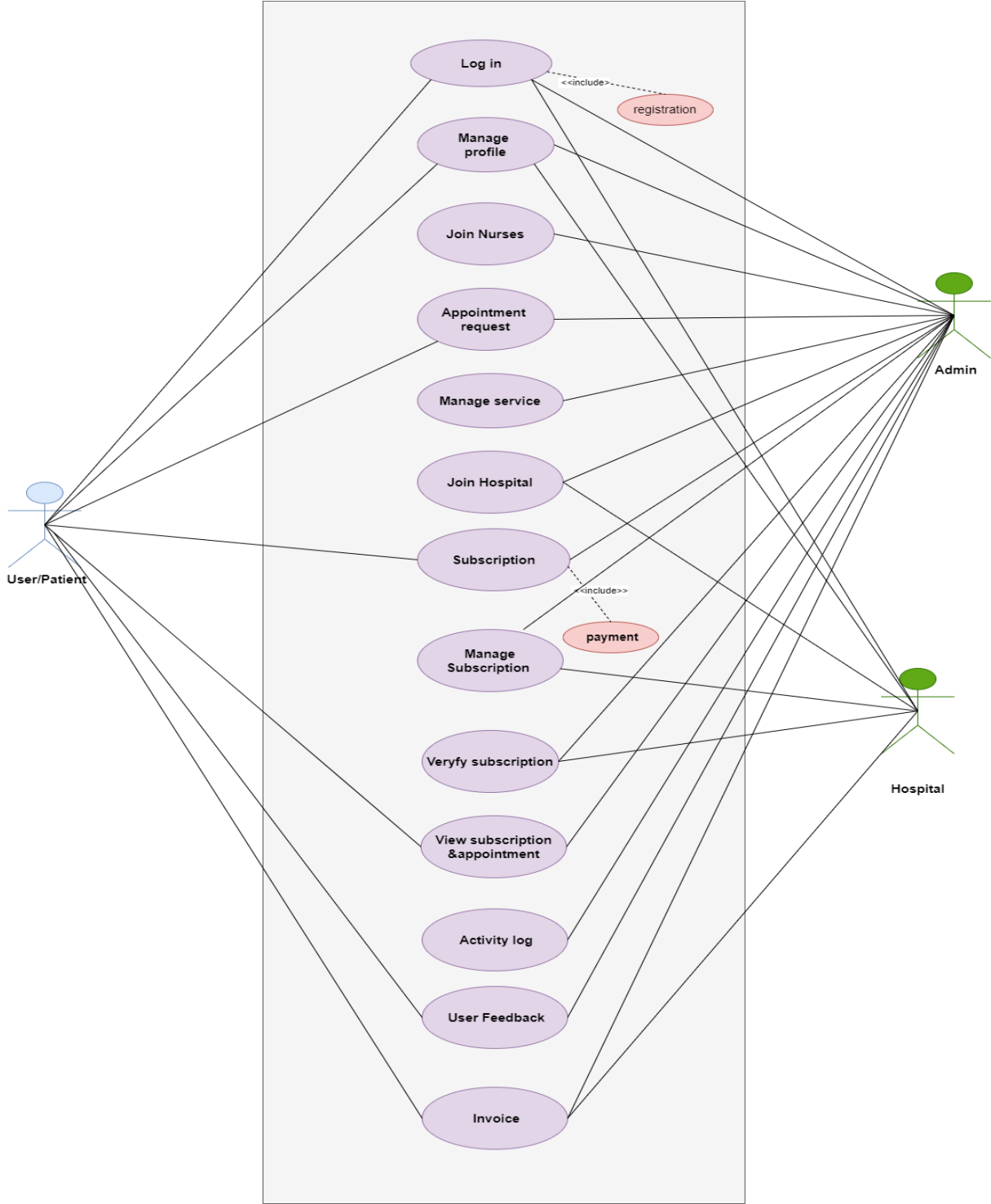


Figure 14 Use case diagram of smart Medicare

8.4 Full System Activity Diagram

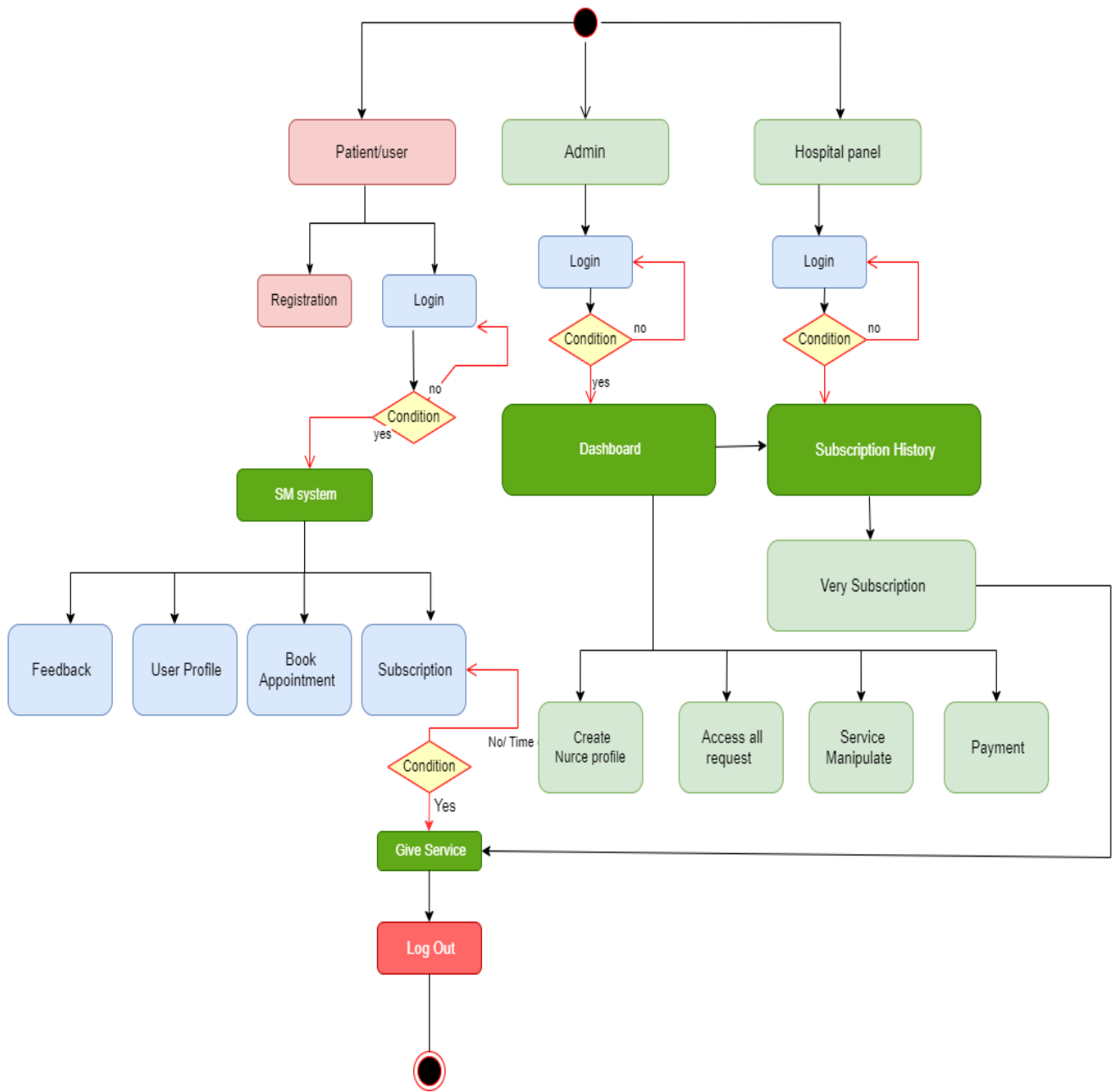


Figure 15 activity diagram of smart Medicare

8.5 Requirement catalog:

I have already identified all the items needed for the project and all the catalogs needed. I will now provide the requirements in the following standard format and visually indicate each requirement:

User Authentication Requirement Catalog:

Source	Sing in	Priority	requirements
Admin	All user	Must	01
Functional requirement		Must	
Non – Functional requirement			
User authentication	Admin can access all user modules and user must login to the system with email otherwise they will not be able to access the system.		
daily login registration	30		

Table 14: Requirement Catalog for User Authentication

Nurse appointment Requirement Catalog :

Source	Sing in	Priority	requirements
Admin	All user	Must	02
Functional requirement			

Nurse appointment	All registered patients of the scheme can take nurse appointments		
Non – Functional requirement			
Description	Target value	Acceptance value	
Daily appointments	50	30	

Table 15: Requirement Catalog for Nurse appointment

8.6 Prioritized Requirements List (PRL)

I have followed the Moscow Strategy for Smart Medicare so that needs will be prioritized. So I am making below solution list for my project:

Functional requirement	Prioritize
FR1. Patient can registration and Login	Must Have
FR2. Patients will be able to apply for Nurse	Must Have
FR3. Patients will be able to apply for Service request	Must Have
FR4. Admin can customer service authentication	Must Have
FR5. Admin can service manipulate	Must Have
FR6. Admin can service request managed	Must Have
FR7.View patient List	Must Have
FR8. Patient can get Hospital Subscription	Must Have
FR9. View Subscription list each hospital authority and System admin.	Must Have
FR10. Each hospital authority can verify subscription list	Must Have
FR11. Patients can pay online	Must Have
FR12. Patient Get confirmation	Must Have
FR13. Generate Report	Must Have

FR14. Patients will be able to feedback the service	Must Have
------------------------------------------------------------	------------------

Table 16 : Prioritized Requirements List (PRL)

8.7 Prototype of the new system

Show some screenshots of smart Medicare:

Admin panel prototype :

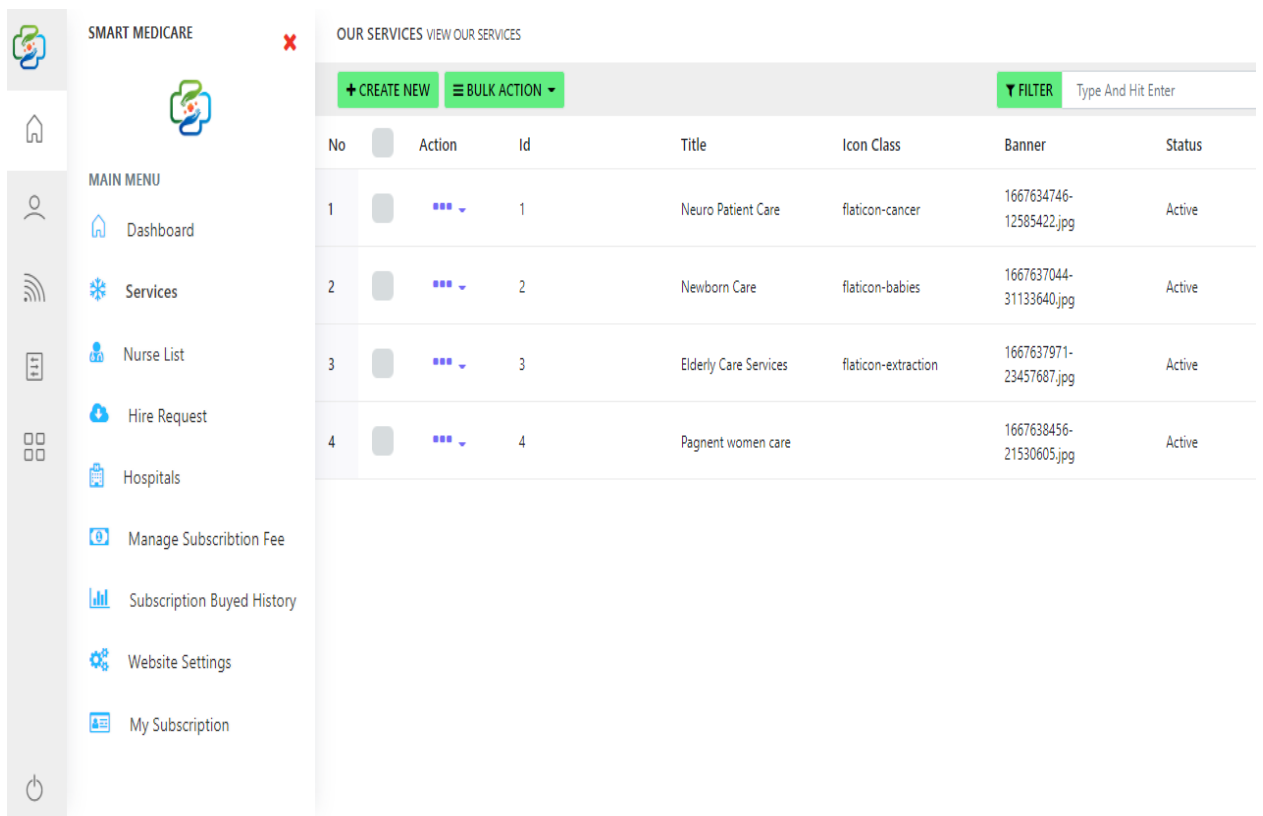












Figure 16 Admin panel prototype

User list prototype :

SMART MEDICARE ✕ USER LISTS VIEW ALL USERS

[+ CREATE NEW](#) [≡ BULK ACTION](#) [▼ FILTER](#) Type And Hit Enter


No	Action	Avatar	Group	Username	First Name	Last Name	Email	Active
1	<input type="checkbox"/> ⋮		User	Akash	akash	bani	Akashbani@gmail.com	Active
2	<input type="checkbox"/> ⋮		Hospital	SquareHospitalLimited	Square Hospitals	Limited	info@squarehospital.com	Active
3	<input type="checkbox"/> ⋮		User	Hriday	Hriday	roy	Hriday1@gmail.com	Active
4	<input type="checkbox"/> ⋮		Hospital	Seba hospital	seba	limited	infoseba1@gmail.com	Active
5	<input type="checkbox"/> ⋮		User	Allen	Allen	singho	alen1@gmail.com	Active
6	<input type="checkbox"/> ⋮		User	swadheen	swadheen	roy	swadheen@gmail.com	Active
7	<input type="checkbox"/> ⋮		Hospital	Hospital	United General	hospital	infounitedgeneral@gmail.com	Active
8	<input type="checkbox"/> ⋮		User	Shovon	Shovon	howlader	shovon12@gmail.com	Not Active
9	<input type="checkbox"/> ⋮		User	Rinku	Rinku	hassen	riku12@gmail.com	Active
10	<input type="checkbox"/> ⋮		User	Kona	kona	rani	kona12@gmail.com	Not Active

Displaying 1 To 50 Of 10 Page

Figure 17 User panel prototype

Login Prototype:

SMART MEDICARE



 Remember me

[Register](#) | [Back To Site](#)

Figure 18 Login panel prototype

Add Nurse Prototype:

The screenshot displays a web application interface for adding a nurse profile. On the left, a sidebar menu lists various navigation options: Dashboard, Services, Nurse List, Hire Request, Hospitals, Manage Subscription Fee, Subscription Bought History, Website Settings, My Subscription, Hospital Subscriptions, User Review, and Reviews. The main content area is titled "NURSES" and features a form with the following fields: Name, Introduction, Image, Age, Designation, Skills, and Education. The Introduction and Skills fields are accompanied by rich text editors with standard toolbars. At the top of the main content area, there are buttons for "APPLY CHANGES" and "SAVE".

Figure 19 Login panel prototype

View Nurse Prototypes:

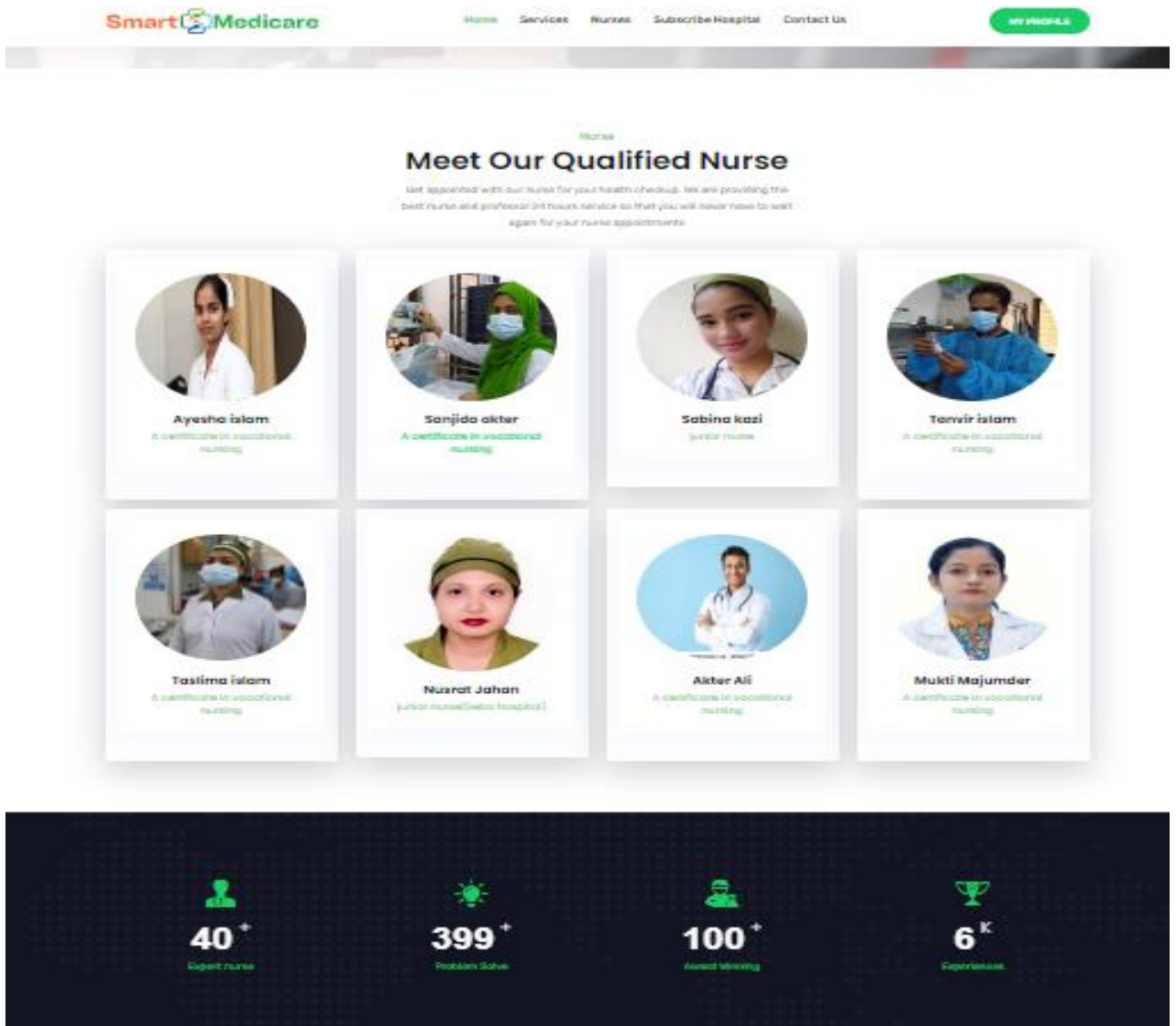


Figure 20 View Nurse Prototypes

Hospital page prototype :

SMART MEDICARE

HOSPITALS VIEW HOSPITALS

+ CREATE NEW BULK ACTION FILTER Type And Hit Enter

No	Action	Id	User Id	Country	Hospital Name	City	State	Postcode	Email	Phone	Status
1	<input type="checkbox"/> ...	5	SquareHospitalsLimited Square Hospitals Limited	bangladesh	Square Hospitals Limited	Dhaka	Panthapath	1205	info@squarehospital.com	09610707334	Active
2	<input type="checkbox"/> ...	6	Seba hospital seba limited	bangladesh	Seba hospital limited	Barisal	Bangladesh	8200	infoseba1@gmail.com	0431-2175364	Active
3	<input type="checkbox"/> ...	7	Hospital United General hospital	bangladesh	United General hospital	Barisal	Katpotti	8200	infounitedgeneral@gmail.com	01787876539	Active

MAIN MENU

- Dashboard
- Services
- Nurse List
- Hire Request
- Hospitals
- Manage Subscription Fee
- Subscription Bought History
- Website Settings
- My Subscription

Figure 21 Hospital page prototype

Nurses page prototype :

SMART MEDICARE

NURSES VIEW NURSES

+ CREATE NEW BULK ACTION FILTER Type And Hit Enter

No	Action	Id	Name	Age	Designation	Status	Hire Status
1	<input type="checkbox"/> ...	1	Mukti Majumder	28 years	A certificate in vocational nursing	Active	open
2	<input type="checkbox"/> ...	2	Akter Ali	30	A certificate in vocational nursing	Active	open

MAIN MENU

- Dashboard
- Services
- Nurse List
- Hire Request
- Hospitals
- Manage Subscription Fee
- Subscription Bought History
- Website Settings
- My Subscription

Figure 22 Hospital page prototype

View hire request prototype :

The screenshot shows the 'View Hire Request' interface. The sidebar menu includes: SMART MEDICARE, MAIN MENU, Dashboard, Services, Nurse List, Hire Request (selected), Hospitals, Manage Subscription Fee, Subscription Bought History, Website Settings, and My Subscription. The main content area displays the following table:

Id	8
User Id	Alex singho
Nurse Id	Akter Ali 30
Name	Pritom
Age	30
Gender	male
Date	2022-11-25
Message	Barisal,Hassan Ali road, Home 22/2A
Status	Active
Approval Status	approve
Create At	
Updated At	2022-11-07 16:29:11

Figure 23 View hire request prototype

iew service prototype :

The screenshot shows the 'View Our Services' interface. The sidebar menu includes: SMART MEDICARE, MAIN MENU, Dashboard, Services (selected), Nurse List, Hire Request, Hospitals, Manage Subscription Fee, Subscription Bought History, Website Settings, and My Subscription. The main content area displays the following table:

No	Action	Id	Title	Icon Class	Banner	Status
1	<input type="checkbox"/> ...	1	Neuro Patient Care	flaticon-cancer	1667634746-12585422.jpg	Active
2	<input type="checkbox"/> ...	2	Newborn Care	flaticon-babies	1667637044-31133640.jpg	Active
3	<input type="checkbox"/> ...	3	Elderly Care Services	flaticon-extraction	1667637971-23457687.jpg	Active
4	<input type="checkbox"/> ...	4	Pagment women care		1667638456-21530605.jpg	Active

Figure 24 View service prototype

Subscription byed prototype :

No	Action	Id	Hospital Id	User Id	Name	Email	Phone Number	Fee	Payment Method	Transaction No	Status
1		1	Square Hospitals Limited	akash bani	akash	akash@gmail.com	+8801756175438	3000	Bkash	232rve324234	Active
2		2	Square Hospitals Limited	Hriday roy	hriday	Hriday1@gmail.com	01399394943	3000	Bkash	ewrewrew	Active
3		3	Seba hospital limited	Alex singho	Alex	alex1@gmail.com	01829080921	2500	Rocket	jsfkopasi	Inactive
4		4	Seba hospital limited	swadheen roy	swadheen	swadheen@gmail.com	+8801756175342	2500	Nagad	hf-ki/g-kgj	Active

Figure 25 Subscription bought prototype

View subscription bought prototype :

Id	2
Hospital Id	Square Hospitals Limited
User Id	Hriday roy
Name	hriday
Email	Hriday1@gmail.com
Phone Number	01399394943
Fee	3000
Payment Method	Bkash
Transaction No	ewrewrew
Message	please
Created At	2022-11-04 17:06:33
Updated At	2022-11-04 17:06:33
Status	Active

Figure 26 View subscription bought prototype

All subscription history prototype :

SMART MEDICARE

MY SUBSCRIPTION VIEW MY SUBSCRIPTION

BULK ACTION FILTER Type And Hit Enter

No	Action	Id	Hospital Id	User Id	Name	Email	Phone Number	Fee	Payment Method	Transaction No	Message	Created At	Status
1		1	Square Hospitals Limited	akash banii	akash	akash@gmail.com	+8801756175438	3000	Bkash	232rwa324234	zucasdasdnd	2022-10-27 20:30:05	Active
2		2	Square Hospitals Limited	Hridoy roy	hridoy	Hridoy1@gmail.com	01399394943	3000	Bkash	ewrewrew	please	2022-11-04 17:06:33	Active
3		3	Seba hospital limited	Alex singho	Alex	alex1@gmail.com	01829080921	2500	Rocket	jsfjcpasi	jsfj	2022-11-07 13:28:42	Inactive
4		4	Seba hospital limited	swadheen roy	swadheen	swadheen@gmail.com	+8801756175342	2500	Nagad	hf-kfjg-kgj	hello	2022-11-12 07:29:37	Active

MAIN MENU

- Dashboard
- Services
- Nurse List
- Hire Request
- Hospitals
- Manage Subscription Fee
- Subscription Bought History
- Website Settings
- My Subscription

SUBSCRIPTION BOUYED VIEW SUBSCRIPTION BOUYED

← →

Id	2
Hospital Id	Square Hospitals Limited
User Id	Hridoy roy
Name	hridoy
Email	Hridoy1@gmail.com
Phone Number	01399394943
Fee	3000
Payment Method	Bkash
Transaction No	ewrewrew
Message	please
Created At	2022-11-04 17:06:33
Updated At	2022-11-04 17:06:33
Status	Active

Figure 27 All subscription history prototype

Manage subscription prototype :

The screenshot shows a web application interface for 'SMART MEDICARE'. On the left is a sidebar menu with options: Dashboard, Services, Nurse List, Hire Request, Hospitals, Manage Subscription Fee (highlighted), Subscription Bought History, Website Settings, and My Subscription. The main content area is titled 'MANAGE SUBSCRIPTION FEE' and includes a 'VIEW MANAGE SUBSCRIPTION FEE' link. At the top of the main area are two green buttons: 'APPLY CHANGE(S)' and 'SAVE'. Below these is a form titled 'MANAGE SUBSCRIPTION FEE' with three fields: 'Hospital Id' (a dropdown menu showing 'Square Hospitals Limited'), 'Fee' (a text input field containing '2000'), and 'Status' (a dropdown menu showing 'Active').

Blast mail prototype :

The screenshot shows a web application interface for 'SMART MEDICARE'. On the left is a sidebar menu with options: Users Management, Groups Management, Blast Email (highlighted), Files & Media, and Activity Logs. The main content area is titled 'BLAST EMAIL SEND EMAIL TO USERS'. It features a 'Subject' text input field. Below this is a 'Send To' section with radio buttons for 'Superadmin', 'Administrator', 'User', and 'Hospital'. To the right of this section is a 'Status' section with radio buttons for 'All Status', 'Active', 'Unconfirmed', and 'Blocked'. Below these sections is an 'Email Message' section with a rich text editor. The editor has a menu bar with 'File', 'Edit', 'Insert', 'View', 'Format', 'Table', and 'Tools'. The toolbar includes options for Paragraph, Bold (B), Italic (I), Underline (U), Text Color (A), Background Color (A), Font Size (11pt), Line Height, Link, Bulleted List, Numbered List, Indent, Outdent, Undo, and Redo. Below the editor is a 'You Can Use :' section with a placeholder text: '{fullname} {first_name} {last_name} {email}'. At the bottom of the form is a blue 'Send Mail' button.

Figure 28 Blast mail prototype

Chapter 9 – Engineering

9.1 New system modules

Login module:

SL	User action	SL	System action
1	Smart medicare website link	1	The user will see a login form.
2	After user registration he will get login option and his user password will be saved	2	To get access to the project, the user has to log into the system with his username and password. If authenticated, he can get access.
3	Finally click on User Login button	3	Then the user will click and if the user authentication is valid then they will be able to enroll in the project.

Table 17: Login module

Enroll nurse module:

SL	User action	SL	System action
1	Admin will click on nurse section	1	The nurse will be aware of the information.
2	Admin can know the information of all nurses	2	Admin can decide to place the nurse in the module based on that information.
3	Admin will click on Patient Information option.	3	If all the details of the nurse are verified then she will be ready for her service.

Table 18 : Enroll nurse module

patient module:

SL	User action	SL	System action
1	Admin will click on Patient section	1	It prepares the profession to receive services.
2	Admin can know the information of all patients	2	Admin will get all information.
3	Admin will click on Patient Information option.	3	If all the information is correct then the patient will get service from the scheme.

Table 19: patient module

Notification Module :

SL	Patient action	SL	System action
1	Admin will send on Patient notification	1	List of all patients of the project can be seen in this module.
2	Admin has to click on notification button of the patient to whom he wants to send notification.	2	The system provides one page to capture all patient information
3	Admin will click on patient's notification button.	3	Patient information will still be accessible.

Table 20 notification module

Patient Feedback Module:

SL	Patient action	SL	System action
1	Click on feedback in admin user module.	1	You can see which users have given feedback.
2	Admin can replay all feedback via feedback option	2	Admin can edit, delete and control feedback.
3	By clicking on the admin feedback option, all the information of the user will be displayed in front of him.	3	Admin can control the spam feedback from the system
4	Admin can turn off feedback option.		User will not see any feedback.

Table 21: Patient Feedback Module

Subscription Module:

SL	Customer Action	SL	System action
1	Admin will click on Subscription module	1	viewed the subscription schedule.
2	Admin can see which hospital user has purchased subscription for.	2	Admin can see all money account.
3	Users can monitor how many times they are receiving treatment from a hospital.	3	And the subscription will be canceled at the end of the user's period

Table 22: Subscription Module

Payment Module:

SL	Customer Action	SL	System action
1	Admin will click on payment module.	1	viewed the payment .
2	Admin can see daily updates of payments. Admin can see hospital user who has purchased subscription .	2	All admins can see the daily earnings and how much money has been spent on some subscriptions.

Table 23: Payment Module

9.2 Use Case

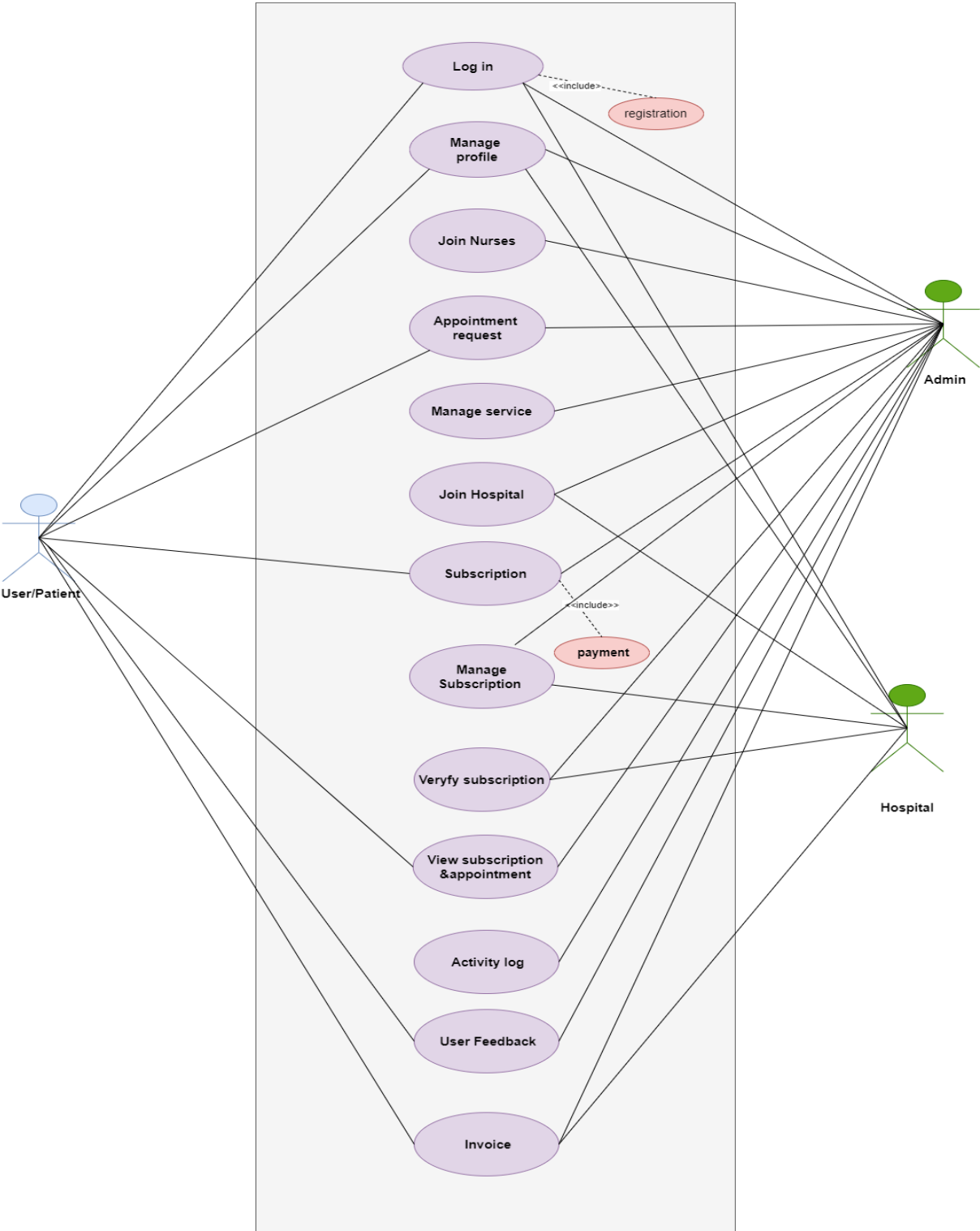


Figure 29 Use case of smart Medicare

9.3 Class Diagram

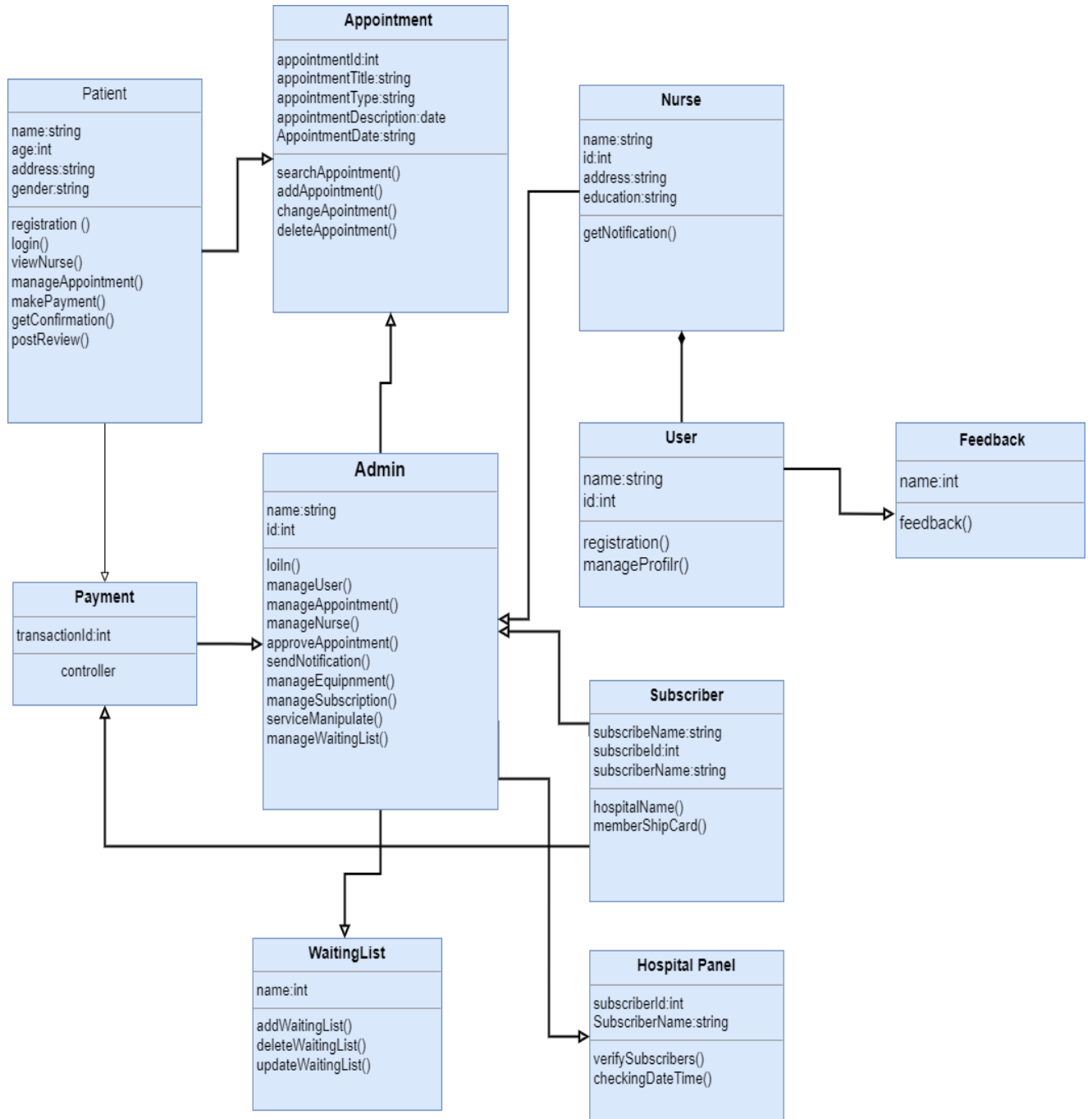


Figure 30 Class diagram for smart Medicare

9.4 Peter Chen EERD Diagram

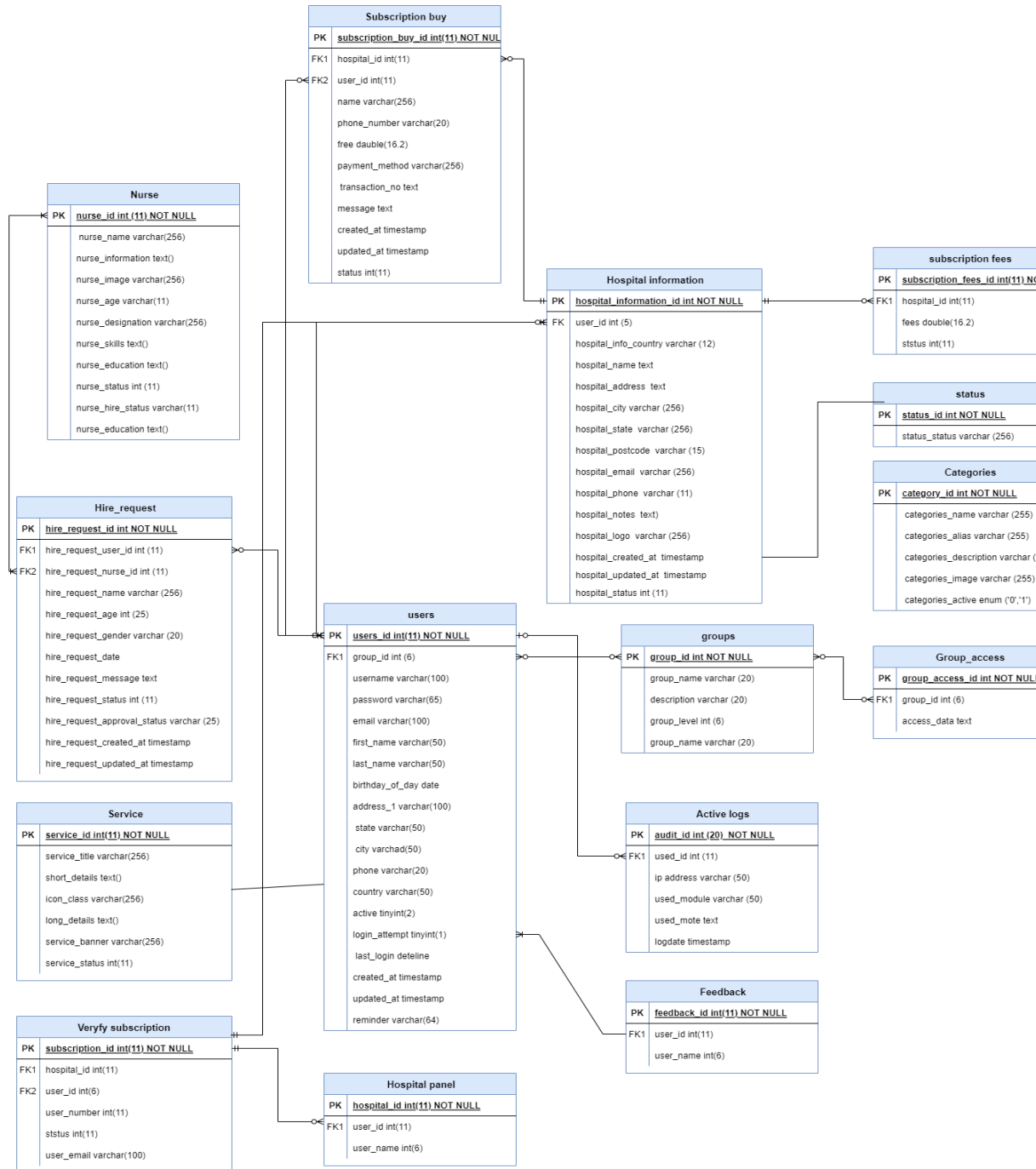


Figure 31 EERD diagram of smart Medicare

9.5 Sequence Diagram

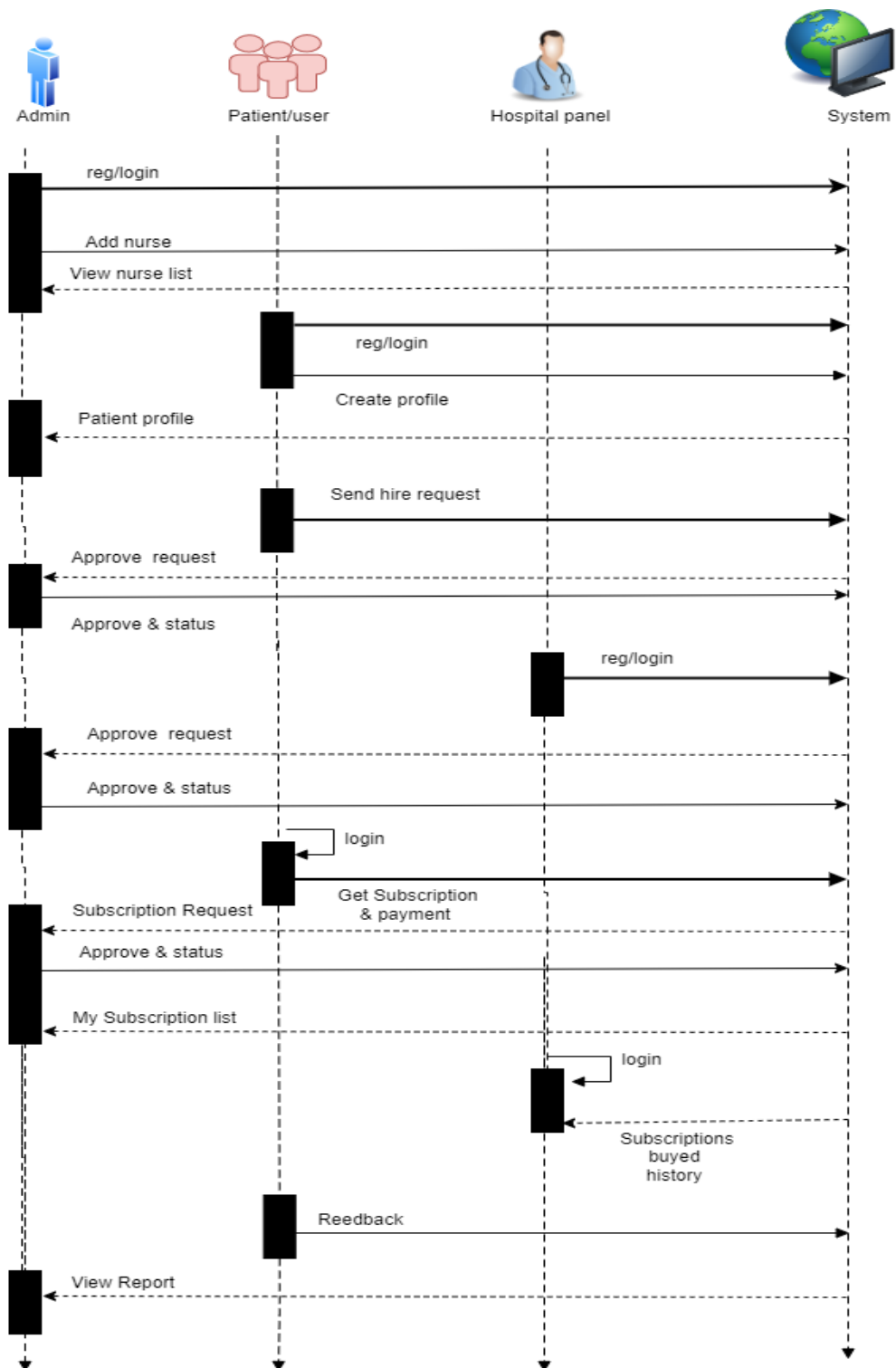


Figure 32 Sequence Diagram for smart Medicare

9.6 Component Diagram

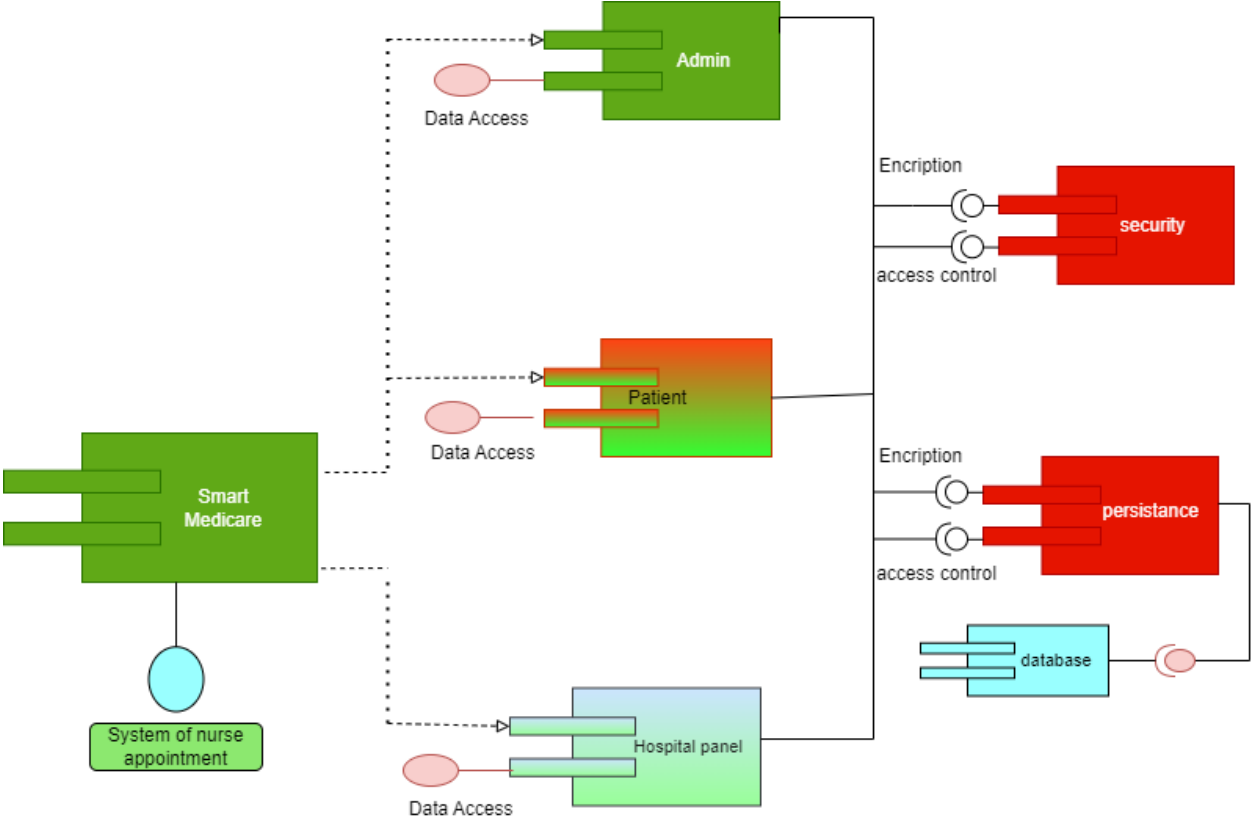


Figure 33 Component Diagram for smart Medicare

9.7 Deployment Diagram

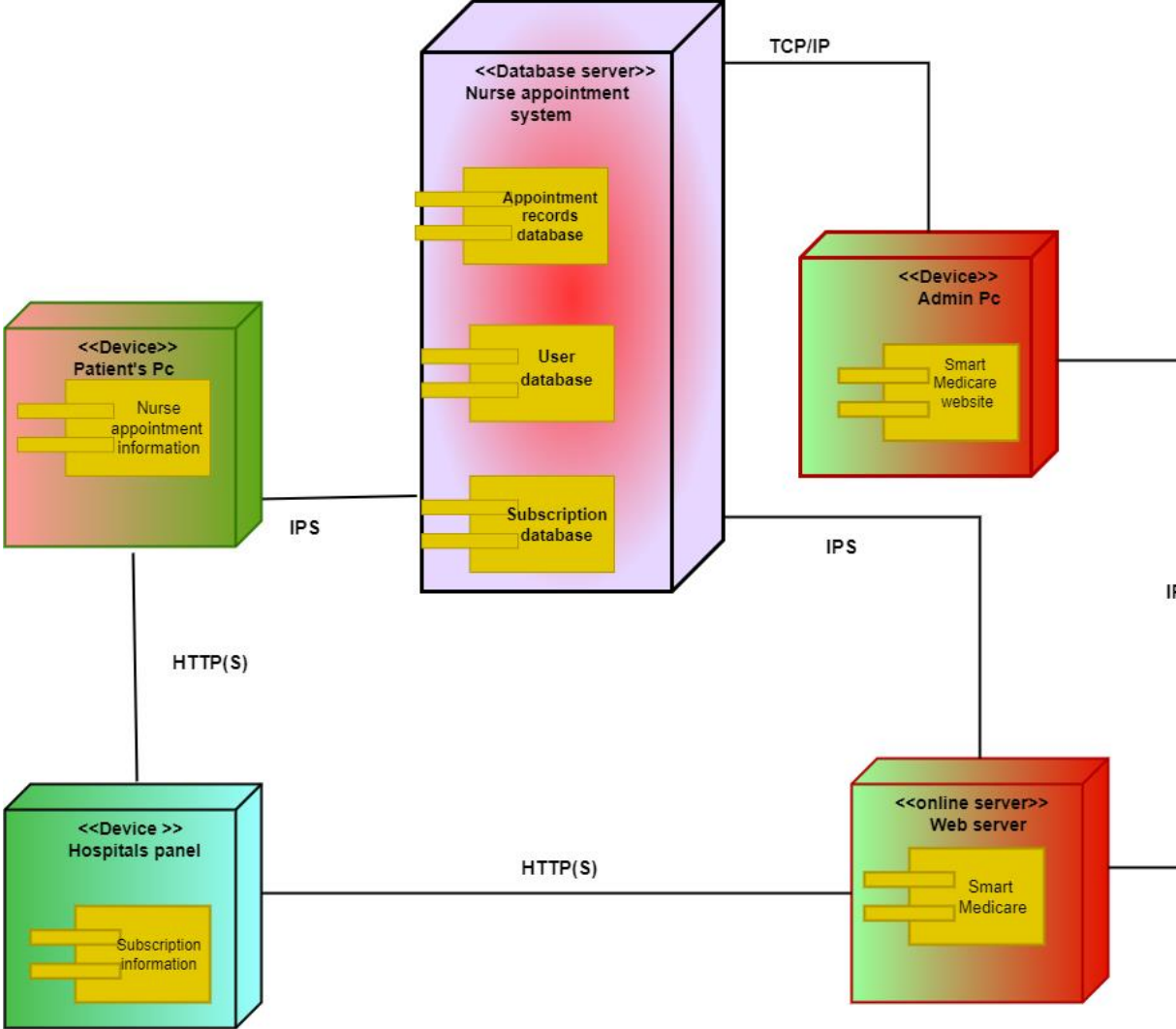


Figure 34 Deployment Diagram for smart Medicare

9.8 System Interface Design

Home page interface:

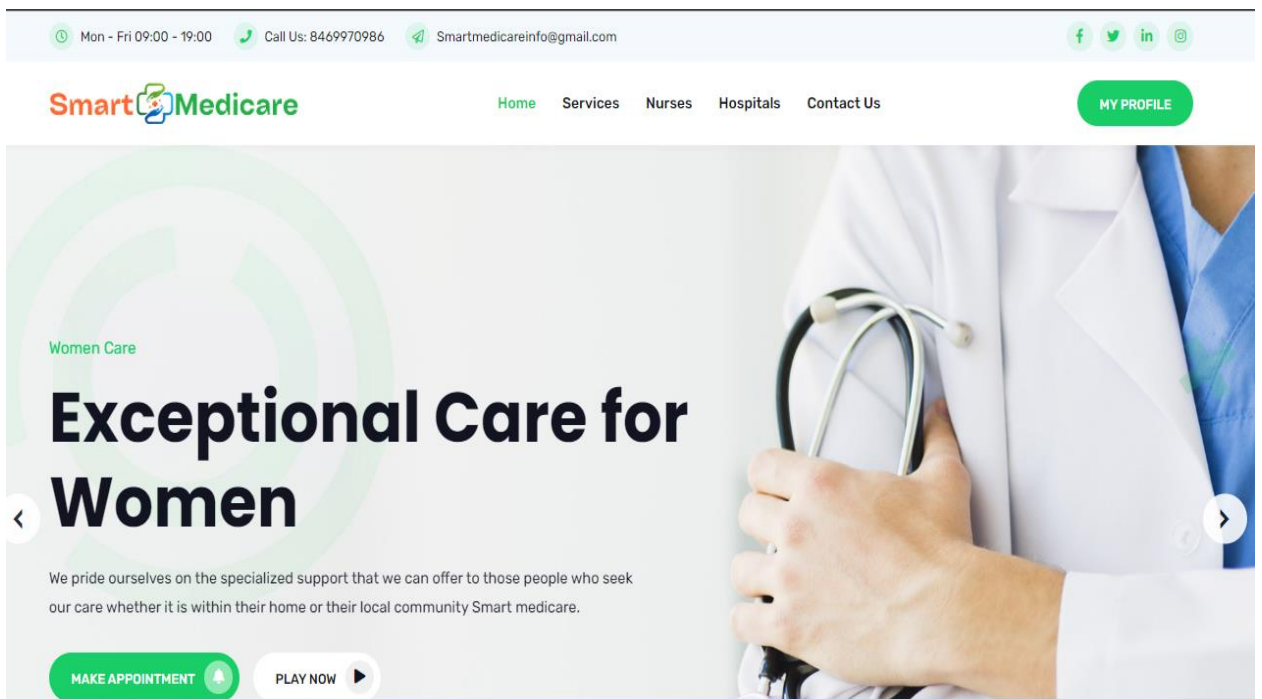
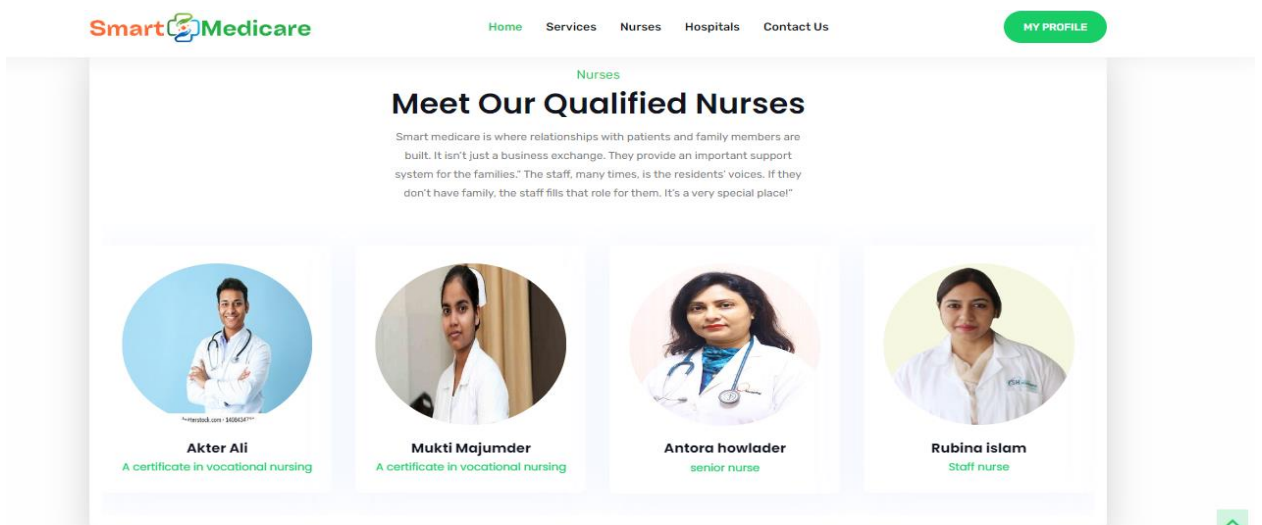


Figure 35 Home page interface

Nurses page interface:



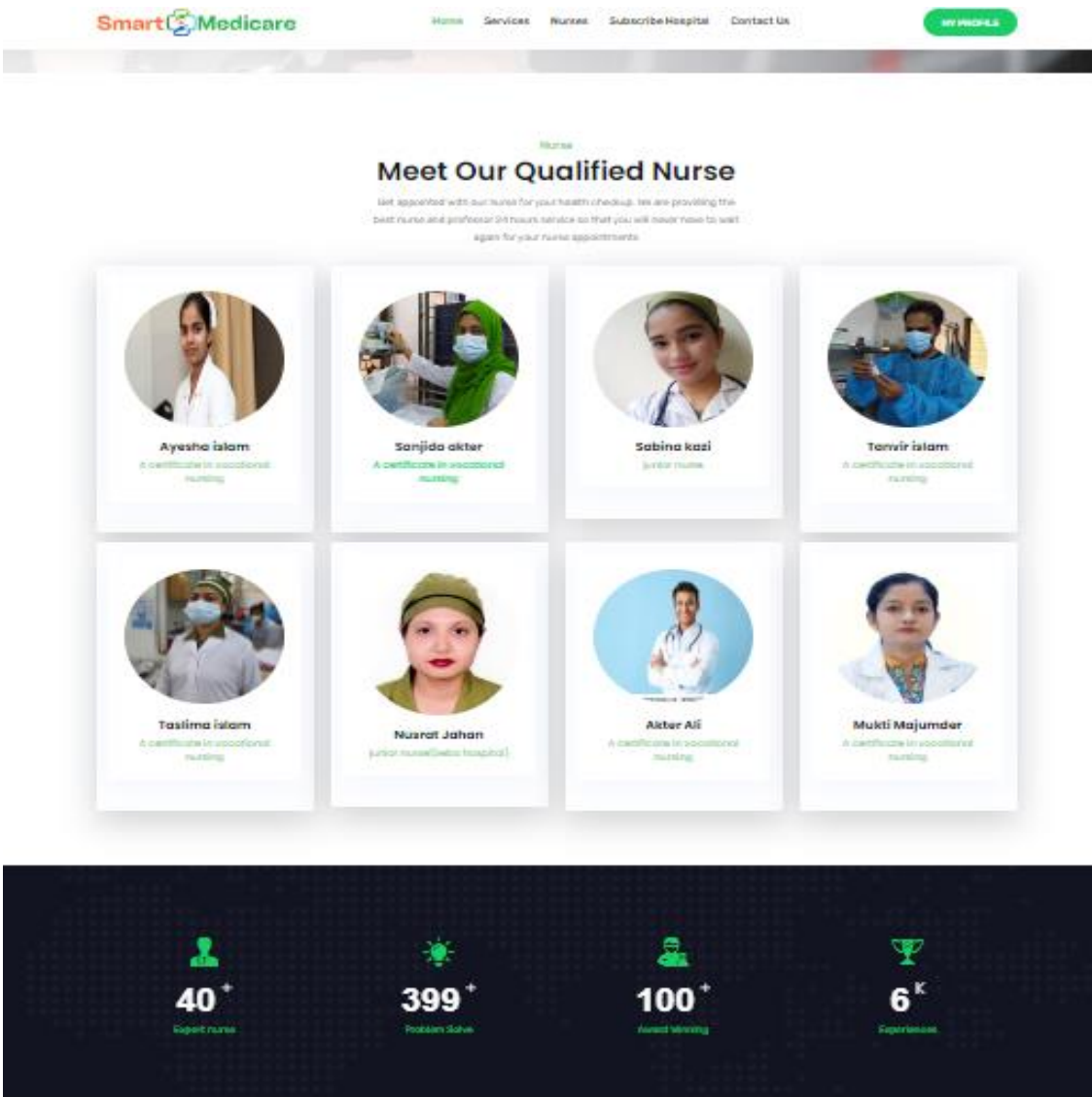


Figure 36 Nurse page interface

Hospital subscription page interface:

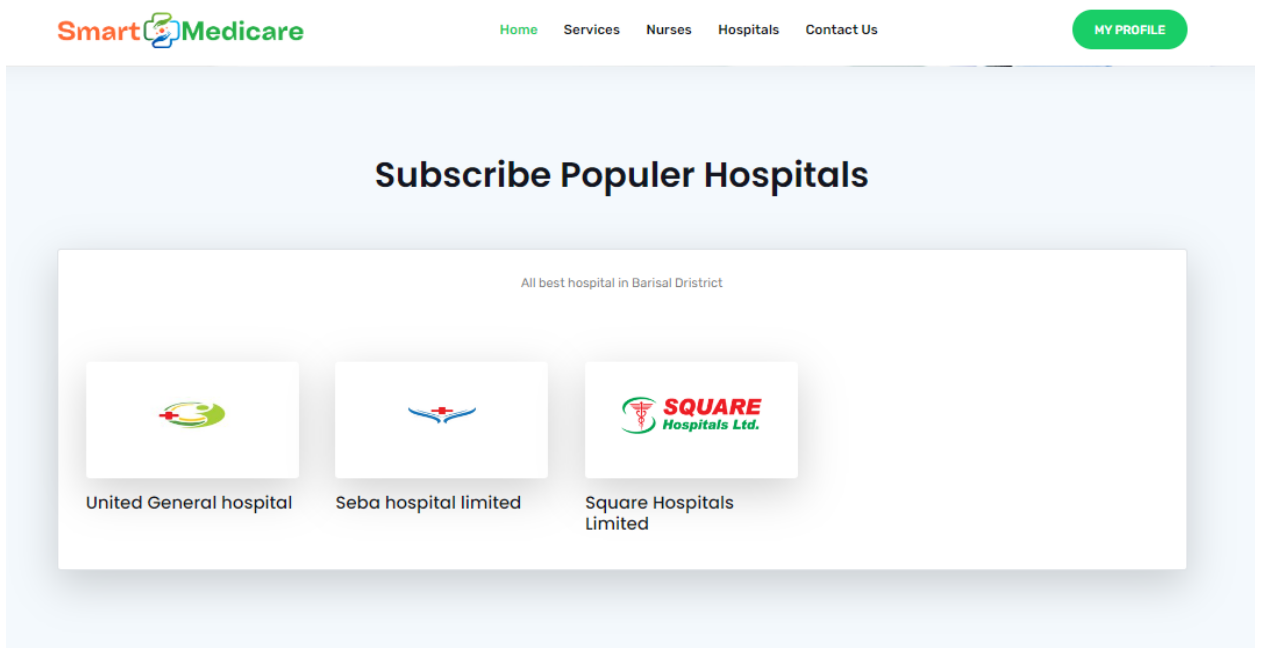


Figure 37 Hospital subscription page interface

Login page interface:

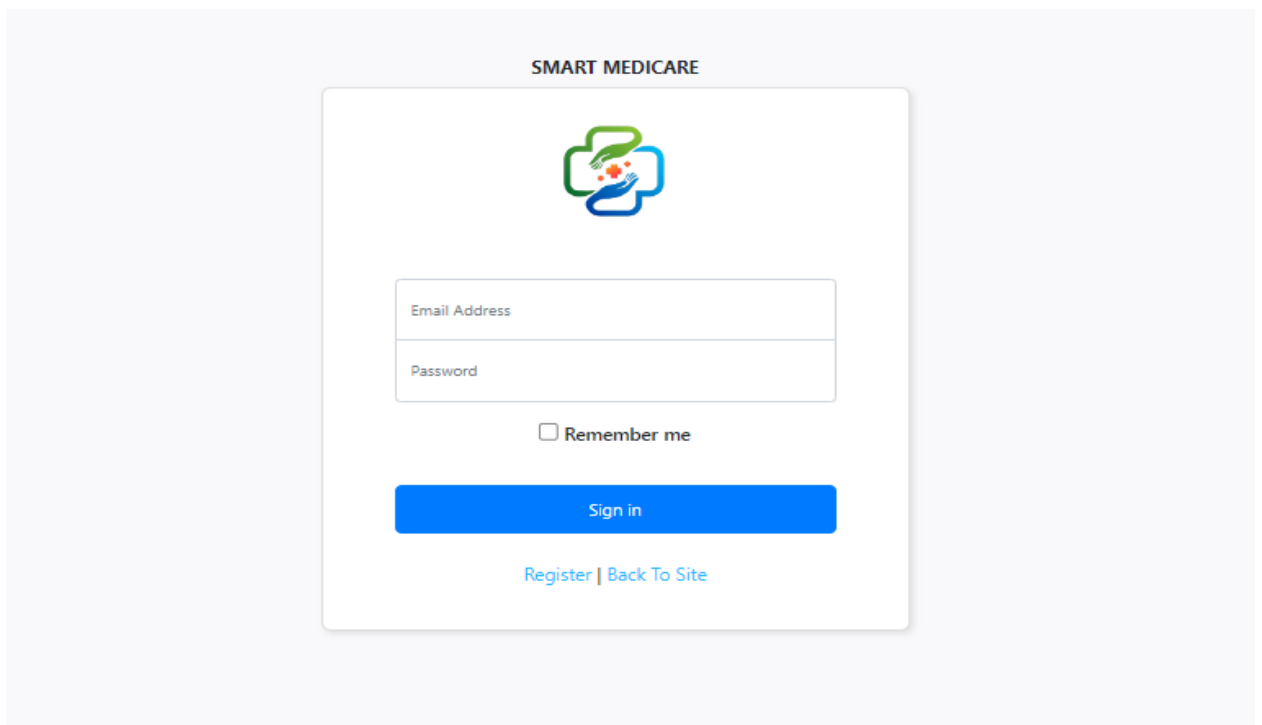


Figure 38 Login page interface

Service page interface:

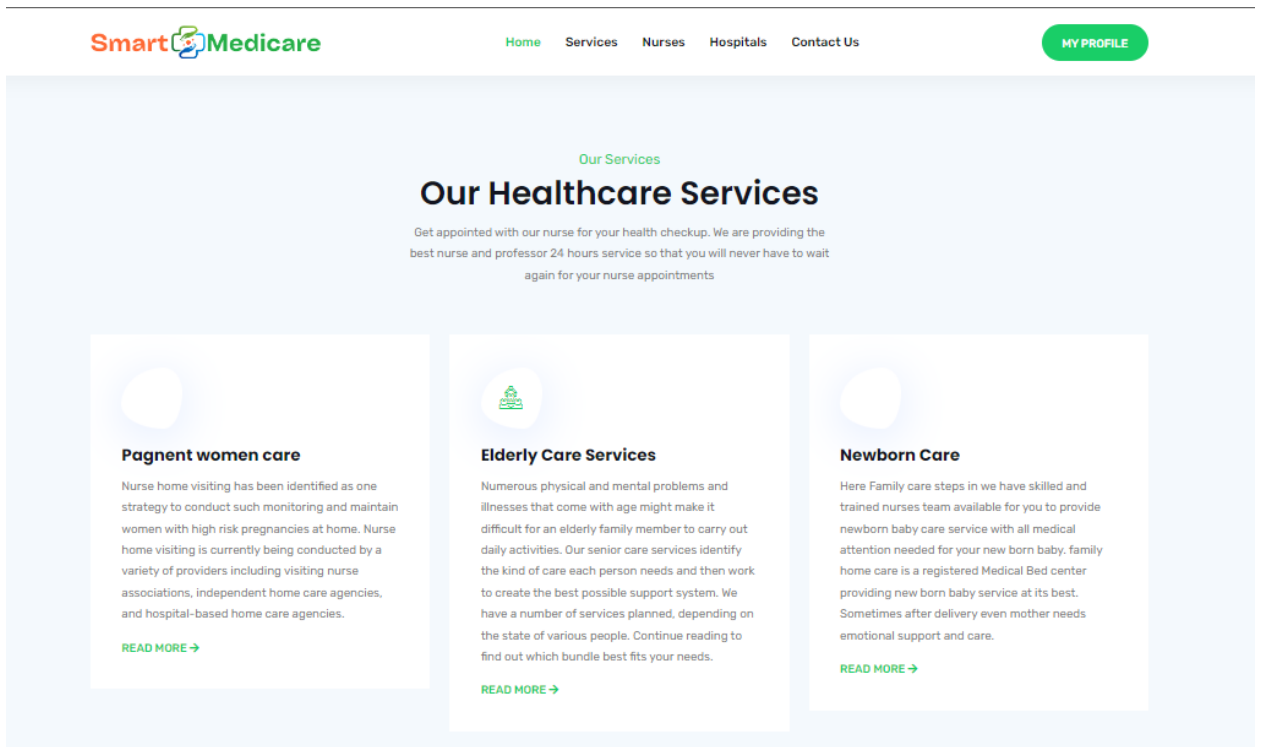


Figure 39 Service page interface

Subscription form interface:

The screenshot shows a subscription form for 'Seba hospital limited'. At the top, there is a pink header with the text 'Subscribe Seba hospital limited' and a sub-header 'Want better experiences'. Below this, a white box contains three green checkmarks with the following text: 'Subscription duration 1 year', 'Get 20% discount in this Hospital', and 'Apply only Test & rent room'. The form itself is a white box with several input fields: 'Name', 'Email', 'Phone', 'Transaction Id', and 'Your Message'. There is a dropdown menu for 'Select Payment Method' and a '1 year' option. A green 'SUBSCRIBE' button with a right-pointing arrow is at the bottom of the form.

Figure 40 Subscription form interface

Contact form interface:

The screenshot shows the contact page for 'Smart Medicare'. The header includes the logo 'Smart Medicare' and navigation links: 'Home', 'Services', 'Nurses', 'Hospitals', 'Contact Us', and a 'MY PROFILE' button. The main heading is 'Hospitals' with a breadcrumb 'Home > Hospitals'. Below this is a 'Send Message' link and the text 'Drop us message for any query' followed by 'If you have an idea, we would love to hear about it.'. The contact form has fields for 'Name', 'Email', 'Phone', and 'Subject', along with a 'Your Message' text area. To the right of the form, there are three contact options: 'Address', 'Email' (Smartmedicareinfo@gmail.com), and 'Phone' (8469970986). A green 'SEND MESSAGE' button with a right-pointing arrow is at the bottom of the form.

Figure 41 Contact page interface

User profile interface:

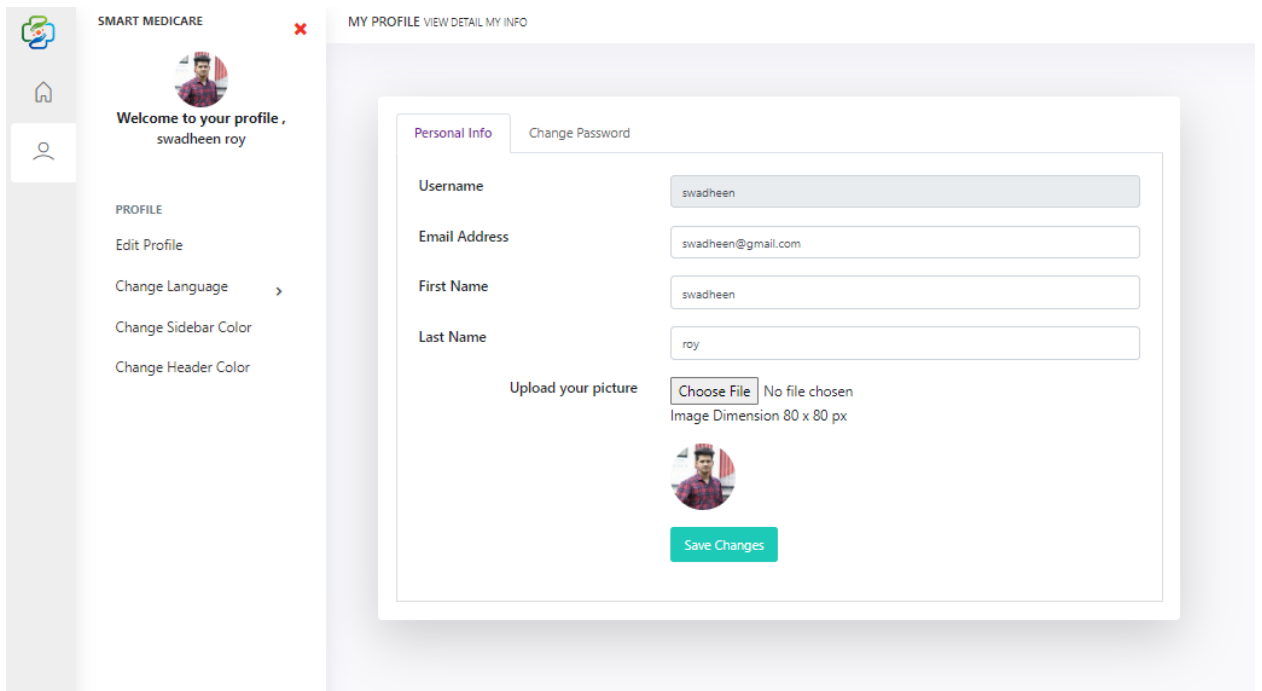


Figure 42 User profile interface

Hospital profile interface:

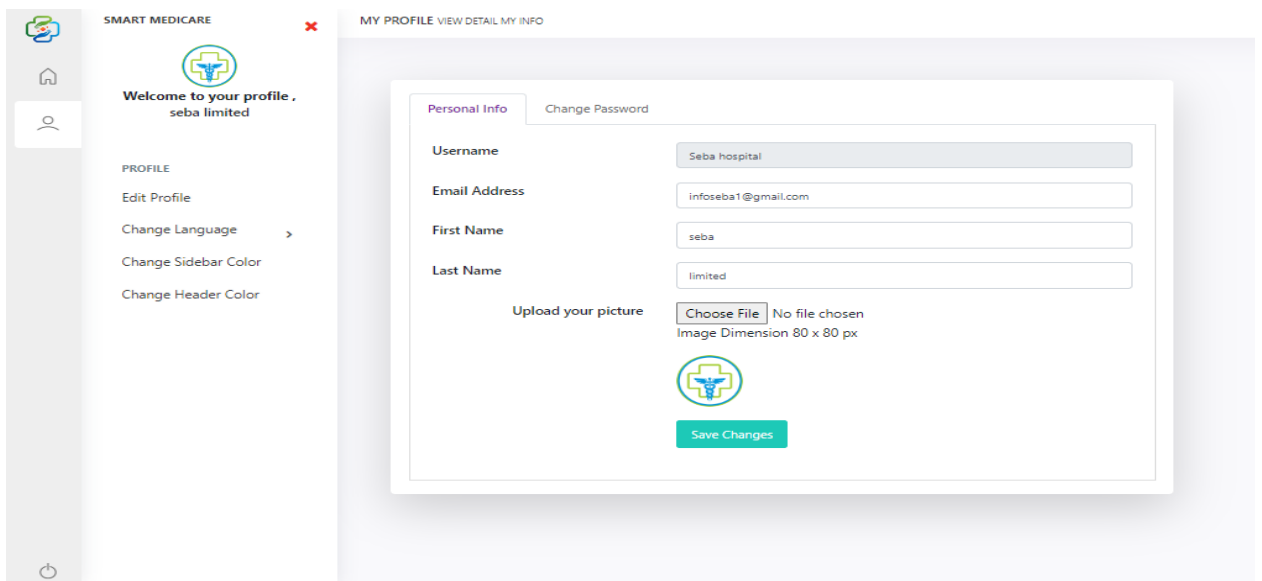


Figure 43 Hospital profile interface

Hospital subscriber list interface:

SMART MEDICARE

SUBSCRIPTION BOUYED VIEW SUBSCRIPTION BOUYED

BULK ACTION FILTER Type And Hit Enter

No	Action	Id	Hospital Id	User Id	Name	Email	Phone Number	Fee	Payment Method	Transaction No	Status
1		1	Square Hospitals Limited	akash bani	akash	akash@gmail.com	+8801756175438	3000	Bkash	232rwe324234	Active
2		2	Square Hospitals Limited	Hridoy roy	hridoy	Hridoy1@gmail.com	01399394943	3000	Bkash	ewrewrew	Active
3		3	Seba hospital limited	Alen singho	Alex	alex1@gmail.com	01829080921	2500	Rocket	jsfkopasi	Inactive
4		4	Seba hospital limited	swadheen roy	swadheen	swadheen@gmail.com	+8801756175342	2500	Nagad	hf-kifg-kgj	Active

MAIN MENU

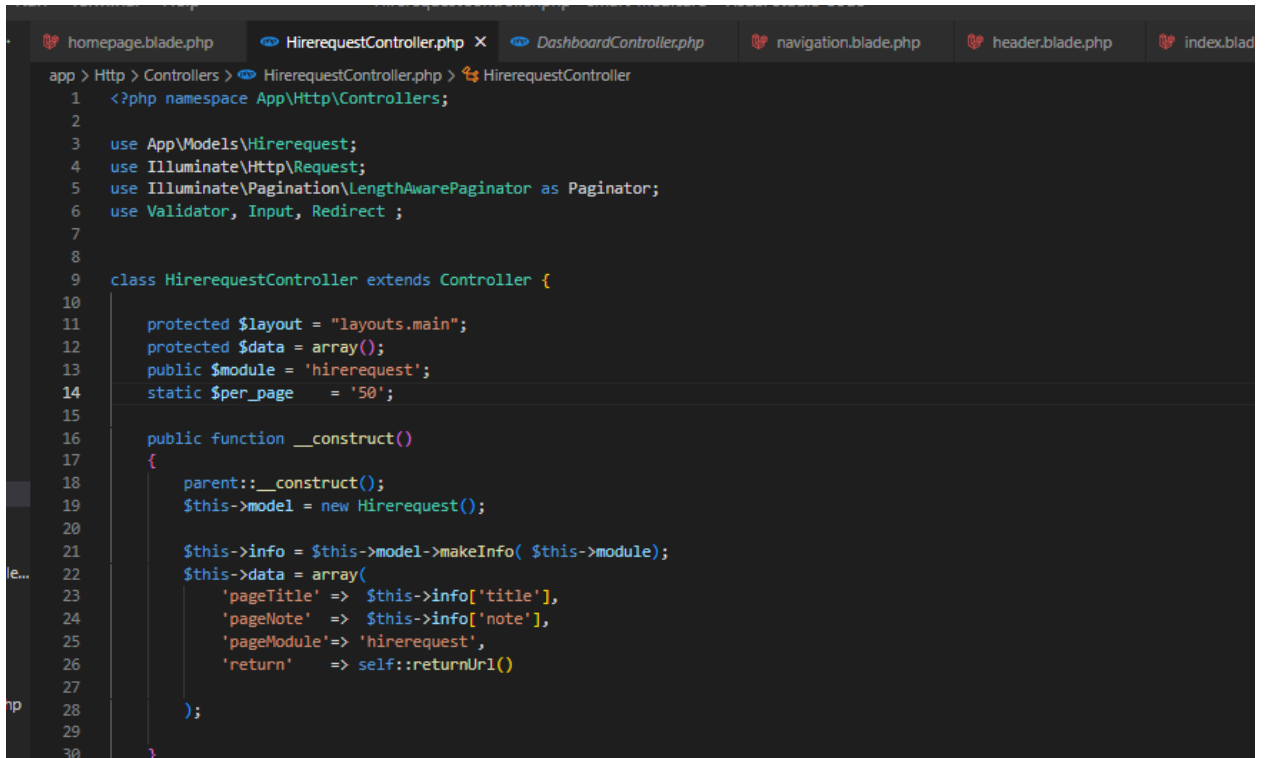
- Dashboard
- Hire Request
- Subscription Bought History

Figure 44 Hospital subscriber list interface

Chapter 10 – Deployment

10.1 Core Module Coding Samples

Nurses appointment controller:



```
app > Http > Controllers > HirerequestController.php > HirerequestController
1  <?php namespace App\Http\Controllers;
2
3  use App\Models\Hirerequest;
4  use Illuminate\Http\Request;
5  use Illuminate\Pagination\LengthAwarePaginator as Paginator;
6  use Validator, Input, Redirect ;
7
8
9  class HirerequestController extends Controller {
10
11     protected $layout = "layouts.main";
12     protected $data = array();
13     public $module = 'hirerequest';
14     static $per_page = '50';
15
16     public function __construct()
17     {
18         parent::__construct();
19         $this->model = new Hirerequest();
20
21         $this->info = $this->model->makeInfo( $this->module);
22         $this->data = array(
23             'pageTitle' => $this->info['title'],
24             'pageNote' => $this->info['note'],
25             'pageModule'=> 'hirerequest',
26             'return' => self::returnUrl()
27         );
28     }
29
30 }
```

Figure 45 Nurses appointment controller

Hospital Subscription controller:

```
omepage.blade.php HirerequestController.php HospitalsController.php X navigation.blade.php header.blade.php index.blade.php
> Http > Controllers > HospitalsController.php > ...
}

public function index( Request $request )
{
    // Make Sure users Logged
    if(!\Auth::check())
        return redirect('user/login')->with('status', 'error')->with('message','You are not login');
    $this->grab( $request );
    if($this->access['is_view'] ==0)
        return redirect('dashboard')->with('message', __('core.note_restric'))->with('status','error');
    // Render into template
    return view( $this->module.'.index',$this->data);
}

function create( Request $request , $id =0 )
{
    $this->hook( $request );
    if($this->access['is_add'] ==0)
        return redirect('dashboard')->with('message', __('core.note_restric'))->with('status','error');

    $this->data['row'] = $this->model->getColumnTable( $this->info['table']);

    $this->data['id'] = '';
    return view($this->module.'.form',$this->data);
}

function edit( Request $request , $id )
{
    $this->hook( $request , $id );
    if(!isset($this->data['row']))
        return redirect($this->module)->with('message','Record Not Found !')->with('status','error');
}
BLEMS OUTPUT DEBUG CONSOLE TERMINAL
```

Figure 46 Hospital Subscription controller

Notification controller:

```

9 class NotificationController extends Controller {
10
11     protected $layout = "layouts.main";
12     protected $data = array();
13     public $module = 'notification';
14     static $per_page = '10';
15
16     public function __construct()
17     {
18         parent::__construct();
19         $this->model = new Notification();
20         $this->info = $this->model->makeInfo( $this->module);
21         $this->data = array(
22             'pageTitle' => $this->info['title'],
23             'pageNote' => $this->info['note'],
24             'pageModule' => 'notification',
25             'return' => self::returnUrl()
26         );
27     }
28
29 }
30
31 public function index( Request $request )
32 {
33     // Make Sure users Logged
34     if(!\Auth::check())
35         return redirect('user/login')->with('status', 'error')->with('message','You are not login');
36     $this->grab( $request );
37     if($this->access['is_view'] ==0)
38         return redirect('dashboard')->with('message', __('core.note_restric'))->with('status','error');
39     // Render into template
40     \DB::table('tb_notification')->where('userid',session('uid'))->update(['is_read'=>'1']);
41     return view( $this->module.'.index',$this->data);
42 }
43

```

Figure 47 Notification Controller

Nurse request:

```



```

Figure 48 Nurse request

subscription page:

```
1 @extends('layouts.app')
2
3 @section('content')
4 <div class="page-header"><h2> {{ $pageTitle }} <small> {{ $pageNote }} </small> </h2></div>
5 <div class="toolbar-nav" >
6 <div class="row">
7 <div class="col-md-8">
8 @if($access['is_add'] ==1)
9 <a href="{{ url('mysubscription/create?return='.$return) }}" class="btn btn-default btn-sm"
10 title="{{ __('core.btn_create') }}"><i class=" fa fa-plus "></i> Create New </a>
11 @endif
12
13 <div class="btn-group">
14 <button type="button" class="btn btn-default btn-sm dropdown-toggle" data-toggle="dropdown" aria-haspopup="true" aria-expanded="false">
15 <ul class="dropdown-menu">
16 @if($access['is_remove'] ==1)
17 <li class="nav-item"><a href="javascript://ajax" onclick="SximoDelete();" class="nav-link tips" title="{{ __('core.btn_remove_selected') }}">
18 Remove Selected </a></li>
19 @endif
20 @if($access['is_add'] ==1)
21 <li class="nav-item"><a href="javascript://ajax" class=" copy nav-link " title="Copy" > Copy selected</a></li>
22 <div class="dropdown-divider"></div>
23 <li class="nav-item"><a href="{{ url($pageModule .'import?return='.$return) }}" onclick="SximoModal(this.href, 'Import CSV')">
24 Import CSV </a></li>
25 @endif
26 @if($access['is_excel'] ==1)
27 <li class="nav-item"><a href="{{ url($pageModule .'export?do=excel&return='.$return) }}" class="nav-link "> Export Excel </a></li>
28 @endif
29 @if($access['is_csv'] ==1)
30 <li class="nav-item"><a href="{{ url($pageModule .'export?do=csv&return='.$return) }}" class="nav-link "> Export CSV </a></li>
31 @endif
32 </ul></div>
33 </div>
34 </div>
35 </div>
36 </div>
```

Figure 49 Subscription page

review page:

```
@extends('layouts.app')
@section('content')
<div class="page-header"><h2> {{ $pageTitle }} <small> {{ $pageNote }} </small> </h2></div>
<div class="toolbar-nav" >
<div class="row">
<div class="col-md-8">
@if($access['is_add'] ==1)
<a href="{{ url('reviews/create?return='.$return) }}" class="btn btn-default btn-sm"
title="{{ __('core.btn_create') }}"><i class=" fa fa-plus "></i> Create New </a>
@endif
<div class="btn-group">
<button type="button" class="btn btn-default btn-sm dropdown-toggle" data-toggle="dropdown" aria-haspopup="true" aria-expanded="false">
<ul class="dropdown-menu">
@if($access['is_remove'] ==1)
<li class="nav-item"><a href="javascript://ajax" onclick="SximoDelete();" class="nav-link tips" title="{{ __('core.btn_remove_selected') }}">
Remove Selected </a></li>
@endif
@if($access['is_add'] ==1)
<li class="nav-item"><a href="javascript://ajax" class=" copy nav-link " title="Copy" > Copy selected</a></li>
<div class="dropdown-divider"></div>
<li class="nav-item"><a href="{{ url($pageModule .'import?return='.$return) }}" onclick="SximoModal(this.href, 'Import CSV')">
Import CSV </a></li>
@endif
@if($access['is_excel'] ==1)
<li class="nav-item"><a href="{{ url($pageModule .'export?do=excel&return='.$return) }}" class="nav-link "> Export Excel </a></li>
@endif
@if($access['is_csv'] ==1)
<li class="nav-item"><a href="{{ url($pageModule .'export?do=csv&return='.$return) }}" class="nav-link "> Export CSV </a></li>
@endif
</ul></div>
</div>
</div>
</div>
```

Figure 50 Review page

Route:

```
23
24 Route::get('dashboard/import', 'DashboardController@getImport');
25 /* Auth & Profile */
26 Route::get('user/profile', 'UserController@getProfile');
27 Route::get('user/theme', 'UserController@getTheme');
28 Route::get('user/login', 'UserController@getLogin');
29 Route::get('user/register', 'UserController@getRegister');
30 Route::get('user/logout', 'UserController@getLogout');
31 Route::get('user/reminder', 'UserController@getReminder');
32 Route::get('user/reset/{any?}', 'UserController@getReset');
33 Route::get('user/reminder', 'UserController@getReminder');
34 Route::get('user/activation', 'UserController@getActivation');
35 // Social Login
36 Route::get('user/socialize/{any?}', 'UserController@socialize');
37 Route::get('user/autosocialize/{any?}', 'UserController@autosocialize');
38 //
39 Route::post('user/signin', 'UserController@postSignin');
40 Route::post('user/login', 'UserController@postSigninMobile');
41 Route::post('user/signup', 'UserController@postSignupMobile');
42 Route::post('user/create', 'UserController@postCreate');
43 Route::post('user/saveprofile', 'UserController@postSaveprofile');
44 Route::post('user/savepassword', 'UserController@postSavepassword');
45 Route::post('user/doreset/{any?}', 'UserController@postDoreset');
46 Route::post('user/request', 'UserController@postRequest');
47 /* Posts & Blogs */
48 Route::get('posts', 'HomeController@posts');
49 Route::get('posts/category/{any?}', 'HomeController@posts');
50 Route::get('posts/read/{any?}', 'HomeController@read');
51 Route::post('posts/comment', 'HomeController@comment');
52 Route::get('posts/remove/{id?}/{id2?}/{id3?}', 'HomeController@remove');
53 // Start Routes for Notification
54 Route::resource('notification', 'NotificationController');
55 Route::get('home/load', 'HomeController@getLoad');
56 Route::get('home/lang/{any?}', 'HomeController@getLang');
```

```
3 // Start Routes for nurses
4 Route::resource('services/nurses', 'Services\NursesController');
5 // End Routes for nurses
6
7
8 // Start Routes for websitesetting
9 Route::resource('services/websitesetting', 'Services\WebsitesettingController');
10 // End Routes for websitesetting
11
12
13 // Start Routes for hirerequest
14 Route::resource('services/hirerequest', 'Services\HirerequestController');
15 // End Routes for hirerequest
16
17
18 // Start Routes for hospitals
19 Route::resource('services/hospitals', 'Services\HospitalsController');
20 // End Routes for hospitals
21
22
23 // Start Routes for managesubscribtionfee
24 Route::resource('services/managesubscribtionfee', 'Services\ManagesubscribtionfeeController');
25 // End Routes for managesubscribtionfee
26
27
28 // Start Routes for subscriptionbought
29 Route::resource('services/subscriptionbought', 'Services\SubscriptionboughtController');
30 // End Routes for subscriptionbought
31
32
33 // Start Routes for ourservices
34 Route::resource('services/ourservices', 'Services\OurservicesController');
35 // End Routes for ourservices
```

Figure 51 Service route

10.2 Possible Problem Breakdown

If a project is done alone then the project becomes difficult to develop and may encounter various problems. So breaking the project into smaller tasks to avoid those problems will reduce the potential breakdown process.

- Designing a database for a project is a very difficult task. So when the database is designed, the tasks should be divided into small parts and analyzed properly. And correctly complete the data design part.
- A project has different types of models in the dashboard so they need to be monitored to ensure that the process of managing them is thoroughly correct.
- The most important part of a project is the people who will use the technology, so the user panel should be given the most importance and the panel should be improved by analyzing as much as possible.

panel development for users:

- advance Front end development.
- Very easily accessible.
- User authentication
- Easily access patient, doctor and hospital panels.
- Payment online
- system to send feedback
- system to send notifications

Analysis & database design

- Gather accurate information
- Similar data should be removed.
- Requirement Identification
- Data normalize
- Database design
- Prioritize data

Dashboard management

- manage nurse appointment
- Different login system for different role of the project
- manage subscription
- manage payment module

10.2 Prioritization while developing

Prioritize series	Requirement
1.	Patient can registration and Login
2	Patients can apply for nurse appointment
3	Patients will be able to submit applications for customer service
4	authentication through service request admin.
5	Admin can alter services.
6	Admins can manage service requests.
7	View patient List
8	A hospital subscription is available to patients.
9	Each hospital authority and the system administrator can view the subscription list.
10	Each hospital authority can verify subscription list
11	Patients can pay online
12	patient Obtain verification
13	Generate Report/ Create a Report
14	Patients can provide comments on the service.

Table 24 Prioritization while developing

Chapter 11 – Testing

11.1 Test plan acceptance

Testing is an important part of maintaining the correct standards and quality of a software. And so the plan should analyze what kind of testing will meet user and developer acceptance criteria. So project developers should plan and test the software accordingly.

There are two types of testing by project analysis:

- Functional Testing
- Nonfunctional Testing

Functional testing is generally of three types, these are:

Unit Testing

- Increases the quality of the project's code.
- Project problems are detected early and bugs are caught. Since it is also tested by the developer, other parts of the code do not face any problems.
- Since bugs are caught early in the project, it doesn't take much time to fix the problems and reduce cost.

Module testing

- This test is done before testing the entire project. Module testing is done to check that the individual parts of the software are working properly.
- Easily conveys the complexities of the project.

Integration Testing

- Checking the quality of individual components of the software.
- The module is tested to ensure correct communication.

Smart Medicare project will test the three types of non-functional:

Security testing

- Identifies projector or software vulnerabilities.
- Protects the system from intruders,
- Problems are identified and resolved through cording.

Reliability Testing

- Finding a permanent structure of the software that does not cause any kind of failure later on in the software.
- Reliability testing is done to check whether the project or a piece of software will function properly when it is released to the marketplace.

Acceptance Testing:

- It is the end user before release to the market to set project criteria and user needs.
- This is done at the final stage after doing some sort of testing and system testing.
- Checking that all functions of the patient are working properly.

11.2 Test case

After considering the project testing those functions should be prepared for testing so I am showing the test case of Smart Medicare below.

Unit test –test case:

TEST CASE NAME UNIT TEST

TEST CLASS	
TEST DESCRIPTION	
DATA SOURCE	Test setup expected outcome real outcome

Module test –test case:

TEST CASE NAME UNIT TEST

TEST CLASS	
TEST DESCRIPTION	
DATA SOURCE	Test setup expected outcome real outcome

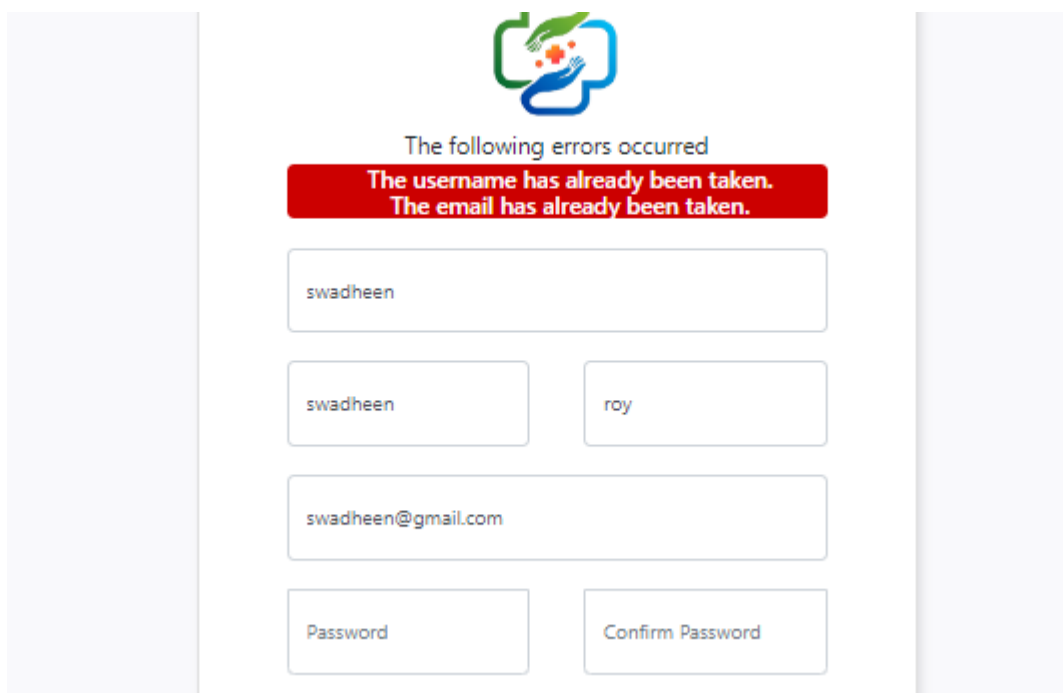
11.3 Unit testing

Unit test-1

Test case :

TEST CASE NAME	UNIT TEST
TEST CLASS	User registration
TEST DESCRIPTION	User name & email validation
DATA SOURCE	Test setup expected outcome real outcome
USER ENTRY	Submit the from error message need validations

Table 25 :Unit test case-1



The following errors occurred

**The username has already been taken.
The email has already been taken.**

swadheen

swadheen roy

swadheen@gmail.com

Password Confirm Password

Figure 52 Unit test case result-1


Unit test-2

Patient enrollment:

TEST CASE NAME UNIT TEST

TEST CLASS	patients enrollment		
TEST DESCRIPTION	User Email and Username		
DATA SOURCE	Test setup	expected outcome	Real outcome
USER ENTRY	Input all the information on the website and submit		

Table 26 Unit test case-2



The following errors occurred

The email has already been taken.

swadheener

swadheener royy

swadheen@gmail.com

Password Confirm Password

Sign Up

[Sign In](#) | [Back To Site](#)

Figure 53 Unit test case result-2

Use case-3

User login

TEST CASE NAME	CASE	UNIT TEST	TEST
TEST CLASS	User login		
TEST DESCRIPTION	email and password		
DATA SOURCE	Test setup	expected outcome	Real outcome
USER ENTRY	Incorrect registration data	Invalid message	Please input valid registered input

Table 27 : Unit test case-3

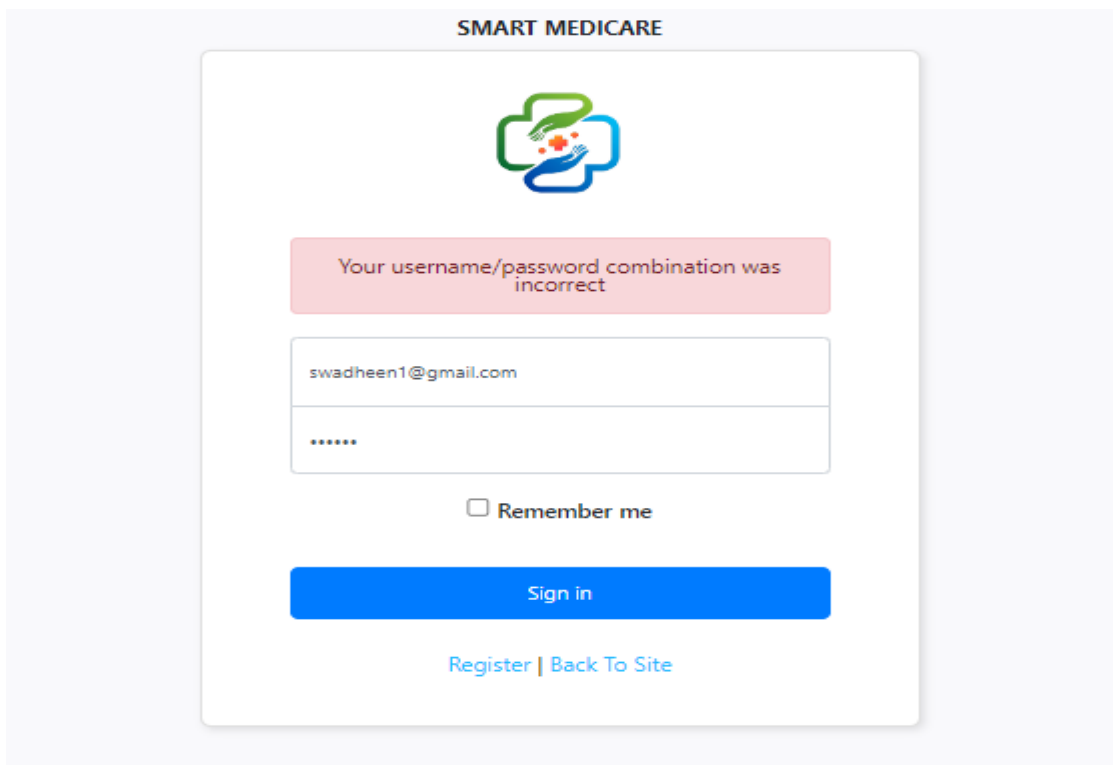


Figure 54 Unit test case result-3

11.4 Module test

Module test-1

TEST NAME	UNIT TEST						
TEST CLASS	Enroll nurse						
TEST DESCRIPTION	Admin has to fill the file						
DATA SOURCE	<table border="1"> <thead> <tr> <th>Test setup</th> <th>expected outcome</th> <th>Real outcome</th> </tr> </thead> <tbody> <tr> <td>Blank field is not acceptable</td> <td>see warning message</td> <td>Need validate information</td> </tr> </tbody> </table>	Test setup	expected outcome	Real outcome	Blank field is not acceptable	see warning message	Need validate information
Test setup	expected outcome	Real outcome					
Blank field is not acceptable	see warning message	Need validate information					
USER ENTRY	Blank field is not acceptable						

Table 28 : Model test case-1

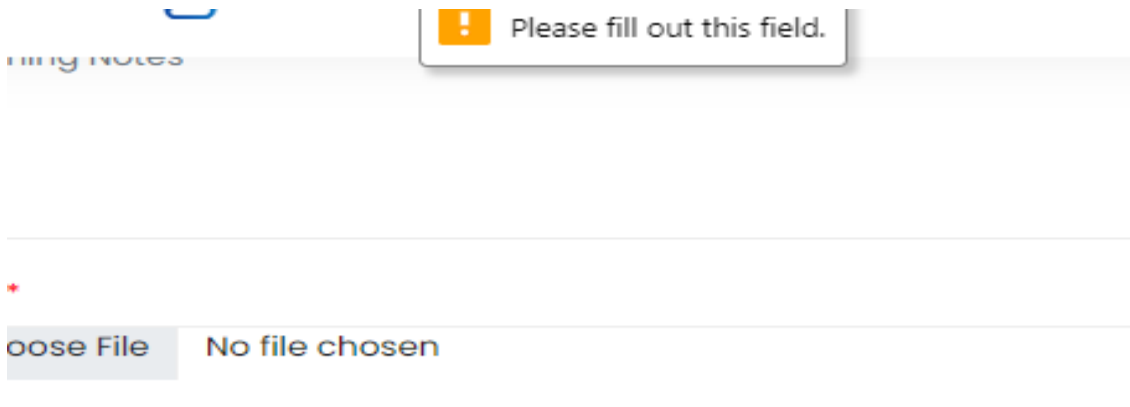


Figure 55 Model test case result-1

11.5 Integration testing

TEST CASE UNIT TEST
NAME

TEST CLASS	Patients		
TEST DESCRIPTION	Login control allows you to login at any time, and natural results verified middleware tests and dashboards can make any instructions.		
DATA SOURCE	Test setup	expected outcome	Real outcome
USER ENTRY	Click with correct user and password	needed authentication	It displays an incorrect password or email.

Table 29 Integration testing

11.6 Security testing

TEST CLASS **UNIT TEST**
NAME

TEST CLASS	Admin
TEST DESCRIPTION	Login Manager
DATA SOURCE	Test setup expected outcome real outcome
USER ENTITY	Invalid email and Login should be stopped Expected results were immediately after seeing obtained invalid message password

Table 30: User security testing

No	Action	Id	Hospital Id	User Id	Name	Email	Phone Number	Fee	Payment Method	Transaction No	Duration	Status	End Date
1	<input type="checkbox"/>	4	Seba hospital limited	swadheen roy	swadheen	swadheen@gmail.com	+8801756175342	2500	Nagad	hf-klfjg-kgj	1	Active	2023-11-12
2	<input type="checkbox"/>	6	Seba hospital limited	Tanvir islam	Tanvir islam	Tanvir@gmail.com	0173345671	2500	Bkash	qwe-2er-tyu	1	Active	2023-11-19
3	<input type="checkbox"/>	7	Save health hospital	Tanvir islam	kgkjk	Tanvir@gmail.com	0173345645	2500	Bkash	erfewafwe	1	Active	2023-11-19
4	<input type="checkbox"/>	8	United General hospital	Tanvir islam	Tanvir islam	Tanvir@gmail.com	0173345600	2000	Bkash	wep-wwr-1tr	1	Active	2023-11-19

Figure 56 User security testing

11.7 Accessibility testing

TEST CASE NAME UNIT TEST

TEST CLASS	patient		
TEST DISCRPTION	patient management		
DATA SOURCE	Test setup	expected outcome	real outcome
USER ENTRY	Patient use the system	The system works without any errors.	There is no problem behind the story.

Table 31: patient management accessibility test-1

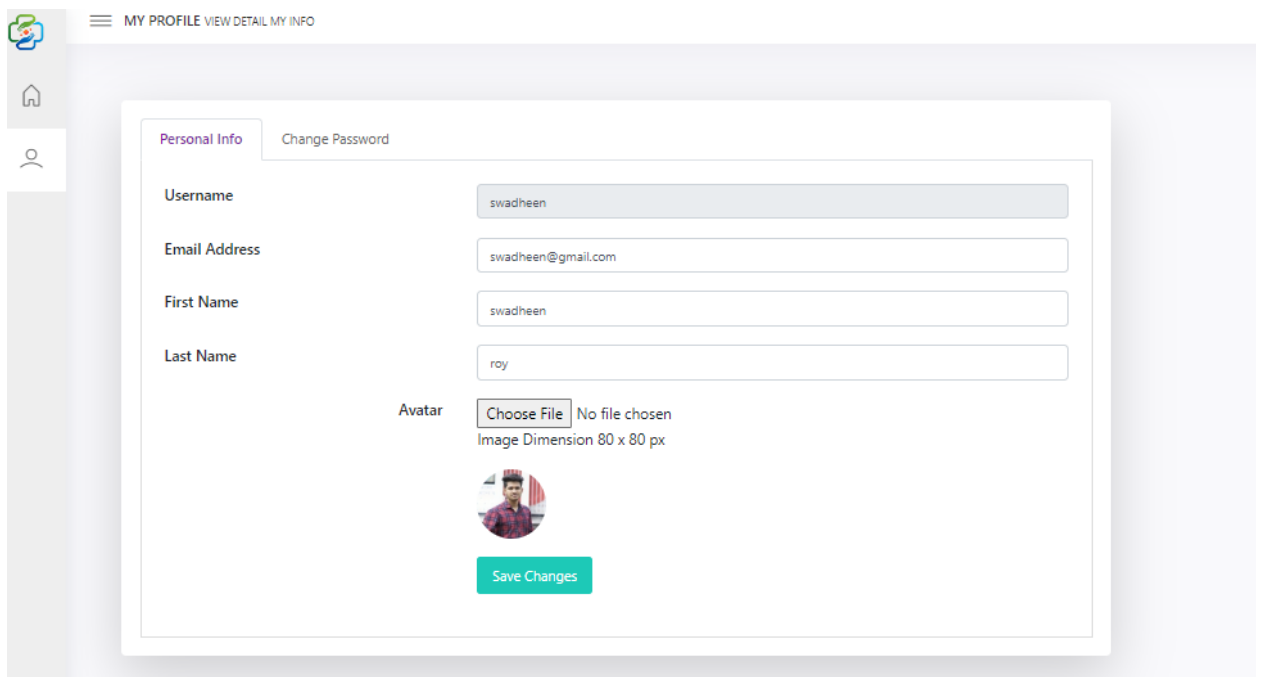


Figure 57 patient management accessibility test result-2

Accessibility testing case-2

TEST CASE NAME UNIT TEST

TOTAL CLASS	Admin management		
TEST DESCRIPTION	Friendliness testing		
DATA SOURCE	Test setup	expected outcome	real outcome
USER ENTRY	Admin will control all access to the system	The system will be easy to use for everyone	The outcome is anticipated.

Table 32: Admin manage accessibility test-2

USERS AND ACTIVITIES									
No	Action	Avatar	Group	Username	First Name	Last Name	Email	Active	
1	<input type="checkbox"/>	...	Hospital	Seba hospital	seba	limited	infoseba1@gmail.com	Active	
2	<input type="checkbox"/>	...	User	swadheen	swadheen	roy	swadheen@gmail.com	Active	
3	<input type="checkbox"/>	...	Hospital	Hospital	United General	hospital	infounitedgeneral@gmail.com	Active	
4	<input type="checkbox"/>	...	User	Kona	Kona	rani	konarani@gmail.com	Active	
5	<input type="checkbox"/>	...	User	Tanvir	Tanvir	islam	Tanvir@gmail.com	Active	
6	<input type="checkbox"/>	...	Hospital	Save health hospital	Save health hospital	Hospital	infosavehealth@gmail.com	Active	
7	<input type="checkbox"/>	...	User	Sumon	Sumon	Bala	Partha510000@gmail.com	Not Active	
8	<input type="checkbox"/>	...	User	manus	manus	ne	Partha2510000@gmail.com	Active	

Figure 58 Admin manage accessibility test-2

Chapter 12 – Implementation

12.1 Training

When a project implementation is finished, the next task is to introduce that continuing structure to the user. When a project is completed and after completion, the development team has to guarantee the project that the work is complete and the framework is ready for use by those for whom the project will be built. So I'm going to analyze the training for my Smart Medicare project through the chat pictured below.

Type user	Time period	Training scope	comment
User	will be registered as a user	30 minutes	Project users understand the procedures correctly. And they can understand all the projected topics and can pass the procedures very easily
Admin	Admin can set the database for the project if he wants and if any user is external he can add it	60 minutes	Admin can easily use all systems and access all systems very easily.

Table 33: User training

12.2 Implementation Scheme

Big Bang

The Big Bang scheme is the first to complete tests faster and more accurately than any other project skin and can use the new system once the tests are completed. And this scheme makes it possible to stop the existing process which was already in place and enable the new system immediately. If an old system changes then there is a high possibility of losing all data and the new system may crash. The Big Bang scheme is also the first to be able to use the new system when the tests are over. Additionally, this plan enables the quick disabling of the old system and the rapid activation of the new one.

12.3 Scaling

My plan is to implement the project properly and think about the user and after completing all the tests I will use smart Medicare for my personal business. The main objective of the project is that the common people can free themselves from all those previous troubles and get a good quality service at home.

12.4 Load Balancing

After the project implementation the load balance of the project means how many users can use it at a single time and not leak in any way which is an important part which makes the system run faster by breaking the load of the server through the load balancing system.

As Smart Medicare is an online service based(web -based) organization where every day different types of users will use the project to get different types of information and by logging in they will join the project and take different types of services resulting in a lot of work together and there is a possibility of server linking. There are total three types of users who will access the system at all times so a perfect plan must be made to manage the system. And all types of load balancing should be taken care of so the load balance technique is an effective technique through which load balancing can be done perfectly on the server side.

Chapter 13 – Critical Appraisal & evaluation

13.1 Objective could be met

Below are the main functions of the system:

- The project has to be registered and after completing the registration the user can login to the system.
- A list of all users of the project will be saved.
- The project has admin and user management system.
- Online payment is available.
- User's can take all types of medical equipment from the same project.
- A feedback on the project is in process.

Objective

1. How good is the project?
2. Any achievements not achieved yet?
3. What are some things that would make the symptoms better?
4. How good are the features?
5. Are there any features that haven't been completed yet?
6. Which features could cause problems for the project if not completed?
7. What would be the method of accomplishing the features?

Project rates and other matters:

The project is definitely much better than before. Because this project has been updated a lot since the topics were earlier. And all the achievements of this project have been achieved, here all symptoms have been tested and tried to be better like here nurse can create his own profile and a user can create his own profile and appoint the nurse which

currently in any service in Bangladesh nurse handling servicing No and since admin has all kinds of access he can check every module properly Features are quite good quality which is updated from previous old system features. Now only mobile version has to be released currently not done though it is web based software so can use it through any browser like chrome browser of mobile phone it will not cause any kind of problem to complete things if any person wants to use mobile application then later mobile The application needs to be updated.

13.2 Objectives totally not met / touched

I want user in subscription module in my project to select a hospital and buy subscription but can't buy multiple subscriptions at once I am facing various problems and can't figure out the solution.

Why it could not be touched

If a user buys a subscription and visits different hospitals repeatedly, the hospitals with which the user has an agreement are deviated, thereby allowing the user to purchase subscriptions for different hospitals.

What could have been done

I have tried many solutions for this but haven't found a solution that works properly so I will continue to work on this in the future and make improvements to the subscription module. Although one could get rid of this kind of trouble by applying different conditions here but I don't think that would be an efficient way. That too is a manual method but I want to make all systems in my project smart so next time I will try to update this module properly.

Chapter 14 – Lessons Learned

14.1 Pre-project-Review-closing

Smart Medical is a nurse and patient handling system where first I decided to create a web based solution of what a patient needs and what a nurse needs. As a result, the patient will benefit. I first structured the project according to the proposal model and worked on various aspects of development. Using the project will save users time and money. The main aim of Smart Medical is to create solutions where a patient can avoid the hassle of going to the hospital and get the right quality care at home.

14.2 What I have learned

I developed a complete software for the first time in my life which was a new experience for me. In-depth understanding of how to initiate a project, and how to propose projects, and how to collect requirements. I have used various techniques for requirement collection. For example, for my project, I understood user needs and gained new experience through interviews, observations, techniques. Learned how to design database and how to manage database and how to deal with database. Since I started coding naturally and had to learn advanced level programming to complete projects and learned how to apply different types of conditions and how to access data and understand. I have never worked with frameworks but after working with frameworks in this project I understand the difference between row coding and frameworks.

After that I did various tests to validate the project which taught me a lot of new things. For my project I do various types of important testing including black box white box testing functional testing non-functional testing and understand how to determine the correct criteria of a software and how to determine the correct output of a project. I have learned many new things by doing the project and I hope this learning will enlighten my career.

14.3 The problem I face

To complete the project I ran into various difficulties and faced new challenges. At the beginning of the project, I ran into various problems with the project structure. It was difficult to plan how the structure would fit the project goals. After that, it took me a long time to understand the needs of the users and I had to face various challenges to figure out the requirements that would benefit them. To create different types of modules, we got into trouble with the conditions and spent a lot of time with them. Another important thing was to manage the project within a certain short period of time. And for that I made a time box but it was only three months but when I started doing the works the time had to be changed and it took two more months to complete the project which was a big challenge for me. One module of the project especially the subscription module has been the most troublesome and faced various problems. Various challenges were faced with the project database.

14.4 What solution Occurred

As I faced various problems in doing the project but I always tried to create solutions to those problems. However, it was very difficult to complete the entire project, but through time boxing, I divided the tasks into small parts and completed them within a certain time frame. And I tried to solve the errors I got while coding and all the problems with the condition through google and my friends and passed. Finally I followed the time boxing strictly within the deadline due to which I was able to successfully complete the project on time.

Chapter 15 – Conclusion

15.1 Summary of the project :

Summary of this project is to create nurse patient handling management system that will help patients to book nurse appointment at home and fulfil their prospects. By registering a user in the scheme and logging in, one can see all the nurses registered in Smart Medicare and accordingly a patient can book an appointment. All types of data projects are saved ensuring project security. As a result, three types of users can see them from their modules, but only the admin can see and close all access to ensure high security of the project, so that outsiders do not access the system. The system also includes hospital subscription system module which will help in financial gain of the patient. HTML, CSS, jQuery, JavaScript, PHP and Laravel frameworks are used to develop the Nurse Patient Handling Management System and various charts, tables, diagrams are shown for documentation.

15.2 Goal of the project

The main objective of the Smart Medicare project is to create a nurse and patient management system where a patient can book an appointment from the comfort of his/her home and avoid the hassles of the hospital.

Now I am listing the main objectives of the project:

- To Create Web Based nurse patient handling management system.
- Simplifying the Process of Finding a Nurse at Home.
- Increasing Patient Satisfaction and proper Care.
- The patient does not have to suffer in the hospital.
- Less Chance of Catching a New Illness.
- Patients can pay online without leaving the house.
- Great way to save money for patients.

15.3 Success of the project :

The highest priority from the start of a project is the users, with whom the project is designed. So the project will be successful when the users enjoy using the technology. By using the smart Medicare project they will be able to take all the benefit satisfaction so I can say my project is a successful project.

15.4 What I have done in the documentation

I have discussed various aspects of this project in my documentation and discussed in detail how I did the whole thing.

This documentation gives a complete explanation of the project and why I have done the project, what technologies are being used. The documentation has various diagrams of my project like activity diagram, use case diagram, ERD diagram and various diagrams to give a clear idea about the structure of the project. Ideas can be found. And the things that I followed while doing the project like time boxing still included various charts and tables, various graphs and important screenshots of the project. One can easily get an idea of my project by looking at this documentation. I have done various tests and added them to the documentation to set the project criteria. Included is informational documentation of all project-related activities.

15.5 Value of the project

Use of technology is highest in today's world now people like to do all the work very easily and I have used maximum technology in my project which will create a good value in the market place. Those who are busy with work cannot give time outside for their business and if family members are sick, they have to face many problems, especially they have to face trouble in the hospital, but through this project, the nurse can make an appointment online very easily, as a result, the patient can be treated at home. can take which the projector ensures a large value.

Previously people had to do manual work, especially getting a nurse had to face a lot of trouble. Where do you get it? How to contact the nurse? But in my project I have used my maximum technology so that a user can make a present very easily secure way nurse appointment which will add value to the project.

15.6 My Experience

Honestly my initial experience of starting the project was similar when I didn't know how to do a real life project. Tests are done on how to do things the right way, but after completing the full tux I had a really good experience.

Starting from scratch and reaching a specific goal was very difficult for me. I faced various problems while doing the project and overcame them with determination which was a great learning for me. I understood the complete structure of this project now I know what needs to be done to start a project and how to complete small tasks within a certain time frame. From the project I learned time management which is a great experience in my career after the project.

Appendix

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