



INDEPENDENT UNIVERSITY, BANGLADESH

School of Engineering and Computer Science
Department of Computer Science & Engineering



Title – Internship

Course Code - CSC499

WEBSITE PORTAL OF CALL A DOCTOR BD

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Date: 27 / 01 / 2021



Declaration

1. It is stated hereby that while completing my degree at Independent University, Bangladesh, the internship report submitted is my own initial work.
2. No material previously published or written by a third party shall be included in the report, except where this is appropriately cited by full and accurate referencing.
3. The report does not include material that was accepted or submitted for any other purpose.

Student's Full Name & Signature:

A handwritten signature in black ink, appearing to read 'Fatema', is positioned above a horizontal line.

Fatema Jerin

Student ID: 1631221



Letter of Transmittal

27 January, 2021

Ajmiri Sabrina Khan

Lecturer,

Department of Computer Science and Engineering,

Independent University, Bangladesh

Subject: Letter of Transmittal for Internship Report, Autumn 2020

It's my great pleasure to place my Internship report for your kind approval. I, Fatema Jerin, from Autumn 2020, Section 12, have completed my Internship Program and its report. I completed my internship at TEN's 360, which started on 1st November of 2020.

This report contains my experience and work in the company. It is my immense pleasure to presenting you my experience in all the different technology related fields of the company, including research and development, documentation. Also get familiar with the process and practices of development.

I hope, during the internship program, this report will reflect my learning and you will find it in order.

Sincerely,

Fatema Jerin

Student ID: 1631221

I take this opportunity to express my gratitude to the people who have been instrumental in the successful completion of this report. Any report's success depends heavily on the encouragement and guidelines of many individuals. I would like to express my gratitude to my internship supervisor Ajmiri Sabrina Khan for providing me the report with clear guidelines and instructions throughout my internship program. Without her help, suggestion and cooperation, this report would not have been completed successfully. Moreover, I feel fortunate to have the opportunity to work at TEN's 360 as a Junior Website Developer at their Office. I am grateful to Rafee Mizan Khan Chowdhury (CEO) along with other members from TEN's 360, Ohinur Makaemey Mahmud (Client Manager), Rafik Un Nabi (Community Manager) who acted as a mentor to complete my regular task and provided me with valuable information regarding this report. Finally, I am grateful to Independent University, Bangladesh (IUB), for providing this knowledgeable and wonderful internship experience as a platform.



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Executive Summary

My internship was at TEN's 360, a digital marketing company. TEN's 360 is an end-to end provider of tech inspired digital and traditional marketing services in the industry. TEN's 360 operates all over Bangladesh and they have a huge client base and popularity.

This report is the result of the internship conducted in TEN's 360. I selected TEN's 360, a digital marketing company to complete my internship as a web developer.

The aim of the project was to develop a system for a new organization Call a Doctor BD.

Before working in any project, I had to complete my learning sessions, in this learning session I was assign to create some basic navigation panels, dashboard and some back-end code. It was like a skill test before assigning actual project.



Chapter 1: Introduction

1.1 Background

COVID-19 virus has caused widespread destruction around the globe, millions are getting effected and fears in people are rising. As a result, governments forced everyone to stop any kind of gathering. This created problem and left people in dilemma for those who needs medical attention and checkups regularly. In the middle of this rising fear of disease, people have turned to rely on technology. Technology has stepped into the public eye helping healthcare provider organizations, doctors and patients with digital consultations directly to a patient's home.

Covid-19 has put massive pressure on demand for doctors for seasonal and infectious disease. People wants to avoid going to the clinic, for the fear of contamination through infected surface. Demand for E-health care is rising and this system can bring doctors and patients together. Only way to reach doctor without going to the hospital or clinic is by using technology.

TEN's 360 has decided to create a web portal for Call a Doctor BD so that they can provide services seamlessly. Through this applications patient will be able to consult doctors at convenient time. All you need is the internet, laptop/phone to discuss your health issue with your digital doctor from your home.



1.2 Objectives

- **Convenience:** Through this portal you can book appointment at your own convenient time and discuss your problem at your home comfortably.
- **Saves Time:** This web application will definitely save time and patients will not have to take extra hassle to go to clinic or hospital.
- **Doctor and patients manage system:** There will be admin section to manage both doctor and patients for smooth service.
- **Follow-up appointment Notification:** Patients will be able to consult again with the same doctor to keep updated.
- **Learn about your health:** You have to examine your own body while discussing your symptoms this will let you learn about you own body and what you need for your well-being.
- **Track of own medical history:** You can save your medical history in the portal, and use it afterward whenever you need it or you can show it to your doctor when you need it.

1.3 Scope of the project

Features of this web portal:

- Landing page
- Login page for admin, patient, doctor
- Password reset page
- Different dashboard for each user type

Admin module:

- **Dashboard:** In this section there will be complete summary of Patients, Doctors, Appointments and New queries.
- **Doctors:** In this part admin will be able to create profile for doctors and manage their profile.
- **Users:** In this section admin will be able to users details who take online appointment and delete unnecessary users.
- **Patients:** In this part admin will be able to see patients' details.



- Appointment History: In this part patients admin will be able to see every patient's appointment history.
- Contact us Queries: In this section admin will be able to see queries send by users.
- Doctors Session Logs: History of doctor's login and logout will be here in this section.
- User Session Logs: Admin will be able to see users' sessions in this section.
- Reports: Admin will be able to see reports of patients of given period of time.
- Patients Search: Admin will be able to search Patients with patient's name and phone number.

Admin will be able to change his own profile, user name and password.

User module:

- Dashboard: dashboard will show summarized version of patients' profile, Appointments and book appointment.
- Book Appointment: Patients will be able to book appointment in this section.
- Appointment History: This section will show history of patients' appointment history.
- Medical History: Patients will be able to see own medical history.

Patient will to able to update or reset password.

Doctors module:

- Dashboard: This section will show doctors online appointments.
- Appointment History: Doctors will be able to see his/her patients appointment history, in this section.
- Patients: Doctors will be able to add or update patients, in this section.
- Search: Doctors will be able to search his/her patients profile using patients name or number.

Doctor will also be able to manage his/her own profile and reset password.

CHAPTER 2: BACKGROUND OF TEN's 360

2.1 Introduction of the TEN's 360

TEN's 360 is an end-to-end supplier of digital and traditional marketing services inspired by technology in the industry. They function as an organizational digital catalyst. TEN's 360 was founded with the goal of helping clients thrive in today's highly competitive marketing and tech environment. TEN's 360 is a provider of one stop marketing services that offers all kinds of marketing services aimed at branding any product/service on a digital and offline platform. While other companies are rushing to abandon traditional marketing in favor of digital technologies, TEN's 360 has strengthened its offline marketing capabilities while expanding our team of professionals to meet the digital needs of our customers. The team relies on three core values at TEN's 360 to drive success:

- Integrity
- Innovation
- Dedication

These three pillars form the foundation for everything the start-up does on behalf of their clients. When any clients are partnering with TEN's 360, they are choosing a one stop marketing solution service provider that is dedicated to protect and grow their brand/company/services. Located in 43, Mohakhali C/A, Dhaka, TEN's 360 promises to be one of the most creative marketing agencies in Bangladesh. They started the company small none the less now a vast venture with different merchandise products like posters, stickers, badges, mugs, etc. by opening a Facebook page. When they receive promising feedback and are on the verge of expanding their business to their merchandising business. The marketing team, the merchandising team and the web development team are currently divided into three sections. On the other hand, the marketing team looks after all a customer's digital needs; all the offline needs are handled by the merchandising team. The third team deals with all the IT and the web solutions like the development and maintenance of the website and apps. Among the digital section, planning long term and short-term marketing campaign for the clients, Facebook page management, preparing customer engagement reviews, negotiations on various digital deals, client servicing or query management, Media buying are very prominent. Facebook is one of the most popular media platforms now a day. Every person of the country has an access to the internet one way or the other.



Hence marketing through the Facebook is the best medium to reach the common mass. But, apart from Facebook, there are also various social media platform such as Instagram, Snap Chat, linked-in and Google Ads which the agency specializes on. This is what every company wants now a day to reach to their potential customers. The other thing that matters is being very trendy with the marketing campaign, in order to grab the maximum attention. Here where various company look for the most versatile agencies. This is where the agency comes in play with their creative ways to grab the attention of the customers. With their creative static posts, to videos to various campaigns is the part of their digital marketing strategy that creates a very deep attention to the common mass. TEN's Posters and Merchandise, on the other hand, come into play on offline marketing accounts. They have a broad range of offline marketing campaign products. Banners, posters, visitation cards, badges and wristbands, for example, and so on with these offline and online marketing strongholds, TEN's 360 has provided companies such as RANGS, BRAC University, OnePlus Bangladesh ltd, Anker Bangladesh ltd, Amazfit Bangladesh ltd, numerous restaurants and many, many more businesses with 360-degree marketing solutions. TEN's 360 will be one of the nation's leading digital marketing agencies, with its future efforts intact and with a very clear vision and mission.

2.2 Services Provided by TEN's 360

TEN's 360 offers a broad portfolio of traditional and digital marketing services. Their ability to design and deploy integrated marketing campaigns utilizing a variety of assets and channels sets us apart from other marketing services providers.



Figure 1: Services given by TEN's 360

2.3 Offline Marketing Services

TEN's 360's offline marketing services allow our clients to pursue growth with the same efficiency, scalability, and focused targeting that makes digital marketing platforms so desirable. Whether anyone is looking to reach a broad market or a very specific audience, TEN's 360 is capable of designing offline marketing strategies that delivers results.

- Custom Merchandises: Mugs, Posters, Stickers, Wristbands, Key rings, Badges, Wood Engraved Frames, T shirts, Pens, Caps etc.
- Print Advertising: Notepads, Letter Heads, Visiting/Business Cards, Calendars, Diaries, Company Folders, Envelops, Banners, Backdrops, X-Banners etc.
- Printed collaterals.



Figure 2: Offline Marketing Products by TEN's 360



2.4 Online Marketing Services

TEN's 360's digital marketing services are a great way to take advantage of the latest marketing technology. The Start-up has experience and technical ability to enable customers to implement a targeted digital strategy from day one that delivers results. On the other hand, the marketing team looks after all a customer's digital needs; all the offline needs are handled by the merchandising team. The third team deals with all the IT and the web solutions like the development and maintenance of the website and apps. Among the digital section, planning long term and short-term marketing campaign for the clients, Facebook page management, preparing customer engagement reviews, negotiations on various digital deals, client servicing or query management, Media buying are very prominent. Facebook is one of the most popular media platforms now a day. Every person of the country has an access to the internet one way or the other.

2.4.1 IT Support

- Website Design & Development
- Using earned media such as Facebook, LinkedIn and twitter to strategically funnel customers towards client's website and acquire new customers.
- Native desktop and web applications
- Cross-platform applications (Android & iOS) to reach clients loyal customers
- Search engine optimization: Successfully position clients in search engines through a highly strategic and geographically-based use of keywords, a methodical SEO strategy, blog posts and high-quality backlinks.



Figure 3: Unique Selling Points of TEN's 360

2.4.2 Social Media Marketing

- Promo Videos.
- Event Coverage.
- Event Management.
- Audio visuals.
- Animation videos.
- Info-graphics.
- Explainers.
- Product photo shoot.
- Event shoot.
- Graphics Design.
- Logo design.
- Advertisement designs.
- Creating engaging social contents.
- Media Buying.
- Online Community Management.
- Marketing Strategy Support and Consultancy



Figure 4: TEN's 360 YouTube Channel



2.5 History of TEN's 360

Our story began on 2013 as the 1st Online Poster and Merchandise Shop at Dhaka named 'TEN's Posters and Merchandises' with different merchandise products such as posters, stickers, badges, mugs, etc. In 2014- 2015 we affiliated with leading brands in Bangladesh such as Artcell, Nemesis and so forth. Our dedication, determination and uniqueness brought us huge feedbacks and thus in 2015 we decided to expand our business. In 2016 we became the champion in Business Plan Competition organized by CED, BRAC University and now we are here.

2.6 Clients of TEN's 360

From 2016, TEN's 360 has worked with more than 500 Clients and still they are providing services to the top tier brands of Bangladesh and Abroad. TEN's 360 has already worked with brands like Walton, BRAC University, OnePlus Bangladesh, Anker Bangladesh, Amazfit Bangladesh, Rangs, Super Board, Xiaomi Bangladesh and many more.



Figure 5: Clients of TEN's 360

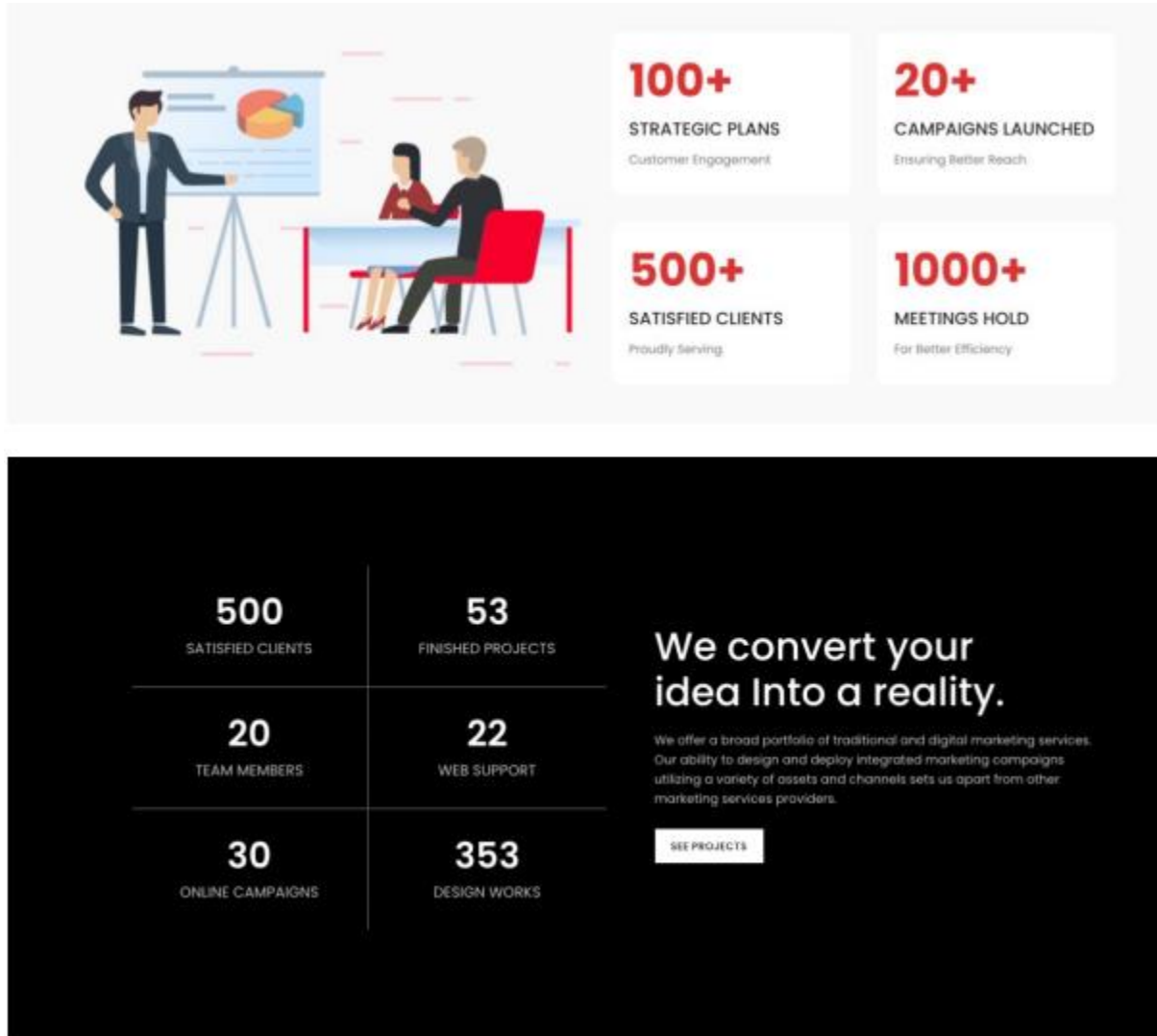


Figure 6: Experience of TEN's 360

2.7 Accomplishments of TEN's 360

In 2015, TEN's 360 submitted their business plan to Centre for Entrepreneurship Development (CED) for their Business Plan Competition 2015. After a passing through different steps, TEN's 360 became Champion of the Competition and received Seed Fund, Office Space and Mentorship till 2022.

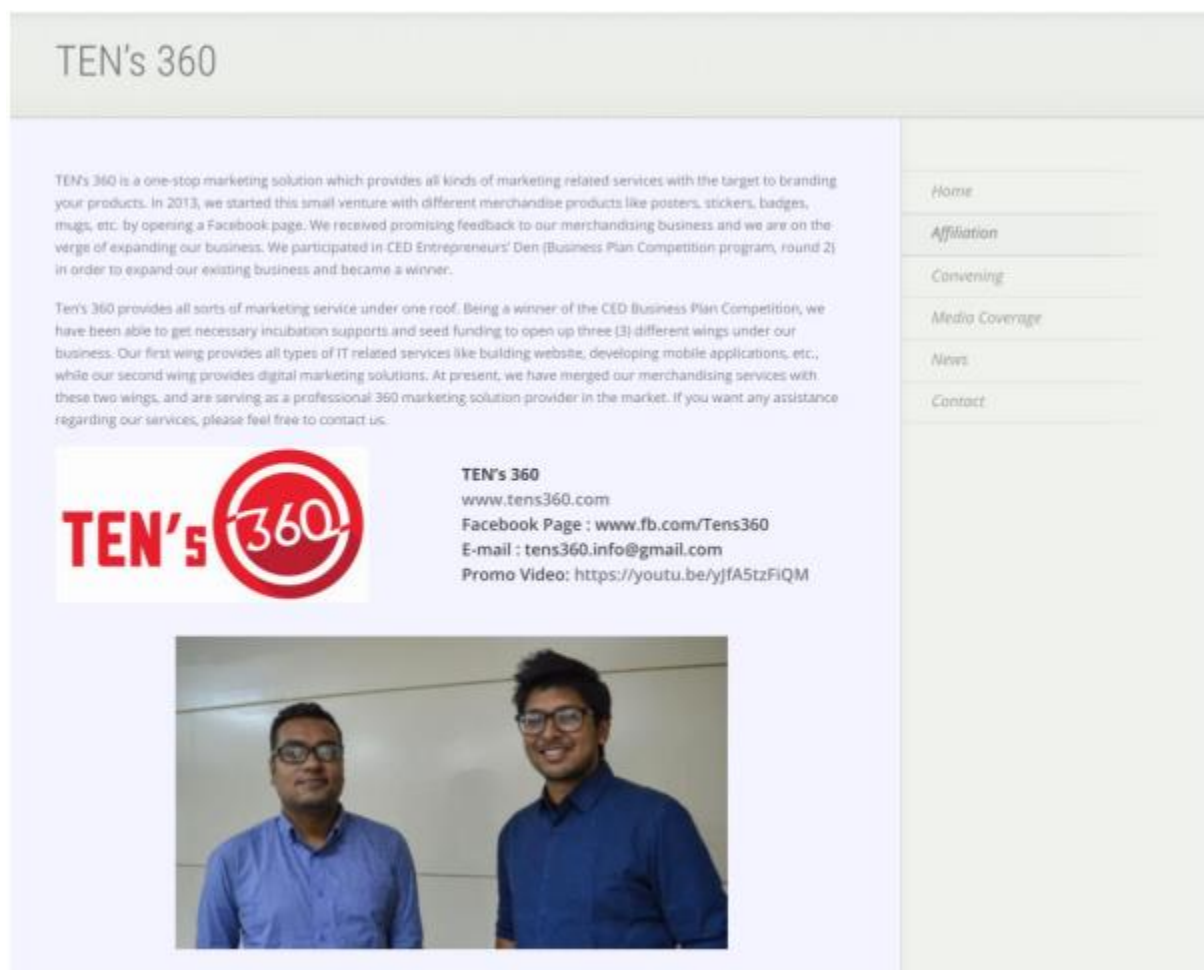


Figure 7: TEN's 360 profile in CED website



CHAPTER 3: LITERATURE REVIEW

3.1 Courses that helped during development process

The skills and knowledge I used to create this website 'Call a Doctor BD' was all taught in my undergrad life. The courses are:

- **CSE 309 Web Application and internet:** This course helped me the most in this project, in this course we were taught about the web application development from scratch. In this course we were taught HTML, CSS, JavaScript, json and PHP. These were huge help during the development of the software "Call a Doctor BD".
- **CSE 307 System Analysis and Design:** In this course we were taught about how to analyze a system and design according to the requirements. This course helped a lot to create document for the website.
- **CSE 303 Database Management:** This course is the pillar of this project. In this course we were taught how to plan, draw process flow diagram, Rich pictures, normalization, requirement analysis, entity relation diagrams, Business process model and notation diagram and lastly SQL.
- **CSE 451 Software Engineering:** This course is all about methodology and SDLCs, in this course we were taught more about cross functional process diagrams, different kind of SDLCs, WBS, how to create Gantt's chart. This course has immense contribution to this project.
- **CSE 203 Data Structures:** This is a very first level course, this course helped to handle data in much easier way. It helped to code "Call a Doctor BD" in a modular format.



3.2 Related Works:

Hostel Management System:

This was academic project, build during the course system analysis. It is similar because it was also a website. It was a system build to make life easier for students and save their crucial time. The structure of the site was very similar to this project like login pages, dashboards.

CHAPTER 4: Methodology

4.1 Web Applications

A web application is a program which you can connect from any web browser. There are two parts of a web front-end and back-end. Front-end is usually coded with JavaScript, CSS and HTML.

4.1.1 Front end Language:

- **HTML:** HTML stands for Hyper Text Markup Language. It is used to design the front-end portion of web pages using markup language. HTML is a combination of a language called Hypertext and Markup. A link between web pages is defined by hypertext. The markup language is used to define the text documentation that defines the structure of the web pages within the tag.
- **CSS:** Cascading Style Sheets, affectionately referred to as CSS, is a simple language designed to simplify the presentation process of web pages. CSS makes it possible for you to apply styles to web pages. More importantly, CSS allows you to do this independently of the HTML that each web page is made up of.
- **JavaScript:** JavaScript is a popular scripting language used to create magic on websites so that the website can be interactive for the user. It is used to improve a website's functionality by running cool games and web-based software. (1)



Figure 8: Front end language



4.1.2 Front End Frameworks and Libraries

- **AngularJS:** AngularJS is a JavaScript open-source front-end framework that is mainly used to develop single page web applications (SPAs). It is a continuously growing and expanding framework which provides better ways for developing web applications. It changes the static HTML to dynamic HTML. It is an open-source project which can be freely. It extends HTML attributes with Directives, and data is bound with HTML.
- **React.js:** React is a declarative, efficient, and flexible JavaScript library for building user interfaces. ReactJS is an open-source, component-based front-end library responsible only for the view layer of the application. It is maintained by Facebook.
- **Bootstrap:** Bootstrap is a collection of free and open-source tools to create responsive websites and web applications. For developing responsive, mobile-first web sites, it is the most common HTML, CSS, and JavaScript framework.
- **jQuery:** jQuery is an open-source JavaScript library that simplifies the interaction between the Document Object Model (DOM) and JavaScript, or more precisely, an HTML/CSS document. jQuery simplifies HTML document traversing and manipulation, browser event handling, DOM animations, Ajax interactions, and JavaScript cross-browser development by elaborating the terms.
- **SASS:** It is a CSS extension language that is the most reliable, mature and robust. It is used to easily extend the functionality of a site's current CSS, including everything from variables, inheritance, and nesting.
- Some other libraries and frameworks are: Semantic-UI, Foundation, Materialize, Backbone.js, Express.js, Ember.js etc. (1)



Figure 9: Logos of Front-end frameworks

4.1.3 Back-End Language

The back-end portion is built by using some languages which are discussed below:

- **PHP:** PHP is a scripting language on the server side, designed specifically for web development. Since PHP code is executed on the server side, it is called the language of server-side scripting.
- **Java:** One of the most popular and widely used languages and platforms for programming is Java. It is extremely scalable. There are easily accessible Java components.
- **Python:** Python is a programming language that allows you to work quickly and to more effectively integrate systems.
- **JavaScript:** JavaScript can be used both as a programming language (front end and back end).
- **Node.js:** Node.js is an open source and cross-platform runtime environment that allows JavaScript code to be executed outside the browser. NodeJS is not a framework and it is not a programming language, you must remember. Most individuals are confused and understand that it is a programming language or framework. For building back-end services such as APIs like the Web App or the Mobile App, we often use Node.js. It is used by big companies like PayPal, Uber, Netflix, Walmart and so on in manufacturing. (1)



Figure 10: Logo of some famous back-end language

4.1.4 Waterfall Methodology

Waterfall software development lifecycle methodology was used to create the project Call a Doctor BD. Waterfall is very simple and earliest SDLC approach used for software development, it is also sometime referred as linear-sequential life cycle model. Whole waterfall SDLC is divided into 6 phases and each phase be completed before the phase can begin, phase cannot be skipped.

The phases are:

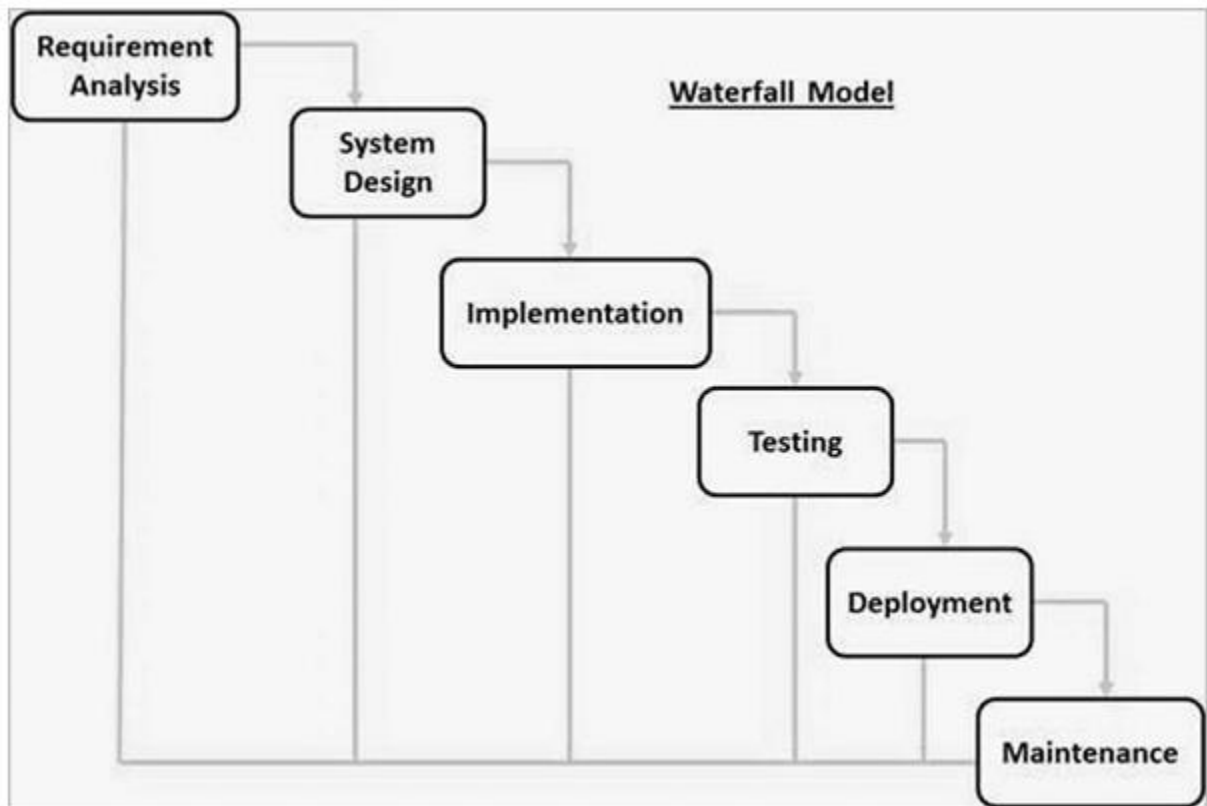


Figure 11: Different phases of waterfall model.



- **Requirement Gathering and analysis** – All possible requirements of the system to be developed are captured and documented in a requirement specification document during this stage.
- **System Design** - In this phase, the first-phase requirement specifications are studied and the system design is prepared. This system design helps to specify requirements for hardware and systems and helps to define the overall system architecture.
- **Implementation** – The system is first created with inputs from the system design in small programs called units, which are incorporated in the next phase. For its functionality, which is referred to as Unit Testing, each unit is developed and tested.
- **Integration and Testing** – After testing of each unit, all the units developed in the implementation phase are integrated into a system. The entire system is tested for any faults and failures after integration.
- **Deployment of system** – Once the functional and non-functional testing is performed, the item is deployed or released to the market in the customer environment.
- **Maintenance** – In the client setting, there are some issues that come up. Patches are released to repair those problems. Also, some better versions will be released to improve the product. In order to deliver these changes in the client environment, maintenance is performed. (2)

4.1.5 Development Tools Used

To create call a doctor bd web application several tools were used. Let's start with bootstrap.

1. Bootstrap

Bootstrap is one of the most famous frameworks for creating responsive websites and it is an open-source toolkit, anyone can use it for free. It is very easy to use and it makes the development process very seamless.



Figure 12: Logo of Bootstrap

2. Sublime

Sublime Text Editor is a full-featured text editor for local or code-based file editing. It includes various code base editing features that assist developers to keep track of changes. Various features that are supported by Sublime are as follows –

- Syntax Highlight
- Auto Indentation
- File Type Recognition
- Sidebar with files of mentioned directory
- Macros
- Plug-in and Packages

The Sublime Text editor, like Visual Studio code and NetBeans, is used as an Integrated Development Editor (IDE). The current version of the Sublime Text editor is 3.0 and is compatible with various Windows, Linux and MacOS operating systems. (3)



Figure 13: Logo of sublime Text Editor

4.2 Other Non-Development Tools Used

There were some other tools used in the process of developing the website call a doctor bd, to have a continuous workflow, keep track of work and keep a backup. So, the first tool we were zoom to have all the meetings as we had to work from home during this pandemic.

1. Zoom

Zoom is a cloud-based service which offers Meetings and Webinars and provides content sharing and video conferencing capability. You do not need a Zoom account to attend a Zoom meeting, only the host is required to have an account to enable the scheduling of meetings. All staff and students at USQ have access to a Zoom account.

Zoom offers video, audio and screen sharing experience across a wide range of devices and platforms. (4)



Figure 14: Logo of Zoom

2. GitHub Desktop

Built by GitHub, it's a tool that allows you to interact with GitHub from the desktop. It's got a rich interface that allows to manage code without the command window. With the recent release, GitHub Desktop 2.0 now also supports rebasing and stashing — two most requested features that the original version lacked. (5)

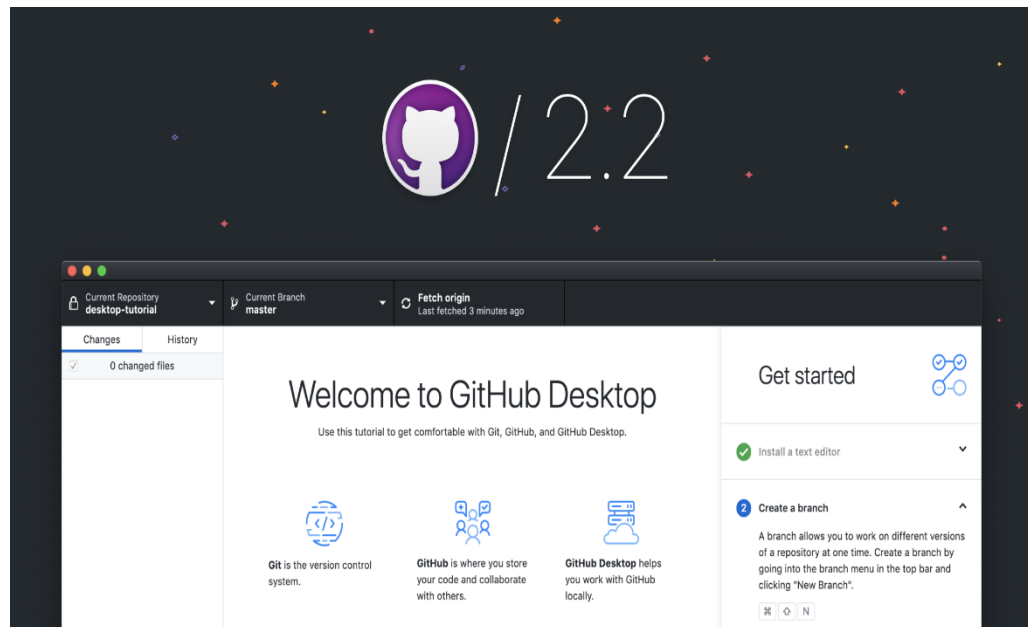


Figure 15: UI of GitHub Desktop



CHAPTER 5: Project Management

5.1 Work Breakdown Structure

1. Call a Doctor BD

1.1 Planning

- I. Meeting for initial planning
- II. Develop project schedule
- III. Develop resource management plan
- IV. Develop budget plan

1.2 Design

- I. Design ER diagram
- II. Design system Architecture
- III. Design workflow diagram
- IV. Design WBS
- V. Design UI

1.3 Development

- I. Develop Backend
- II. Develop user interphase
- III. Develop software components
- IV. Integrated frontend and backend

1.4 Testing

- I. Management unit testing
- II. Black box testing
- III. Reliability testing
- IV. Quality control



1.5 Deployment

- I. Deployed in web portal
- II. Doctor account connector
- III. Patient account connector
- IV. Appointment scheduling
- V. Follow-up

1.6 Management

- VI. Bug fixes
- VII. Regular update
- VIII. Unforeseen events



Fatema Jerin

TEN's 360

5.2 Gantt Chart

Call A Doctor BD

TEN's 360

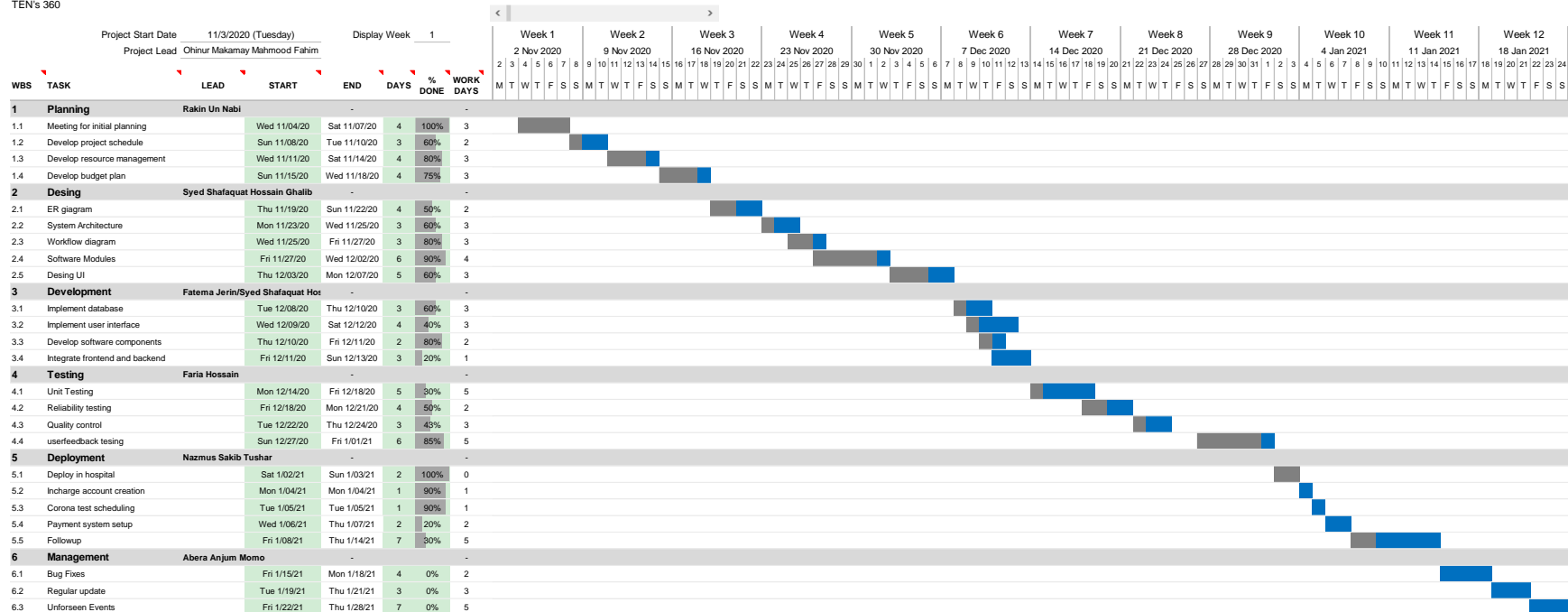


Figure 16: Gantt Chart for Call a Doctor BD Development



CHAPTER 6: Body of the Project

6.1 Description of the work

Call a doctor bd website allows professionals to evaluate, diagnose and treat patients while stay at home using telecommunication technology. There is two-way communication between patient and doctors. During situation like covid-19 this portal will benefit both doctor and patients. Keeping in mind the struggle we are going through due to lock down, Team TEN's 360 wanted a platform that makes healthcare accessible from any parts of the country.

6.2 System analysis

6.2.1 Six element Analysis:

Process	System Roles				
	Human	Non computing hardware	Computer hardware	Software	Comm. & Network
View Landing page	User	N/A	Smartphone / desktop	Web browser	WAN/LAN
Login or Sign up	User	N/A	Smartphone / desktop	Web browser	WAN/LAN

Table 1: Six Elements Analysis of "Call a Doctor BD"



Process	System Roles				
	Human	Non computing hardware	Computer hardware	Software	Comm. & Network
Add doctor	Admin	N/A	Smartphone / desktop	Web browser	WAN/LAN
Add patients	Admin / Doctor	N/A	Smartphone / desktop	Web browser	WAN/LAN
View appointment history	User	N/A	Smartphone / desktop	Web browser	WAN/LAN
View report	Admin	N/A	Smartphone / desktop	Web browser	WAN/LAN
Patient search	Admin / Doctor	N/A	Smartphone / desktop	Web browser	WAN/LAN

Table 2: Six Elements Analysis of "Call a Doctor BD"



Process	System Roles				
	Human	Non computing hardware	Computer hardware	Software	Comm. & Network
Book appointment	Patient	N/A	Smartphone / desktop	Web browser	WAN/LAN
View medical history	Patient	N/A	Smartphone / desktop	Web browser	WAN/LAN
Change password or user name	User	N/A	Smartphone / desktop	Web browser	WAN/LAN

Table 3: Six Elements Analysis of "Call a Doctor BD"

6.3 System Design

6.3.1 Rich Picture

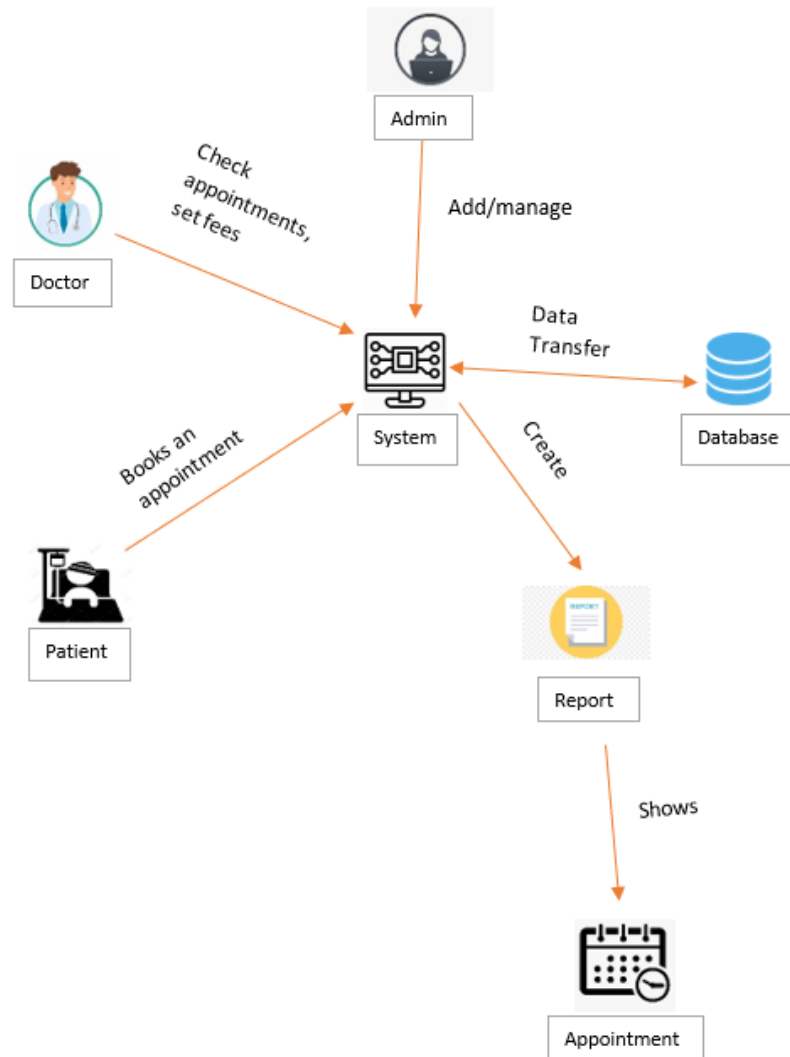


Figure 17: Rich Picture for Call a doctor BD

6.3.2 Use Case Diagram

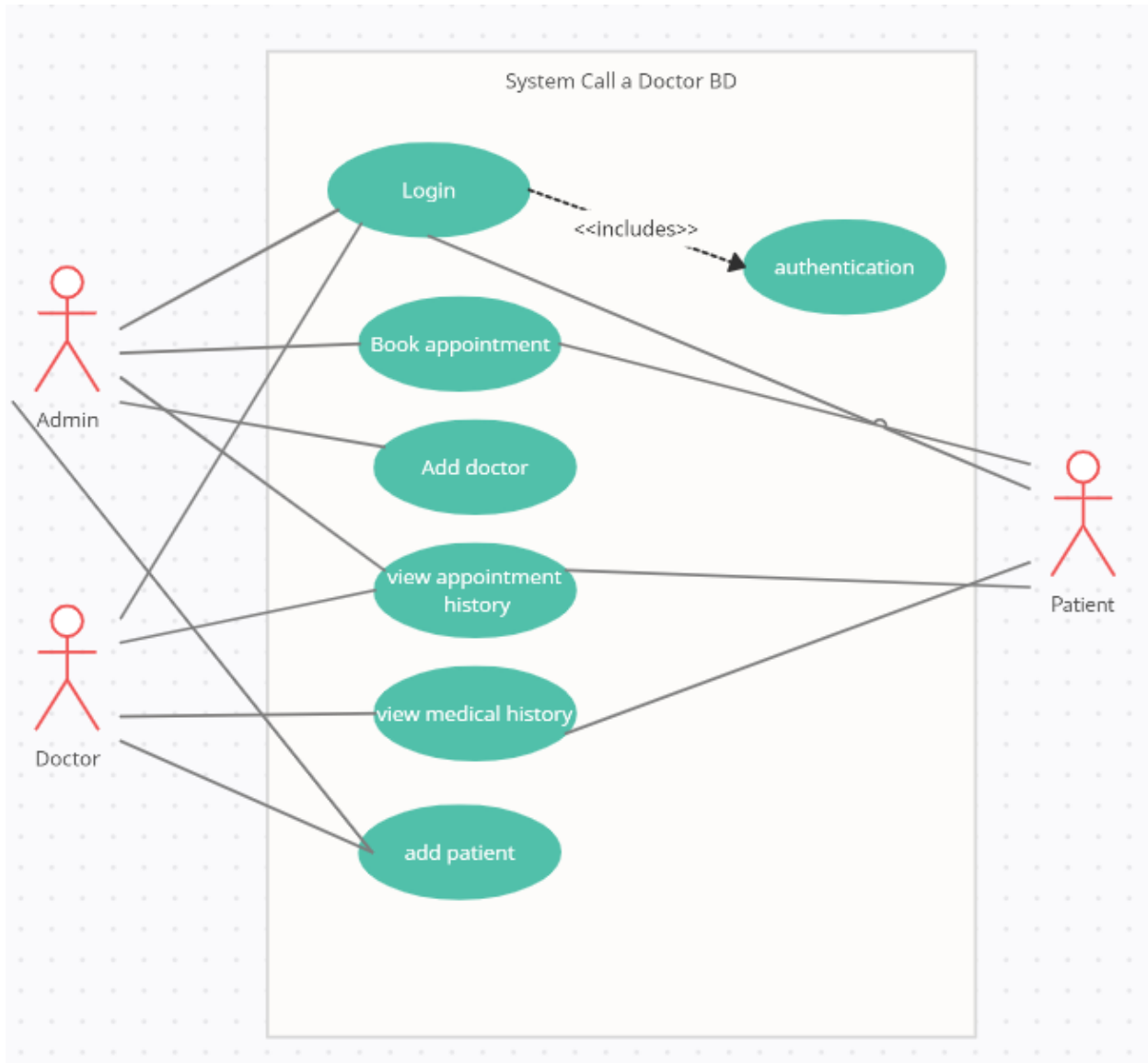


Figure 18: Use case diagram for Call a Doctor BD

6.3.3 Entity Relationship Diagram (ERD)

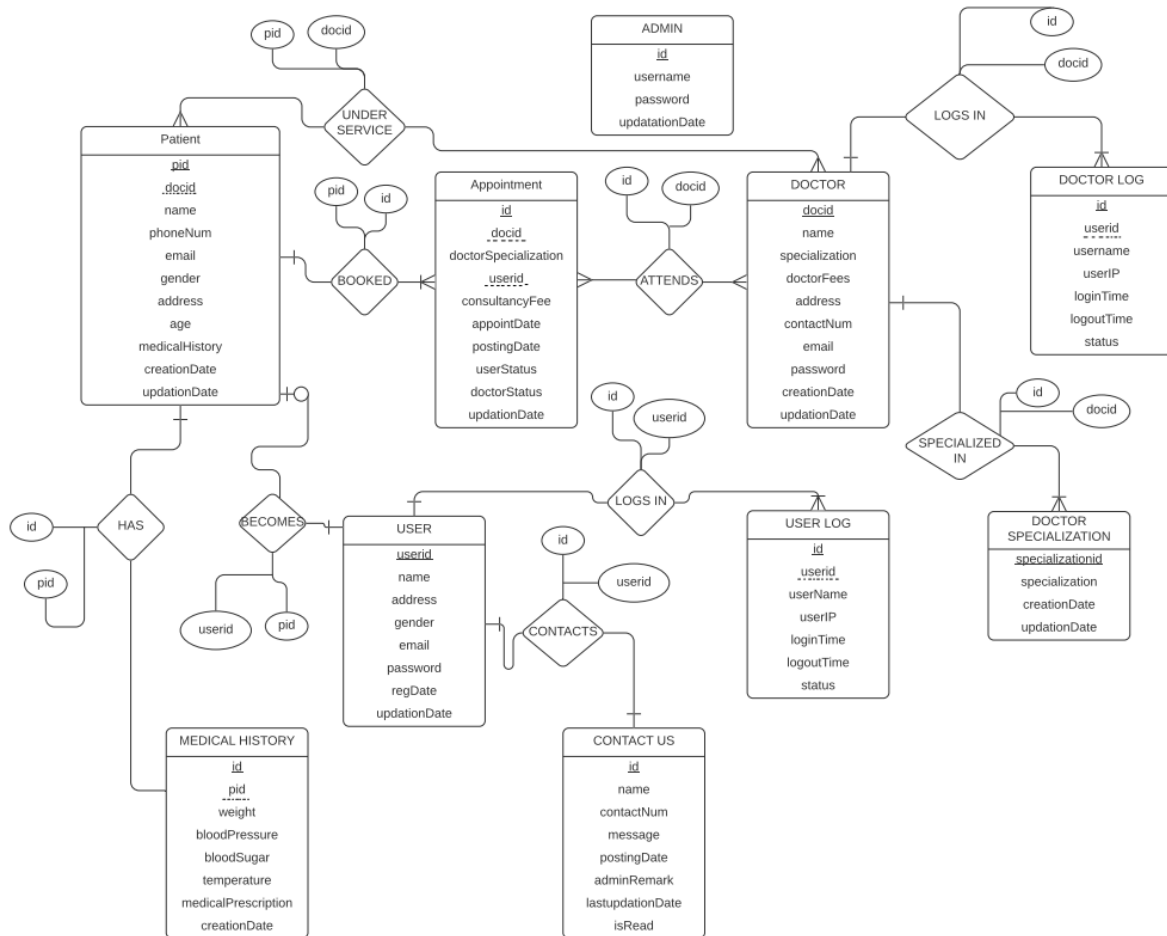


Figure 19: Entity Relationship Diagram of Call a Doctor BD Database



6.4 Functional Requirements

Function: Patient sign up		
Input: Username, email, password.	Process: Save sign up details to database.	Output: New user created and added to database
Precondition: Must have intern access.		
Postcondition: User gets confirmation message and gets redirected to login page.		

Table 4: Functional Requirement 1- signup process

Function: Book appointment		
Input: Personal information like phone number, address, age etc.	Process: Save details of the patient in database.	Output: Appointment will be created and doctor will contact patient soon.
Precondition: Must have internet access.		
Postcondition: User will get booking confirmation message and will be able to see appointment in appointment history section.		

Table 5: Functional Requirement 2-book appointment process



Function: Reset password		
Input: User email address and new password.	Process: Replace old password with new one.	Output: New password will be updated and added to database.
Precondition: Must have internet access.		
Postcondition: User will get notification of password reset successfully.		

Table 6: Functional Requirement 3- reset password process

Function: Add doctor		
Input: Provide doctors information	Process: Save doctors information to database	Output: New doctor will be created and add to database.
Precondition: Must have internet connection.		
Postcondition: Notification of new doctor created will be given		

Table 7: Functional Requirement 4- add doctor process



Function: Search patient		
Input: Enter patient name or phone number	Process: Call function to go through patient database and find the match.	Output: Searched patient will be shown on the screen.
Precondition: Must have intern access.		
Postcondition: Notification of found patient will be given.		

Table 8: Functional Requirement 5- search patient process

Function: Add patient		
Input: Provide patient information	Process: Save patient information to database	Output: New patient will be created and add to database.
Precondition: Must have intern access.		
Postcondition: Notification of new patient created will be given		

Table 9: Functional Requirement 6- add patient process



Function: Generate report		
Input: Enter date.	Process: Call function to go through that database and generate an automated report within the given date.	Output: Creates table and shows report.
Precondition: Must have intern access.		
Postcondition: Notification of found patient will be given.		

Table 10: Functional Requirement 7- Generate report process.

Function: Contact Us queries		
Input: Provide information and queries.	Process: Save query to database	Output: New query will be created and admin will be notified.
Precondition: Must have intern access.		
Postcondition: Notification of new query created will be given.		

Table 11: Functional Requirement 8- contact us process



Function: Medical history		
Input: N/A	Process: Call function to go through patient database retrieve information	Output: Shows patients medical history.
Precondition: Must have intern access.		
Postcondition: Shows medical history in the screen.		

Table 12: Functional Requirement 9- view medical history process

Function: Show doctor session logs		
Input: N/A	Process: Call function to go through doctor's session logs database retrieve information.	Output: Shows log history.
Precondition: Must have intern access.		
Postcondition: Shows doctors log in the screen.		

Table 13: Functional Requirement 10-show doctor sessions log process

6.5 Non-Functional Requirements

Performance and Scalability: Response time for of this system is quite instance you don't have to wait for too long. The login process is very smooth and logs in to one's account instantly. Other functions like booking appointment, adding patient, adding doctors etc. are also very fast and smooth. The site is responsive for every device. It can be accessed from phone, tablet or laptop without compromising any function.

Portability and Compatibility: High end devices or equipment is not required; any web browser can be used to access this portal but internet access is must. The portal is compatible with phone, table, laptop and desktop. It runs on any types of browser or operating system.

Reliability, availability and maintainability: The portal has gone through several performance tests and based on test result it can be said that system will run smoothly for a long time. The maintenance is also easy, portal has backups so when the main portal goes under maintenance backup up portal can be used.

Security: Accounts credential is saved into the database securely password of each user's account is encrypted and then saved to database the process is done automatically. Only patients can view his/her own medical history no one has access to patient's medical history.

Usability: This portal is like any other portal any one can use it extra training is not need.



6.7 Product Features

6.7.1 Data Dictionary

Admin

Name	Data type	Size
id	Integer	11
username	Varchar	255
password	Varchar	255
updatetime	Varchar	255

Table 14: Data Dictionary of Admin

Doctor

Name	Data type	Size
id	Integer	11
doctorName	Varchar	255
Address	longtext	-
docFees	Varchar	255
Contactno	Bigint	11
docEmail	Varchar	255
password	Varchar	255
creationDate	Timestamp	-
updatetime	timestamp	-

Table 15: Data Dictionary of Doctor



Patient

Name	Data type	Size
ID	Integer	11
Docid	Integer	255
ParientName	varchar	-
PatientContno	bigint	255
PatientEmail	varchar	200
PatientGender	Varchar	50
PatientAddress	mediumtext	-
PatientAge	Integer	10
PatientMedhis	mediumtext	-
creationDate	Timestamp	-
updationDate	timestamp	-

Table 16: Data Dictionary of Patient

6.7.2 Architecture of the System:

Model view controller pattern is used to create this portal, this model is separated into three parts model, view and controller. In model view all data related logics are executed, in view model all the UI logics are run for example text boxes, buttons that user interacts with, and lastly controller, this model creates the connection between model and view model.

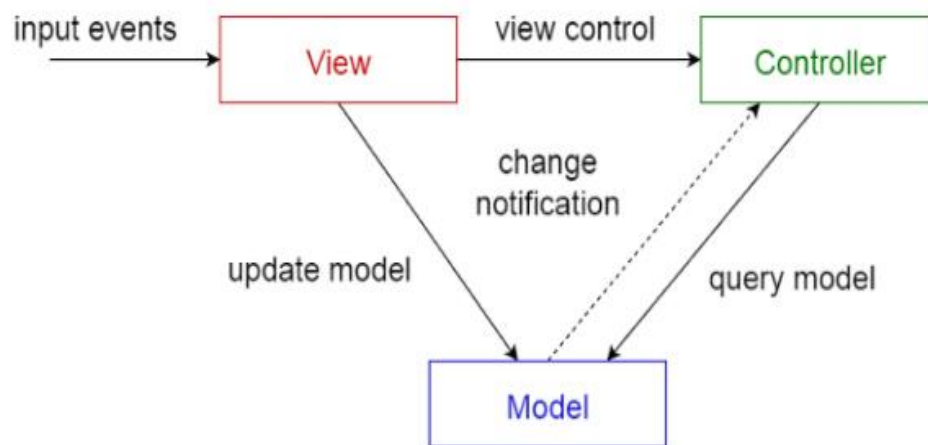


Figure 20: A model view controller pattern

CHAPTER 7: Result and Analysis

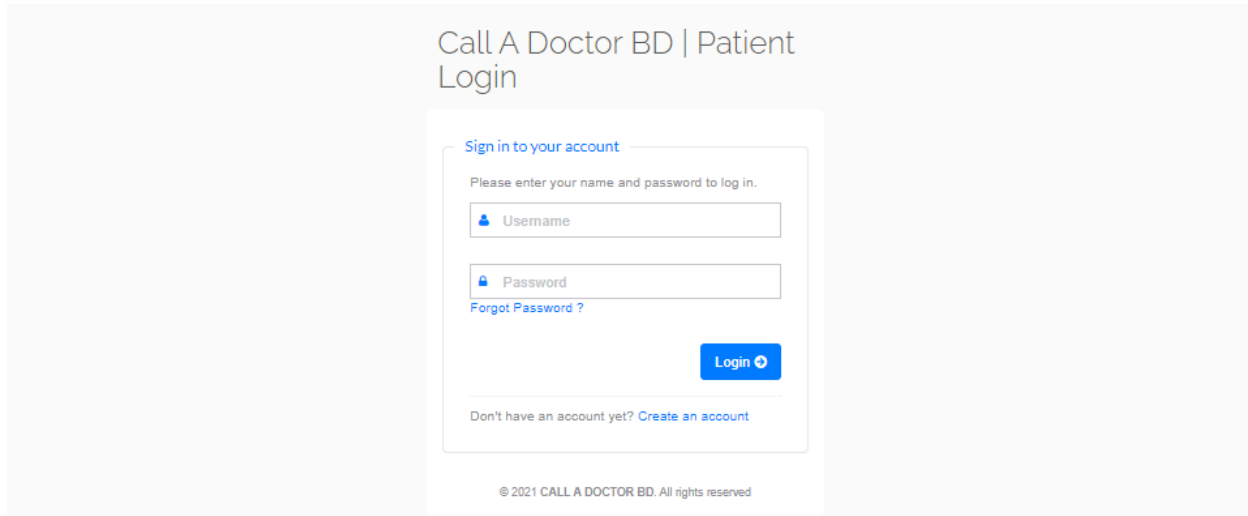
This chapter contains screenshots of the application so that it can be seen what the portal looks like.

Landing page of Call a Doctor BD



Figure 21: Landing page of the website.

Login page of patient



Call A Doctor BD | Patient Login

Sign in to your account

Please enter your name and password to log in.

Username

Password

[Forgot Password ?](#)

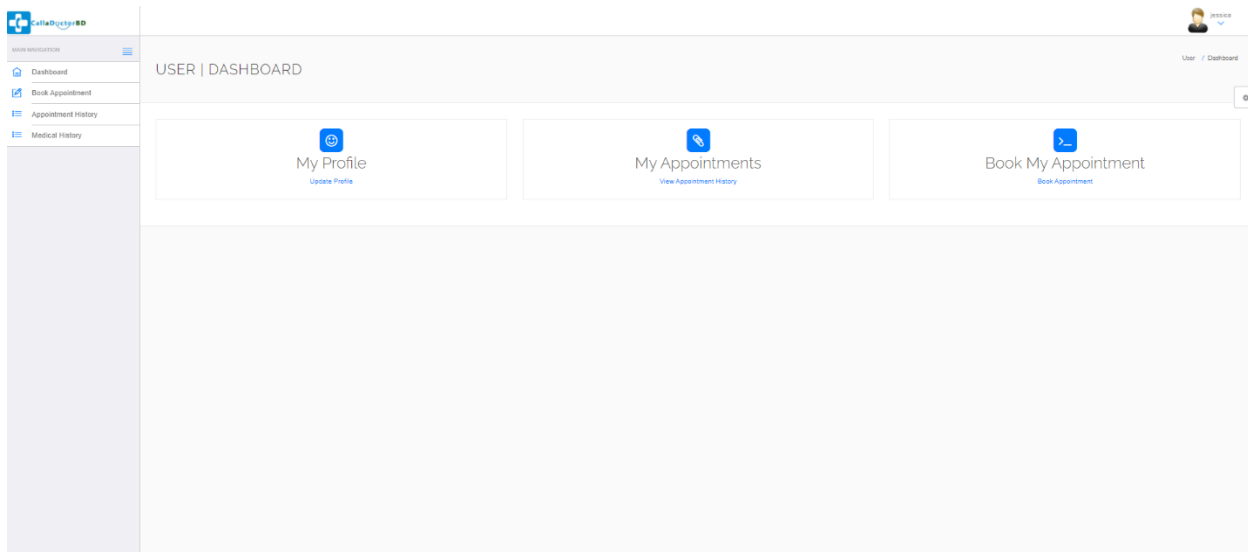
[Login](#)

Don't have an account yet? [Create an account](#)

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Figure 22 UI patient login page.

Patient Dashboard



Call A Doctor BD

MAIN NAVIGATION

- Dashboard
- Book Appointment
- Appointment History
- Medical History

USER | DASHBOARD

User / Dashboard

[My Profile](#)
Update Profile

[My Appointments](#)
View Appointment History

[Book My Appointment](#)
Book Appointment

Figure 23: UI of patients Dashboard



Appointment Booking page

USER | BOOK APPOINTMENT

Book Appointment

Doctor Specialization
Select Specialization

Doctors
Select Doctor

Consultancy Fees

Date

Time
1:30 AM
10:00 PM

Submit

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Figure 24: UI of appointment booking page

Medical History page

USERS | MEDICAL HISTORY

User's Medical History

Patient Details

Patient Name	P1	Patient Email	test@gmail.com
Patient Mobile Number	455055789	Patient Address	Baran
Patient Gender	Female	Patient Age	25
Patient Medical History (if any)	She is diabetic patient	Patient Reg Date	2019-11-05 03:38:05

Medical History

#	Blood Pressure	Weight	Blood Sugar	Body Temperature	Medical Prescription	Visit Date
1	120/200	55 kg	95/120	98 deg	# blood pressure is high. 1 test ciple	2019-11-05 10:52:42
2	95/120	57 kg	95/120	102 deg	# viral 1 uggh-1M1 2 gphuy-2M	2019-11-05 10:55:55

Figure 25: UI of Medical History page.



Manage Patient page

CallaDx

MAIN NAVIGATION

- Dashboard
- Appointment History
- Patients
- Search

PATIENT | ADD PATIENT

ADD PATIENT

Patient Name
Enter Patient Name

Patient Contact no
Enter Patient Contact no

Patient Email
Enter Patient Email id

Gender
☐ Female ☐ Male

Patient Address
Enter Patient Address

Patient Age
Enter Patient Age

Medical History
Enter Patient Medical History(if any)

Add

Figure 26: UI of Manage Patient page

Edit doctors' details page

CallaDx

MAIN NAVIGATION

- Dashboard
- Appointment History
- Patients
- Search

DOCTOR | EDIT DOCTOR DETAILS

EDIT DOCTOR

abc's Profile
Profile Reg. Date: 2017-01-07 14:08:55
Profile Last Update Date: 2021-01-14 03:13:31

Doctor Specialization
Demo test

Doctor Name
abc

Doctor Clinic Address
Dhaka

Doctor Consultancy Fees
200

Doctor Contact no
1687650095

Doctor Email
test@demo.com

Update

Figure 27: UI of edit doctors information page



Admin Dashboard page

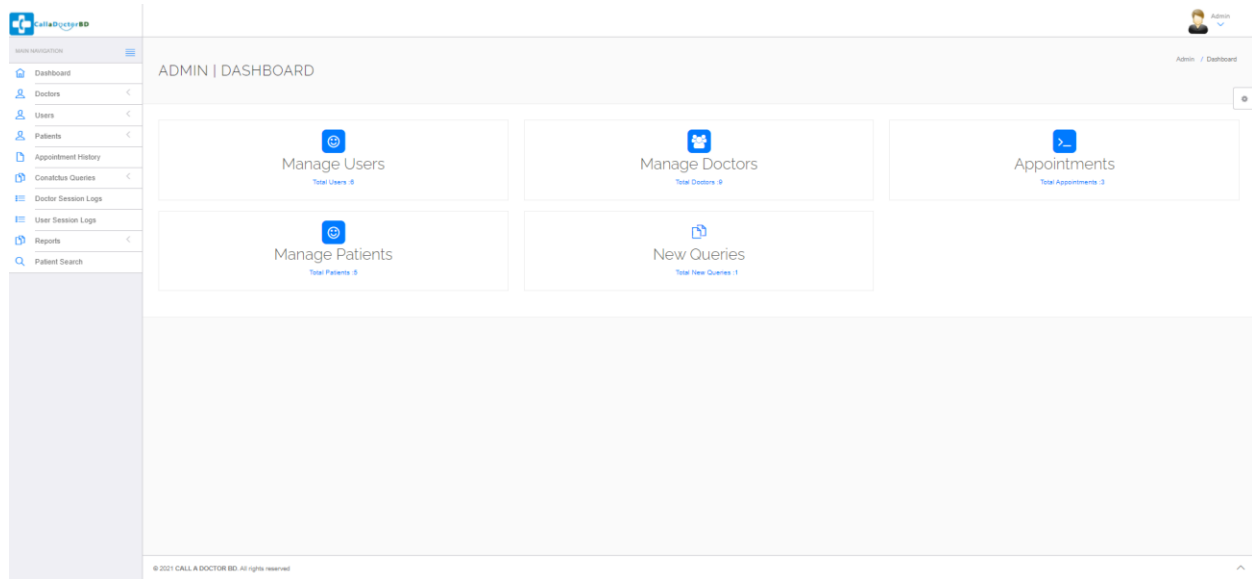


Figure 28: UI of admin dashboard

Doctor session page

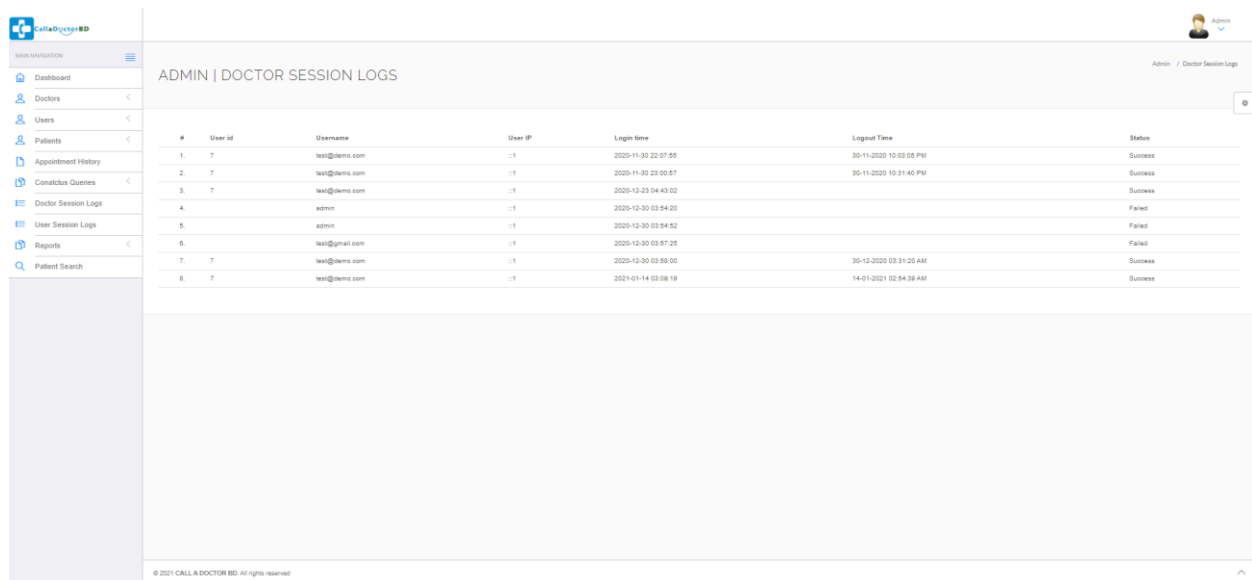


Figure 29: UI of doctor session log page



CHAPTER 8: Engineering Problem analysis

8.1 Sustainability of the product

8.1.1 Challenges faced

Expectation and outcomes: Main issue that a web developer has to face during web development process is that the requirements keep changing. A survey was conducted by Stack overflow Developer and it shows that 33% consider creating website with unspecific requirement. Requirement gather is very important before starting to build any product.

To overcome this challenge the solution is:

- Outline a scope of the project.
- Do not assume any requirement.
- Communication between teams.
- Create a requirement document.
- Involve users from the beginning.

Adapting the latest market trends: Use technology is increasing day by day so are the users, now days everyone is leaning towards phone so mobile-first or mobile only is quite challenging. Solution to this is to stay up to date with the market trends.

Project Management: Multi-tasking sometimes gives more trouble than expected. So, a good planer is required for keeping the work flow continuous and organized. It was difficult for me to understand the whole process and top of that we were in middle of pandemic situation because of that every had to adopt new system for which the project took more time than it usually takes.



8.2 Social and Environmental effects and analysis

Social effect

Health care crises are increasing day by day, as the need for health care is increasing a platform is needed to meet the demand telehealth care are changing the scenario of healthcare system. Many new organizations are providing healthcare service through social media and web portals, number of those organization is also increasing as patients are liking and adapting this service very well. Telemedical care is strengthening local hospital treatments.

Environmental effects

During this pandemic virtual health care system benefited to so many people that the people are considering to consult doctor virtually for post pandemic life as well. This became a standard way of seeing your doctor. This system is also very eco-friendly like it is reducing carbon emission for example people normally takes their car to the hospital or clinic but as they can consult doctor while staying at home they don't have to travel to the hospital. It is also reducing medical office waste for example when a patient leaves the exam room of a doctor, the room must be cleaned for the next patient this process creates excess waste.



8.3 Ethics and ethical issues

In this era of technology trying to be someone became very easy, without knowing someone can try to impersonate you and use your credential to do illegal or commit any crime. It became vital to keep user data securely otherwise someone can easily attack the system and take user information.

Fraud and Identity Theft: The website does not allow any other third-party software to the database. Data are from what user provides no other information are stored. This system does not have a payment gate-way, so users will not be required to give any bank account or card information.

Data Security: Only the head developer will have access to the server and the database system. Database is secured with user name and password, without this logging information no one else can have access to the data collection.

No Discrimination: There are no discriminate of any kind based on race, sexuality, gender, religious beliefs, color, language, political or other opinion, national or social origin, property, birth, or other status.



CHAPTER 9: Future Work and Conclusion

9.1 Future work

As this is the first version of Call a Doctor BD, it has many sides for improvement some of them are:

- Add payment gateway.
- Add premium features.
- Add instant messaging option.
- Add video consultancy option.
- Add new user Nurse.
- Improve existing features.

9.2 Conclusion

My contribution in this project was the admin panel and I have taken every necessary step to finish my task in given time. In this three month I have obtained a lot of experience and knowledge from TEN's 360. Now I have the knowledge of how to design a website from scratch. I have also gained experience by working in a team, I have seen myself growing immensely in these three months and I am glad that this experience was positive and I really enjoyed my time working with Ten's 360.



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APPENDIX -A (Backend code)

Login code authentication

```
<?php
session_start();
error_reporting(0);
include("include/config.php");
if(isset($_POST['submit']))
{
$ret=mysqli_query ($con,"SELECT * FROM users WHERE email='".$_POST['username']."' and
password='".md5($_POST['password'])."'");
$num=mysqli_fetch_array($ret);
if($num>0)
{
$extra="dashboard.php";//
$_SESSION['login']=$_POST['username'];
$_SESSION['id']=$num['id'];
$host=$_SERVER['HTTP_HOST'];
$uip=$_SERVER['REMOTE_ADDR'];
$status=1;
// For storing log if user login successful
$log=mysqli_query($con,"insert into userlog(uid,username,userip,status)
values('".$_SESSION['id']."','".$_SESSION['login']."','$uip','$status')");
$uri=rtrim(dirname($_SERVER['PHP_SELF']),'/\\');
header("location:http://$host$uri/$extra");
exit ();
```




```
}  
else  
{  
    // For storing log if user login unsuccessful  
    $_SESSION['login']=$_POST['username'];  
    $uip=$_SERVER['REMOTE_ADDR'];  
    $status=0;  
    mysqli_query($con,"insert into userlog(username,userip,status)  
values('".$_SESSION['login']."','$uip','$status')");  
    $_SESSION['errmsg']="Invalid username or password";  
    $extra="user-login.php";  
    $host = $_SERVER['HTTP_HOST'];  
    $uri = rtrim(dirname($_SERVER['PHP_SELF']),'/\\');  
    header("location:http://$host$uri/$extra");  
    exit();  
}  
}  
?>
```



Book appointment

```
<?php
session_start();
//error_reporting(0);
include('include/config.php');
include('include/checklogin.php');
check_login();
if(isset($_POST['submit']))
{
$specilization=$_POST['Doctorspecialization'];
$doctorid=$_POST['doctor'];
$userid=$_SESSION['id'];
$fees=$_POST['fees'];
$appdate=$_POST['appdate'];
$time=$_POST['apptime'];
$userstatus=1;
$docstatus=1;

$query=mysqli_query($con,"insert into
appointment(doctorSpecialization,doctorId,userId,consultancyFees,appointmentDate,appointmentTime,userStatus,doctorStatus)
values('$specilization','$doctorid','$userid','$fees','$appdate','$time','$userstatus','$docstatus')");

if($query)
{
echo "<script>alert('Your appointment successfully booked');</script>";
}
}
?>
```



View medical history

```
<?php
session_start();
error_reporting(0);
include('include/config.php');
include('include/checklogin.php');
check_login();
if(isset($_POST['submit']))
{
    $vid=$_GET['viewid'];
    $bp=$_POST['bp'];
    $bs=$_POST['bs'];
    $weight=$_POST['weight'];
    $temp=$_POST['temp'];
    $pres=$_POST['pres'];

    $query.=mysqli_query($con, "insert
tblmedicalhistory(PatientID,BloodPressure,BloodSugar,Weight,Temperature,MedicalPres)value('$vid','$b
p','$bs','$weight','$temp','$pres')");

    if ($query) {
        echo '<script>alert("Medicle history has been added.")</script>';
        echo "<script>window.location.href ='manage-patient.php'</script>";
    }
else
```



```
{  
    echo '<script>alert("Something Went Wrong. Please try again")</script>';  
}  
}  
?>
```