

HOSPITAL MANAGEMENT SYSTEM

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A project/report submitted
in partial fulfilment of the requirements
for the degree of
Bachelor of Science in Computer Science and Engineering

UNIVERSITY OF LIBERAL ARTS BANGLADESH

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DECLARATION

I announce that this report/ project permitted “is the consequence of my own study excluding as mentioned HOSPITAL MANAGEMENT SYSTEM the orientations. The report /project have not been putative for any degree and is not alongside succumbed in application of any other degree.

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Date :15.06.2021

CERTIFICATE OF APPROVAL

The project permitted HOSPITAL MANAGEMENT SYSTEM is a succumbed to the Department of Computer Science and Engineering at University of Liberal Arts Bangladesh (ULAB) in partial completion of the obligations for the degree of Bachelor of Science.

Dated: 15.06.2021

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16/6/2021

Signature & Date

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Head of Department

Computer Science and Engineering

University of Liberal Arts Bangladesh

Signature & Date

DEDICATION

I am aware of and include the university's rule on plagiarism and I confirm that "HOSPITAL MANAGEMENT SYSTEM" is my own work, where indicated by referencing. To my supervisor's patience, support, love the last moment of this project. The data in this paper was experimentation without me after emerging the system.

ACKNOWLEDGEMENT

I wish to express my sincere obligation to all those who helped me, in one way or another, to complete this project. First and primary, I thank Almighty who provided me with strength, direction and during the project.

Special thanks to my project supervisor Dr. Abul Kalam Al Azad all his patience, guidance and support during the last moment of this project. Through his expert guidance, I was able to overcome all the difficulties that I met in these long-term timelines of my project. In fact, he always encourages me and I consulted with his any type of problems relating to my project.

ABSTRACT

I have developed a web site which is very important for every human if I say right now it is very risky too. This system diminishes the issues that happen when utilizing the manual system appointment. The significant thing is it will get simpler for the patient's set of experiences and information records. This software additionally stores every tolerant detail, patient's profiles, and specialist profiles; and so on this system empowers specialists and clinic partners to oversee patient records and appointments. The system has an executive area, where Specific users or administrators can deal with the dashboard and the entire system. They can add/Remove new specialist update specialist profile and add specialist accessible schedule opening. They can likewise add a doctor leave entry, Highest the number of patient appointments can be taken can be determined. I have also created a platform on my website where a patient can see a doctor and buy medicine from my website according to the prescription given by the doctor. Framework and bootstrap which is acquired naturally html, CSS, to show substance design and furthermore backend that using MS-SQL and ASP Dot Net MVC).

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TABLE OF ABBREVIATIONS

CSE	Computer Science and Engineering
ULAB	University of Liberal Arts Bangladesh
HTML	Hyper Text Markup Language
CSS	Cascading Style sheet
MVC	Model View Controller

CHAPTER 1

INTRODUCTION

1.1 Overview

The main objective is to develop an Asp Dot Net Mvc web application named Hospital Management System " that covers the aspects of taking appointments of doctors. It could reduce costs, & time consumption and ensure delivery of better quality services.

This system diminishes the issues that happen when utilizing the manual system appointment. The significant thing is it will get simpler for the patient's set of experiences and information records. This software additionally stores every tolerant detail, patient's profiles, and specialist profiles; and so on this system empowers specialists and clinic partners to oversee patient records and appointments. The system has an executive area, where Specific users or administrators can deal with the dashboard and the entire system. They can add/Remove new specialist update specialist profile and add specialist accessible schedule opening. They can likewise add a doctor leave entry, Highest the number of patient appointments can be taken can be determined.

Other than that, the system is easy to use and it can assist the hospital with overseeing appointments. The system assists with trying not to make copy appointments. User can see available doctors and their timings and make appointments as indicated by it. Users can see impending appointments and past appointments. The system includes an extremely natural and responsive plan that fits gadgets of all screen sizes (cell phones, Pc, Tablets, and so forth) The application consequently adjusts its design to coordinate with the user's screen size.

1.2 System Study

It is the principal phase of the system development life cycle. This gives an unmistakable image of what the genuine existing system is. The system is done in two-stage. In the main stage, the starter overview of this task is done which assists profound comprehension with distinguishing the extent of the undertaking. The subsequent stage needs to concentrate more detail which recognizes the

user's necessity and limitation of the current system are considered. After finishing the system study, a proposition was made by a user.

1.3 Existing System

As of now, individuals are making appointments physically. This is an extremely tedious cycle, a patient needs to truly go to the center for an appointment.

Limitations of Existing System

1. Time Consuming
2. Lack of efficiency
3. Need to be physically present at the clinic
4. Patient doesn't know the doctor available time
5. Can't make an appointment in advance

1.4 Fact-Finding

The major task of the system is fact data finding which is done by a various method that is described below.

- **Review of a written document**

All documentation information transporters structures, record reports, etc. Was assessed and assessed. Survey every one of the archives that contain areas, classifications, and others are by the assistance of a map. The technique for recording everything about noted.

- **Interviews and questionnaires**

people normally give the best wellspring of data and consequently close-to-home conversation with the patient. Give surveys to chosen people to gather information.

2.3 Proposed system

The proposed system will diminish the disadvantages of an existing system. The current system isn't easy to use. Proposed system is exceptionally responsive and easy to use. There enjoy numerous benefits to the proposed system.

Advantage of proposed System

The new system gets for managing information under the e-Hospital Management System.

- Manual work that time consuming can be reduced
- user can take Appointment online also physically present in a hospital
- Admin can add/remove new doctor, patient department, update patient and doctor profile.

- Increase Working speed.
- Patient can take advance appointment.
- Improved Security.

1.5 Methodology

The growth project that is used in this report is the object-oriented system which is a model-driven method that combines data and process. A system constraint design was set out in order to quantify the study and to evaluate and provide particulars of the method.

1.6 Primary Sources

My primary sources were from YouTube, Google and I have seen additional coding blogs.

CHAPTER 2

2. System Analysis

System analysis is the itemized investigation of different activities performed by the application, what's more, connections inside and outside of the system. It is an essential piece of the advancement of an undertaking. When of system analysis, diverse information is gathered from various documents, choice focuses, and exchanges took care of by the presence system. System analysis should do a standard methodology by the utilization of PCs for critical thinking. Present time systems are so huge and complex that terms of models, investigators, software engineers, SQA analyzers should cooperate to make a million lines of custom-return code that drive out big business. Expecting another system is to be created, the following stage is System analyst.

2.1 System Requirements

Software and Hardware Requirement

This undertaking was created dependent on the asp dot net MVC project. The software prerequisite specification (SRS) and hardware detail structure the premise of software development. The principle motivation behind software prerequisites is the unmistakable definition and determination of usefulness and the product item. It permits the designer to be completed, execution level to be acquired, and comparing interface to be set up.

Hardware Requirement

Processor: Minimum Intel Pentium or above version.

Monitor size: 14 inch

Ram: Minimum 4GB

Hard Disk: 256GB

Software Requirements

Technology: Web Application

Tools: Visual Studio, MS SQL Server

Frontend: HTML, JQuery, Bootstrap & CSS

Back end: MSSQL

Programming Language: C#, Asp Dot Net MVC

Browser: Firefox, Google Chrome, Or Web kit based browser

System Design

Design is the initial phase in the development stage for any designing system. It very well might be characterized as" The way toward applying different procedures standards for characterizing a processor or a system deficient to allow its actual acknowledgment.

System Design in the making of the detail for another system. It manages the production of info, which gaining required information, the formation of required data set, the info techniques, and yield to meet

2.2 Initial Design

All the main modules of this system are given below

Admin Module

- Add New User
- Remove Existing User
- Doctor Registration
- Remove Existing Doctor
- Add Doctor schedule
- Update Or Delete Time Schedule
- Add Doctor Department And Specialty
- Remove Department And Specialty
- Take Appointment Physically visited the patient
- Add doctor leave entry

User Module

- User Registration
- Doctor List
- Can see the available doctor for an appointment
- Can see the upcoming appointment
- Take advance appointment
- Make online appointment

Doctor Module

- Update Doctor Profile
- Can see the Appointment List
- Update leaves an entry.

Rectangle

Represent an outside element that is the source or objective of information inside the system.

Every outside element is addressed by a significant and novel name.

Circles

Represent processes that show transformation or manipulation of data within the system.



They are utilized to address data flows that show the development of data from its source to objective inside the system.

CHAPTER 3

PROJECT DESIGN AND DEVELOPMENT

3.1 Flow chart

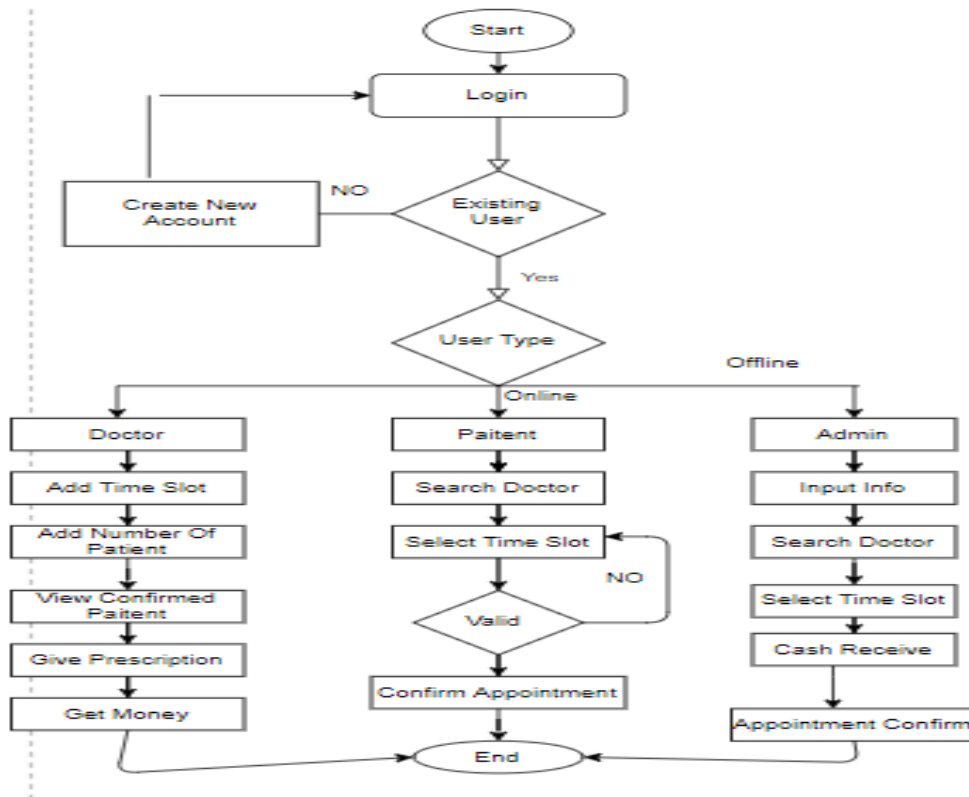


Fig 2: Flow Chart of Hospital Management

3.2 Use Case

Admin side: Here is a use case diagram it's working Admin can registration, login and admin can view patient list, view doctor list, view department list.

Patient side: patient can registration, login and patient can view patient list, view doctor list, view department list.

Doctor side: Doctor Can registration, login and doctor can view patient list, view doctor list, view department list,

Use case Diagram

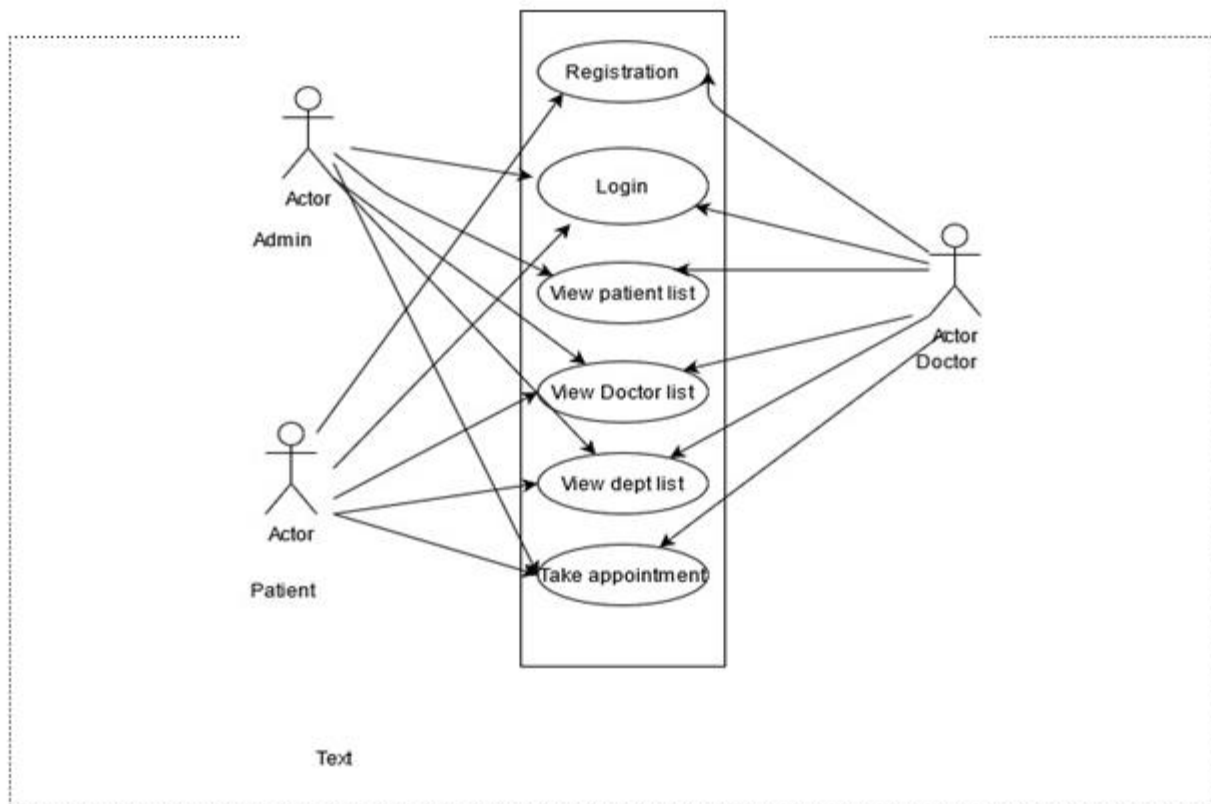


Figure 3.1: Use Case Diagram

3.3 Activity Diagram

Here is a activity diagram it's working already registered yes then can go login no registered back to the registration. it goes to the view doctor list. patient can't see that doctor available then back to doctor schedule check.

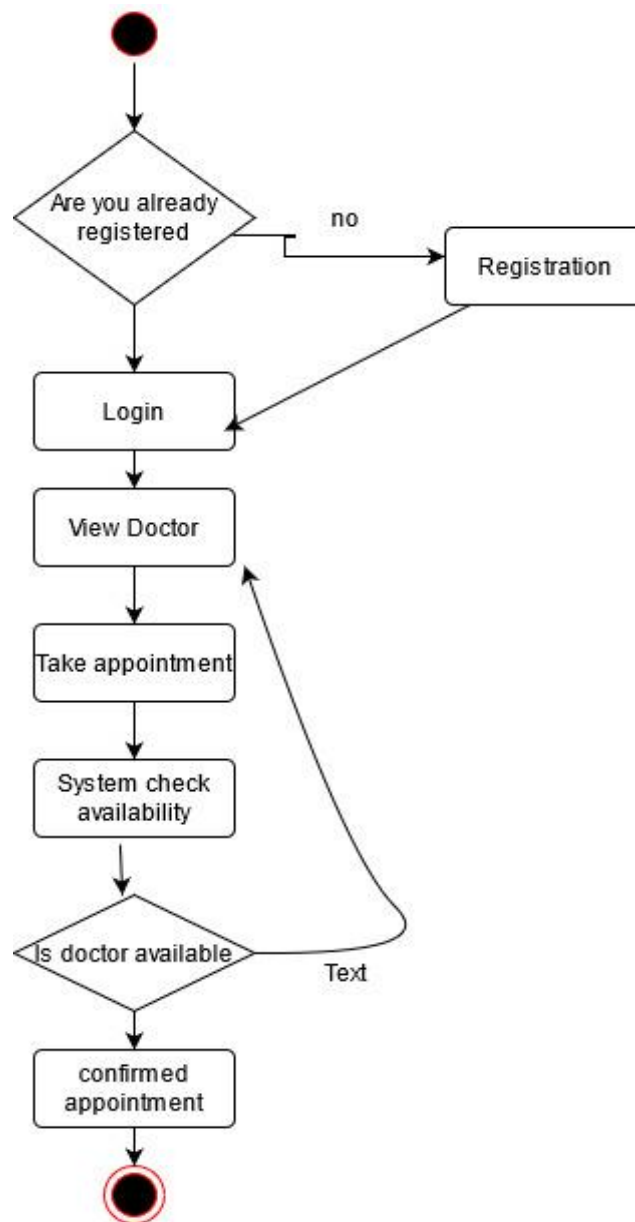


Figure 3.2: Activity Diagram

3.4 DFD

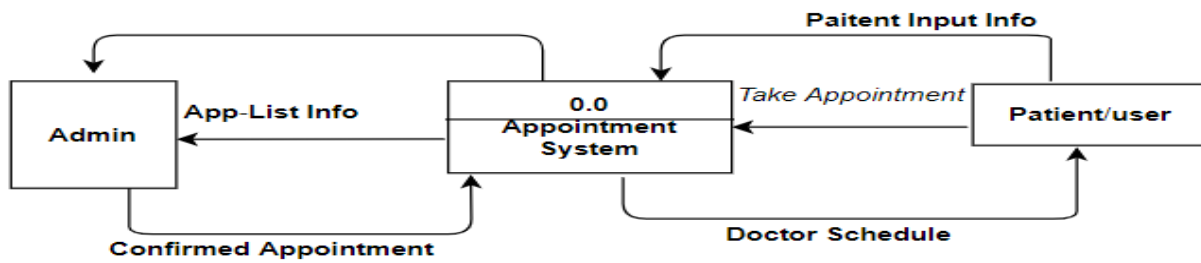


Fig 3 : Level 0 Of Hospital Management

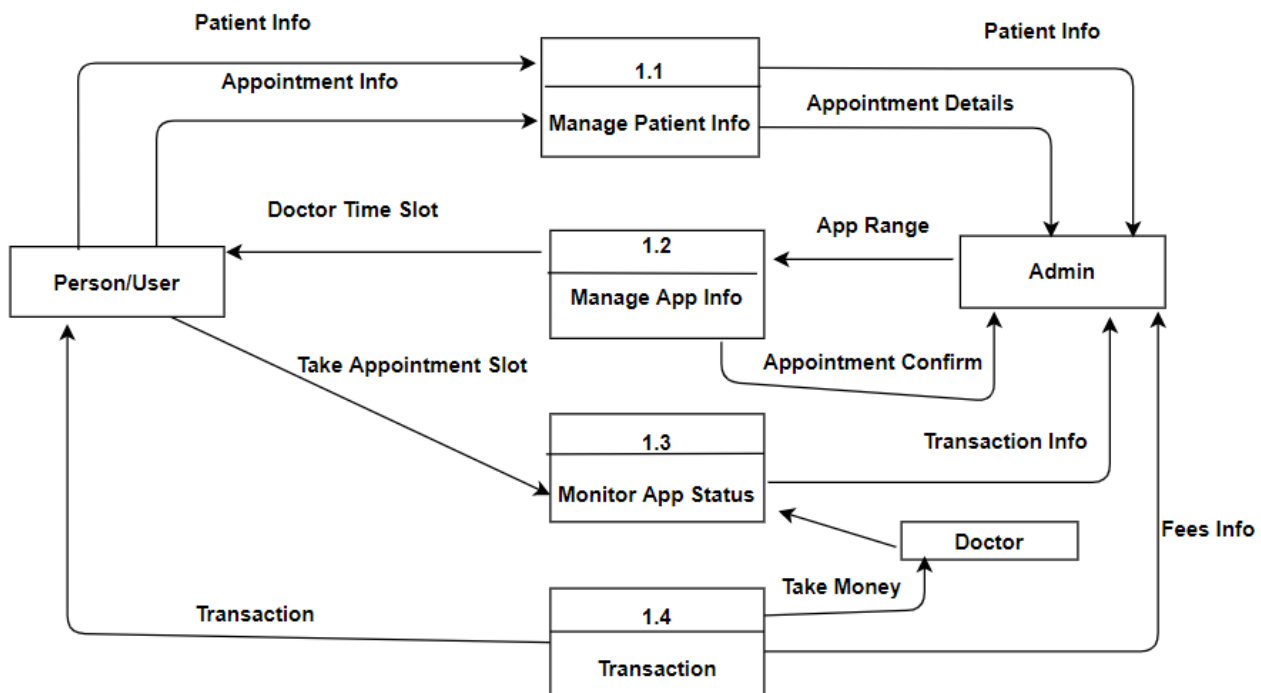


Fig 4 : Level 1.0 Of Hospital Management

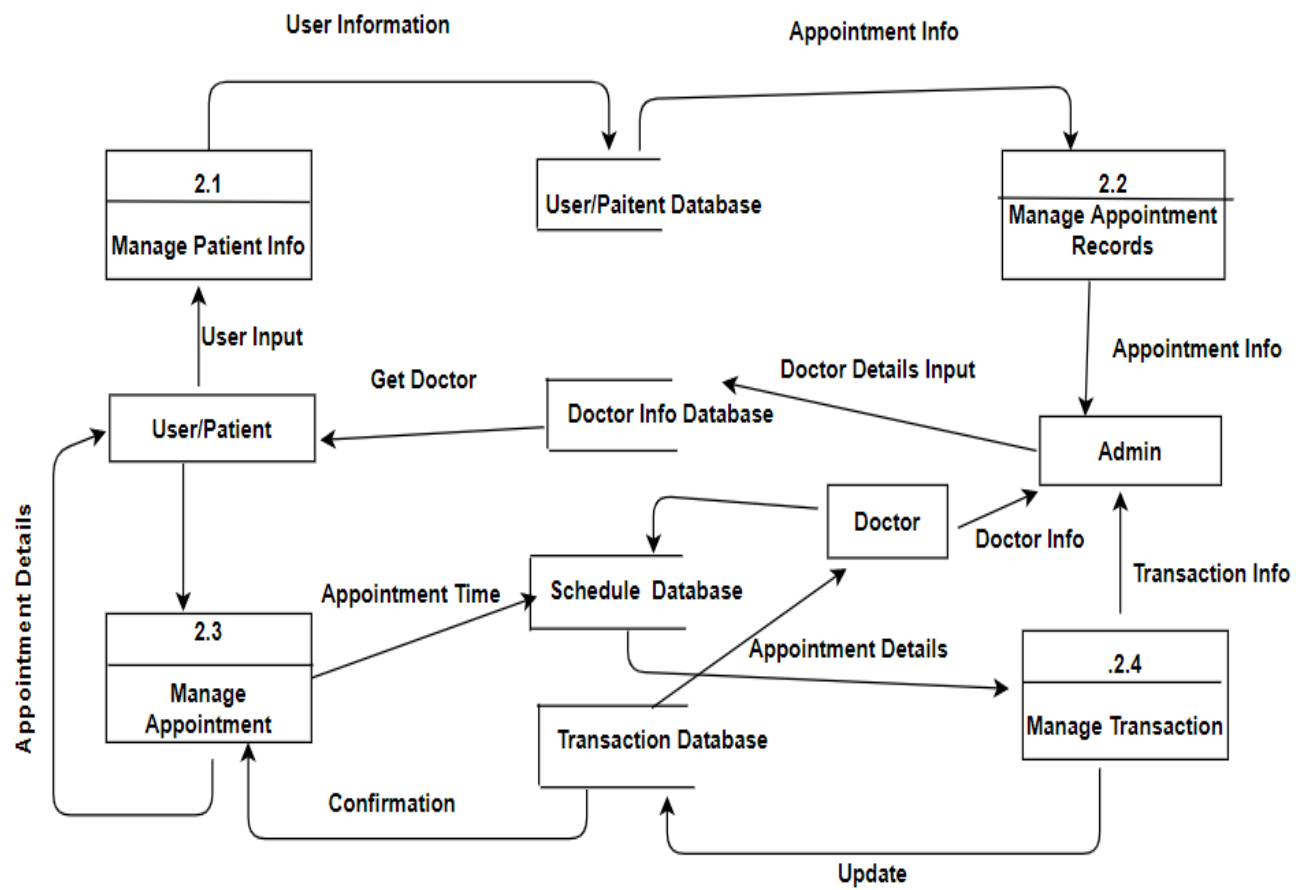


Fig 5 : Level 2.0 Of Hospital Management

PROJECT DESCRIPTION

CHAPTER 4

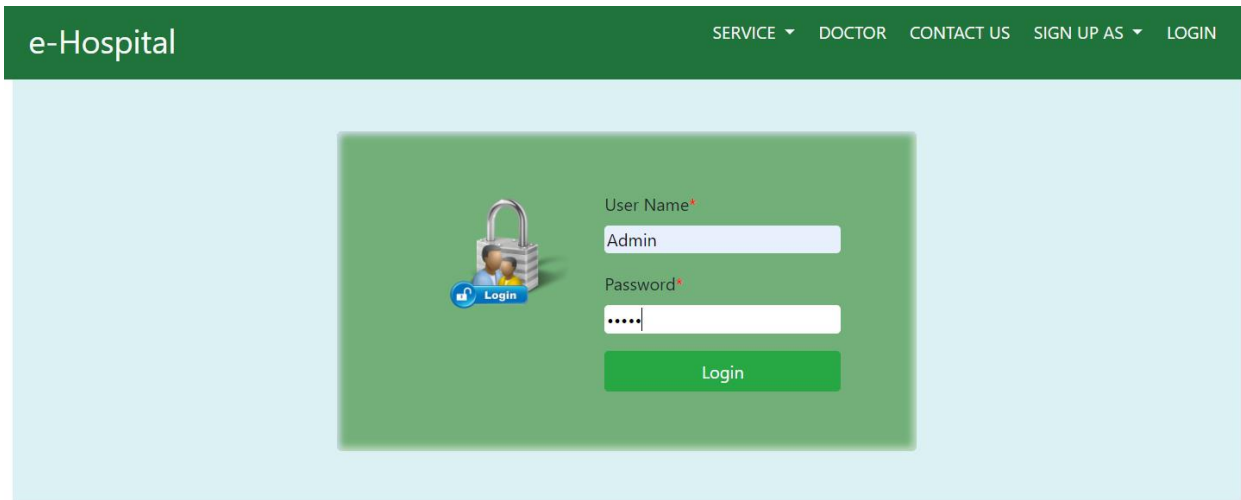


Fig 7: Login Page Of Hospital Management

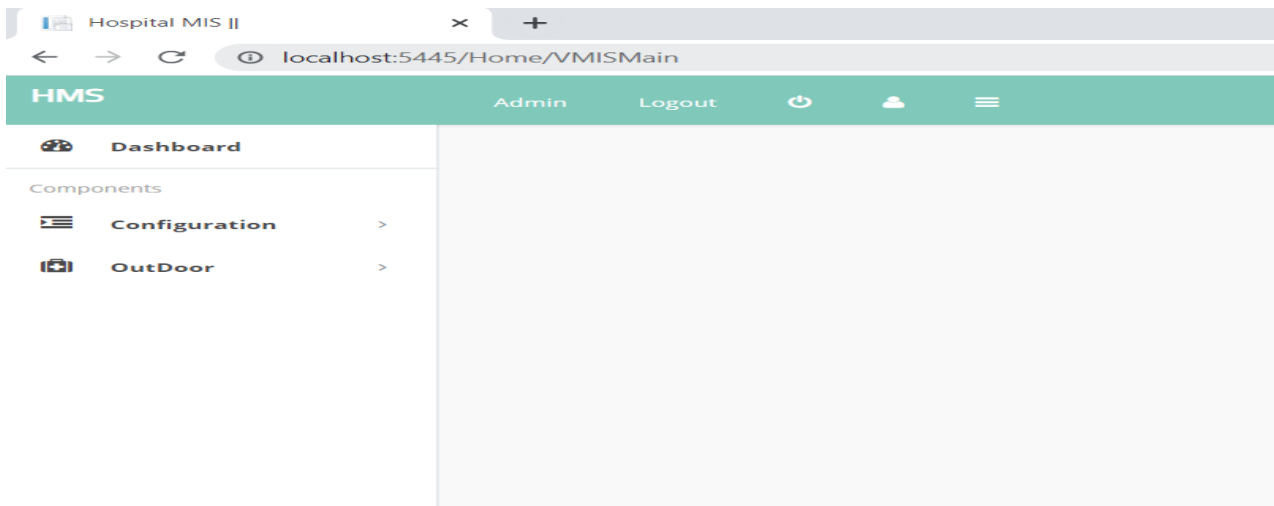


Fig 8 : Admin Page Of Hospital Management

Add Doctor

Doctor Code	Doctor Code	Doctor Name	Doctor Name
Mobile No	Mobile No	Present Address	Present Address
Email	Email	Permanent Addr.	Permanent Address
Commission	Yes	Degree	Degree

Save

Dr. Mohammad Ghulam Rasul	Deen Mohd. Eye Hospital	0	1	Edit Delete
---------------------------	-------------------------	---	---	---

Fig 9 : Doctor Add Page Of Hospital Management

Doctor Code	0001	Doctor Name	Prof: Deen Mohd. Noorul Huq
Mobile No	0	Present Address	Deen Mohd. Eye Hospital
Email	N/A	Permanent Addr.	Do
Commission	Yes	Degree	Eye Specialist & Phaco Surgeon

Update

Dr. Mohammad Ghulam Rasul	Deen Mohd. Eye Hospital	0	1	Edit Delete
Dr. Zakia Sultana Shahid	Deen Mohd. Eye Hospital	0	1	Edit Delete

Fig 10: Doctor Update /Delete Page Of Hospital Management

HMS						
Admin Logout						
Dashboard	Doctor Information					
Components	Show 10 entries Search: Add Doctor					
Configuration						
Doctor						
DoctorSchedule						
Doctor Leave Entry						
Investigation Chart						
OutDoor						
CODE	NAME	DEGREE	ADDRESS	MOBILE	COMMISSION	ACTION
0001	Prof: Deen Mohd. Noorul Huq	Eye Specialist & Phaco Surgeon	Deen Mohd. Eye Hospital	0	1	Edit Delete
0002	Dr. Rezaul Murshed	degree	Deen Mohd. Eye Hospital	01722182387	1	Edit Delete
0003	Prof: Md. Sharfuddin Ahmed		Deen Mohd. Eye Hospital	0	1	Edit Delete
0004	Prof: Sheikh Mohammed Hossain	MBBS, DO, MS, Fellow Glaucoma (USA) Prof: & Head, Dept. of Glaucoma, NIO&H, Dhaka	Deen Mohd. Eye Hospital	0	1	Edit Delete
0005	Prof: AHM Enayet Hussain	FRCS(Glass.UK), FCPS(BD), Paediatric ophthalmologist	Deen Mohd. Eye Hospital	0	1	Edit Delete
0006	Dr. Mohammad Ghulam Rasul		Deen Mohd. Eye Hospital	0	1	Edit Delete
0007	Dr. Zakia Sultana Shahid		Deen Mohd. Eye Hospital	0	1	Edit Delete
0008	Dr. Khair Ahmed Choudhury	MS;FRCS(Glass.UK) Paediatric Ophthalmologist, Squint & Phaco Surgery Associate Prof: NIO&H, Dhaka.	Deen Mohd. Eye Hospital	0	1	Edit Delete
0009	Dr. Pankaj Kumar Roy	MBBS, MS(Oph), FCPS(Oph), DCEH(london), ICO(England), FAIIMS(New Delhi) Associate Prof: Vitreo Retina NIO&H	Deen Mohd. Eye Hospital	0	1	Edit Delete
0010	Prof: Dipak Kumar Nag		Deen Mohd. Eye Hospital	0	1	Edit Delete
Showing 1 to 10 of 23 entries						
1 2 3						

Fig 11 : Doctor List Page Of Hospital Management

Admin
Logout

Dr. Schedule Entry

Dr. Name

0001-Prof: Deen Mohd. Noorul Huq

Dr. Degree

Eye Specialist & Phaco Surgeon

DAYS NAME	SHIFT NAME	STARTTIME	FINISHTIME	N.O.P	APP. TYPE	EX. SLOT	ACTION
Saturday dddd	Morning	12:00am	12:15am		Consultation		Add Save

Fig 12 : Doctor Time Schedule Page Of Hospital Management

Admin
Logout

Dr Leave Entry

Dr. Name

Select Doctor Name....

From Date

From Date

To Date

To Date

Save

Fig 13 : Doctor Leave Page Of Hospital Management

Appointment Entry

Show 1

NAME +
No data

Showing

Appointment

Visit Date 2021-06-06 Patient Type New

Patient Name Patient Name

Address address Contact no. MobileNo

Appointment By Phone App Status Active

Consultant Type Primary

Ref.Doctor Name 0003-Prof: Md. Sharfuddin Ahmed

Doctor Name 0002-Dr. Rezaul Murshed

App Date 2021-06-13 App Time 12:15 PM-12:20 PM

Serial No 1

Remarks Remarks

Total Slot(s) = 20, Appointed = 0, Available =20

Save

Take Appointment

BILLING + STATUS + ACTION +

< >

Fig 14 : Appointment Page Of Hospital Management

Admin Logout

Appointment Entry

Show 10 entries

App.Date 2021-06-06 Search: Take Appointment

NAME +	ID +	MOBILE +	ADDRESS +	APP.NO +	APP.TYPE +	DR.NAME +	TIME SLOT +	DR.BILL +	BILLING +	STATUS +	ACTION +
Imran	N/A	3333333333	Dhaka	AP2106000004	New	Dr. Rezaul Murshed	12:15 PM-12:20 PM	UnPaid	UnPaid	Active	

Showing 1 to 1 of 1 entries

< 1 >

Fig 15 : Appointment List Page Of Hospital Management

RAKIB
Logout

Patients Registration

Show 1

REG.NO
0000000
0000000

Showing

Add New Patients

Registration No
00000003

Patient Name
Imran

Father Name
Father Name

Birth Date
Birth Date

Address
Dhaka

Religion
Select Religion....

NID No
NID No

Email
Email

Corporate Id
Select Corporate....

Mobile No
3333333333

Gender
Select Gender....

Mother Name
Mother Name

Age
Year
Month
Day

Occupation
Occupation

Nationality
Bangladeshi

Marital Status
Yes

Blood Group
Select Blood Group....

Save

MOBILENO :
ACTION :
722182387
920192761

Fig 16 : Patient Registration Page Of Hospital Management

Chapter 5

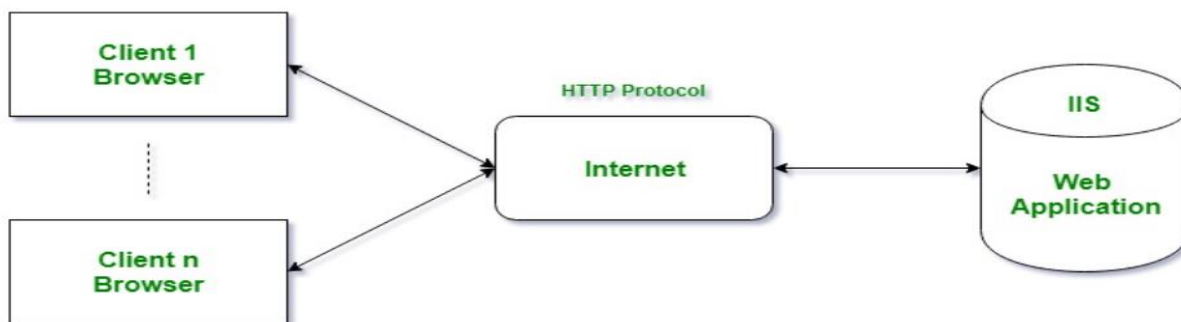
System Development

5.1 Feature of Front End and Back End

ASP Dot Net MVC [1]

Introduction to Web App?

A web app is presented interestingly on the web specialist which is gotten to by the user using a web program like Google Chrome, Firefox, etc. There is moreover some other Software development like Java, C#, JavaScript, etc. which can be used to cultivate web app. Web applications give cross-stage incorporate. The customer needs a web program to get to a web app. The web applications which are made using the Dot Net framework or its subsets expected to execute under the IIS on the specialist side. Made by IIS is to give the web application's made HTML code result to the client program what begins the sales as solicitation as demonstrated in the below graph



Why ASP Dot Net?

There have a ton of valid reason **ASP Dot Net** Mainstream Between engineers. A portion of the reasons are recorded underneath:

Broadening **Dot Net** Framework: **ASP Dot Net** is a subset of the. Dot **Net** Framework as it expands the .NET Framework for certain libraries and instruments to foster web applications.

- Performance: Dot Net is faster than the other frameworks existing in the market.
- Backend Code: With the help of Dot Net a developer can write the backend code for access data from database and any logic in C#.

- Dynamic Web Page with help of HTML, Razor, C# JavaScript, Angular OR react Framework Can be developed dynamic Single Page Application.

HTML

HTML [2] symbolizes Hyper Text Mark-up Language, which is the best usually utilized language on Web to temporary sides.

- Hypertext refers to how Web pages (HTML archives) are connected together. In this way, the assembly accessible on a side is called Hypertext.

Initially, HTML was created to characterize the design of histories like headings, sections, etc. to work with the allocation of rational data between

Researchers. Now, HTML is by and large usually used to design pages with the help of various labels available in HTML language

System Testing

Type of Testing

Software testing decides the accuracy, fulfillment, and nature of Software being created. Approval alludes to the way toward watching that the created Software meets the necessities indicated by the client. The exercises engaged with the testing stage fundamentally assess the ability of that system to meet its prerequisites. The fundamental goal of software testing is to recognize blunders in the product. Blunders happen if some piece of the created system is discovered to be wrong, deficient, or conflicting. Test methods incorporate, yet are not restricted to, the cycle of executing a program or application to discover software bugs (blunders or other surrenders). It includes the execution of a product part or system to assess at least one property of interest. As a rule, these field demonstrate the result to which the part or system under test:

- Meets the requirements that guided its design and development,
- Responds correctly to all kinds of inputs,
- Is sufficiently usable,
- Can be performed in its intended environments.

- Achieves the general result its Client desire

White box Testing

Tests are performed to guarantee that all inward tasks of the product are performed by the particulars of the customer. This is called White box testing. White-box testing is a method for testing programming that tests inside constructions or actions of a submission, quite than its worth. In white-box testing, an inside view of the structure, just as programming skills, are utilized to structure experimentations. White-box testing can be applied at the unit, combination, and framework levels of the product testing measure. Albeit customary analyzers would, in general, consider white-box testing as being done at the unit level, it is utilized for reconciliation and framework testing all the more habitually today. It can test ways inside a unit, ways between units during reconciliation, and between subsystems during a framework level test.. The subtleties entered by the head are shaved and put away in the information base, and testing is done to confirm whether the control of each structure or activity is working in a definite manner.

Black box Testing

Tests are performed to guarantee that each capacity is working appropriately. This is alluded to as Black box testing. Discovery testing is a method for programming testing that aspect at the practicality of an application without looking into its inner designs or operations. This strategy for the trial can be applied to for all aims and resolutions each degree of programming testing: unit, combination, outline, and acknowledgment.

CHAPTER 6

Conclusion

This was a fantastic project to chip away at and I have taken in a ton of things to finish this task. A ton of groundbreaking thought and a few issues that may happen to a system like this is very clear for me now. I'm not going to ensure that this program offers you exact 100% usefulness. It has awe-inspiring features

yet while working I have figured out how we can make this more beneficial for everyone. I have thoroughly enjoyed this endeavor and I need to keep on working on it to give it an unrivaled shape. I acknowledge that I can do make this particular with the end goal that people will value the last yield. Our imaginativeness makes us novel from every species on this planet. We build gadgets and machines to simplify our lives and more pleasant. This has begun at an early age and starting now and into the foreseeable future we have never stopped to amass or design new things. In light of this creativity, our planet has become very something completely surprising than our archetypes experienced. Recreated insight – man-made intellectual competence is an old thought at this point our current system has taken it to a substitute height. We have had the alternative to manufacture things that has changed the entire considering measure human turn of events. Clinical advancement has similarly improved close by various spaces of science. At the point when people used to pass on different infections anyway we have vanquished those by our movement in various regions. We are currently ready to do a medical procedure that People couldn't consider 10 years prior. Computerization in the clinical area is still very new yet the inquiry is for how long this will stay new. Explores are progressing to perform analysis and endorse medication for individuals without a doctor. There are doctors for management. We are building insightful devices to take things to tallness. This responsibility is an infinitesimal advance towards the huge potential outcomes that knowledge and PCs can make to the clinical area. We have numerous methodologies for new things. A few groups bounce near new things whereas others just sit backbone. This has been the situation for persons and it will proceed. Be that as it may, new implements are coming from time to time. Discipline will save on its jaunt thus will our human cultures. I'm extremely glad to be a piece of this work and assured that certain time or additional this will be the truth of your medical clinic skill.

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- [7] Use Case <https://www.visual-paradigm.com/guide/uml-unified-modeling-language/what-is-use-case-diagram/>
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