

Online Hospital Management System

Thesis Report



Inspiring Excellence

School of Engineering and Computer Science

BRAC University

Conducted by:

Md. Golam Kibria Ripan

ID: 07310069

Former Advisor:

Abu Mohammad Hammad Ali

Current Advisor:

Mr. Moin Mostakim

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Declaration

I hereby declare that this is my own work. Materials of work found by other researchers are mentioned by reference. This Thesis, neither in whole nor in part, has been previously submitted for any degree.

■

Mr. Moin Mostakim
Advisor

Md. Golam Kibria Ripan
Conductor

Acknowledgement

It is an honor for me to thank all those people who made this thesis possible. I want to thank my advisor Abu Muhammad Hammad Ali and co-advisor Mohammad Abdur Rahman Adnan. This would not be possible without their help and support.

I also want to thank all my faculties and friends for their constant help throughout the whole time. I could not have done it without their help.

I want to thank Allah for helping me to complete this work in every single step.

Abstract:

Our main focus is design a unique Hospital Management System that will improve hospital experience for both patients and the hospital authorities. The whole system will run on internet. The system is written in PHP, java script, jQuery, HTML and CSS. Users will have the felicity to log in from any place with internet connection. After that they will be able to various tasks that are designed for them. Users are categorized in three groups :(Management, Patient and Doctor). The primary target is to focus on every user who can get our service and get benefitted. It can be turned into a paid system only for doctors. Where the doctors can get additional cloud storage on payment. A doctor can have different types of patient and the number of patients also vary from doctor to doctor. A doctor can have various number of patients. We can assume that doctors will need different amount of cloud storage. We can allocate a fixed cloud storage for each doctors. They can ask for extra storage according their demand and they will be charged for their demand. We can make various package and assign various cost. The patients will have some allocated space which they can use to keep their information. As the patient only needs storage for only themselves they can use this as a free user. This will make the system useful and more convenient for everyone.

Keeping the goal in mind the system we developed works as a social network where information's are more close and relevant for every user.

This report contains the full details of the system and its functionality in details.

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Introduction:

Online hospital management system: A unique cloud based hospital management system for both patients and hospital stuffs (Doctors, Management). The primary target of this design is to make hospital experience better than we currently have. Hospital is a place where no one willingly wants to visit but there are times when we need to. The old system of hospitals are not very user friendly. The first big stem is waiting in the queue for long hours. There are lots of other problems that makes your hospital experience bad. Our main focus is to make peoples life easier in the hour of need. We are working to design such a system that will reduce a lot of paperwork and save peoples time.

Existing software: You will find hospital management system software in various hospitals in our country. They have great features to help the hospital but that does not allow the patients to manage their own data. This is what gave us the initial motivation to build a system where the system will work for all.

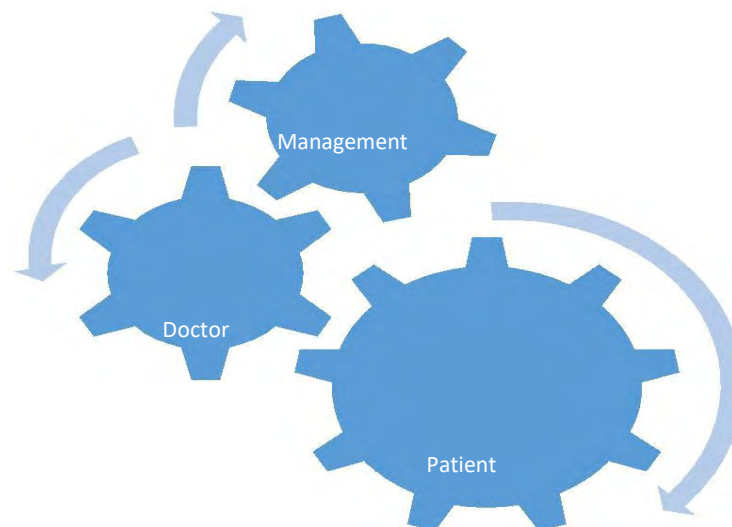
To overcome those limitation we are trying to build a social networking like site for hospitals that will help everyone working in the hospital and their patients.

Let's discuss about the system in details and see how it will help us. There are no such things that comes out without any limitations but we focused to overcome the best we could do. Our main focus was to determine the features for the patients. They are the large community of this system and they deserve to get the most out of this system. There is no doubt that our existing systems does not provide us the facility to check for our information related to our hospital documents and other important documents for example prescriptions and test reports. If this documents are close to us then we can at least be in some peace. We no longer have to worry about carrying those reports and of course it will help us the best in terms of losing those precious documents and get into trouble. The relief will be huge and so will be the benefit. Hopefully this will give us the benefit that we are expecting.

Motivation:

We do not usually visit hospitals unless we need to but this visit does not always gives us good experience. We face various problems there. There are automated hospital management system but they do not provide any functionality for us.

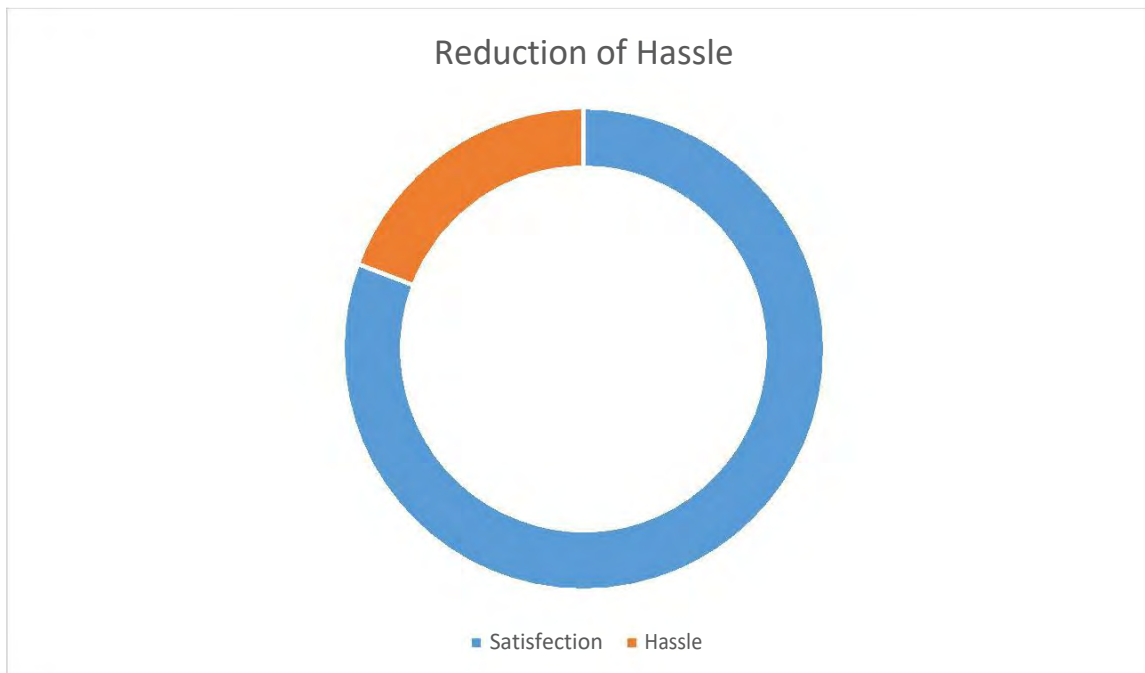
Even the doctors do not have access to their patient's data while they are at home. It will be great for the patients to have an application that will keep them close to their personal data like: prescriptions, test reports and other important materials. Patients will be able to browse through all the doctors available and ask for appointment for their desired doctor. A doctor will also experience the similar benefits. This will reduce a lot of paper works and make things easy for everyone associated with it. I have some personal experience visiting the hospital and I also have gathered experience from other people by asking them and observing them for some time. People experience their worst nightmare while they need to visit the hospital. No body visits the hospital unless it is extremely necessary. People get mad but they do not have anything to do then. This gave me the perfect motivation to build something for them and offer them some help at their most needed time. I am confident that this product can and will help them.



The complete system with every user group can make this happen.

Background Analysis:

Various management program for management are present out there but there any not too many which provides the patients any functionality. The hospital system has been automated but the benefit is not for all. In such a situation I have figured out that there should be something for the patients. Some simple features for checking appointment, asking for appointment, prescription and test reports can reduce the hassle up to 70-80%. Because those are the sector where we face a lot of trouble and can find a way out. So this will allow us something that we were waiting for so long. The world is moving to internet so this is the right time to think about this. I have checked some hospital management system on internet and some local programs that the hospital stuffs are using near me. They are also very well designed and have rich features too but nothing for the patients to be happy about is there. If we compare the benefits and the satisfaction form every point of view then we cannot conclude things beneficial for all. If a system does not provide help for every user group then it cannot be perfect system. We came out a long way with maximizing benefit for all. Still there are a lot of things that can be added but at this point this is the most we can expect.



System Design:

▶ **Login:**

Same page for every group of user:



Figure: Login Page

A simple login page for all users where users need to select their desired category to log in. After providing the proper user name and password you will be able to log in and enjoy all those features that are designed for you. This is a single interface for all groups of people associated with the system.

User Groups:

There are three categories for users. The features will vary depending on your user type. You will be able to perform certain task in a category which may not be necessary for other categories.

1. Management:

Management has the power to create user profile both for patients and doctors. They will be responsible for approving appointments and monitor through pending test reports. They will have the most important things to do. As many important things will depend on their action.

2. Patient:

Patients are normal users like us. We will be able to browse through available doctors and ask for appointments. We can also check our previous history. The patient's functionality is limited based on their need. They will only be able to change their personal information and other things. Obviously they can look for their desired doctors to request an appointment.

3. Doctor:

Doctors can check appointments and also set appointment by their own. They can start prescribing their patients by clicking the appointment list. It will directly lean them for the prescription page. The prescription page has a lot of automated features for the doctor to set things and assign to their patients. Every field that is necessary for a doctor to make a perfect prescription is available. Which will obviously reduce the workload of doctors and they can give proper time to patients. There will be few clicks for them to make a proper prescriptions.

Management Features:

▶ Add Patient

The screenshot shows a web interface for adding a patient. At the top, there is a navigation bar with five items: 'Add Patient' (highlighted), 'Add Doctor', 'Add Appointment', 'Appointment Request', and 'Pending Tests'. Below the navigation bar is a form with the following fields:

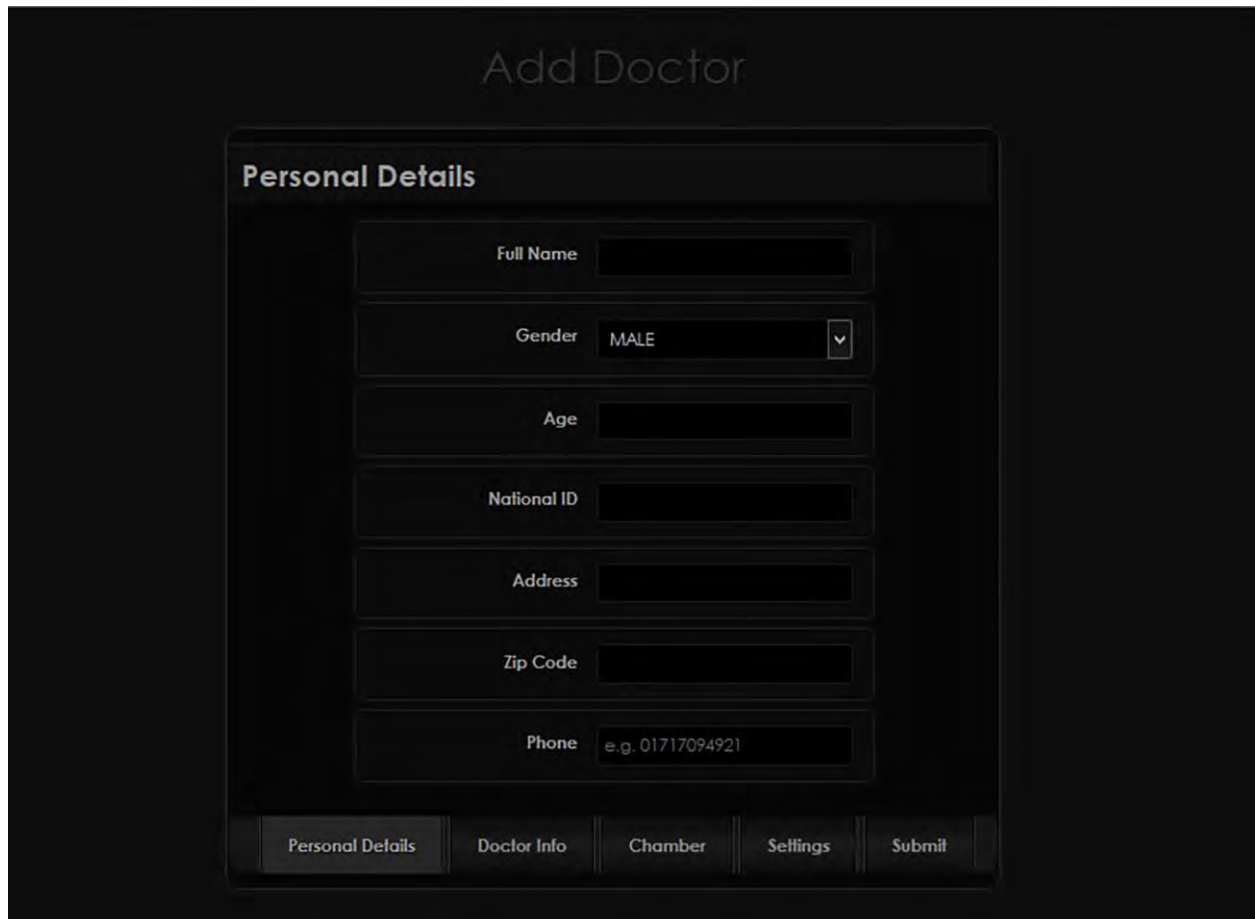
- Patient's Name: A text input field.
- Patient's Gender: A dropdown menu with 'Male' selected.
- Patient's Age: A text input field.
- Patient's Address: A text input field.
- Patient's User Name: A text input field.
- Patient's Password: A text input field.
- Patient's Phone: A text input field.

An 'Add Patient' button is located at the bottom right of the form.

Figure: Management adding patient

Management will add patients to the database by this page. They have to take full details of the patient and then add their name, gender, age, address, set user name and password and finally take phone number. Phone number is the tracking key for the user. It has been assigned as the primary key. The responsibility of management is always high. They have to make sure that they enter the every field correctly so the patient does not get into any trouble. If they make any mistake then it will become hard for us to reach our goal. They need to be very cautious specially while inserting the age and phone number. The phone number has other importance as it will be the identity of all the users associated with the system.

▶ Add Doctor

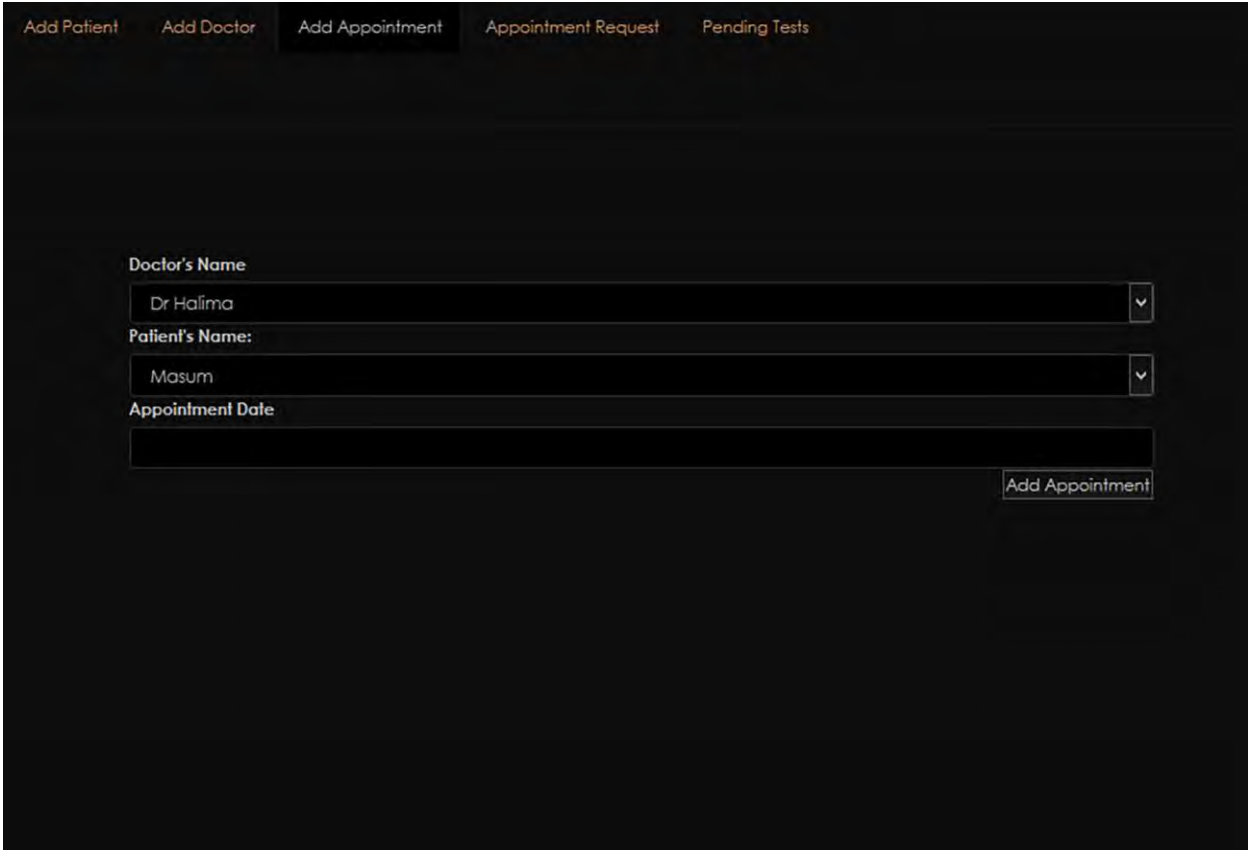


The screenshot displays a web interface for adding a doctor. The main heading is "Add Doctor". Below it, a form titled "Personal Details" is shown. The form contains several input fields: "Full Name", "Gender" (with a dropdown menu currently set to "MALE"), "Age", "National ID", "Address", "Zip Code", and "Phone" (with a placeholder example "e.g. 01717094921"). At the bottom of the form, there are five tabs: "Personal Details", "Doctor Info", "Chamber", "Settings", and "Submit". The "Personal Details" tab is currently selected and highlighted.

Figure: Management adding doctor

This is another important responsibility for the management. They have to add doctor account in details. There is various things for a doctor. Under personal details, doctor information, chamber information, settings there are several details for the doctor to be added. After successful insertion of a doctor the management can assign them patients and appoint them for requests. All those information from every tab needs to be inserted carefully as it will show up with the doctors details. If they insert less information then the patients will not be able to see all information of the doctor. This can lead to a situation where the system may not provide the promised benefit for us. So the management needs to be careful about this.

▶ Add appointment



The screenshot shows a web interface for adding an appointment. At the top, there is a navigation bar with five tabs: 'Add Patient', 'Add Doctor', 'Add Appointment' (which is highlighted), 'Appointment Request', and 'Pending Tests'. Below the navigation bar, the form contains three dropdown menus. The first is labeled 'Doctor's Name' and has 'Dr Halima' selected. The second is labeled 'Patient's Name:' and has 'Masum' selected. The third is labeled 'Appointment Date' and is currently empty. To the right of the date field is a button labeled 'Add Appointment'.

Figure: Management adding appointment

Management can manually set an appointment for any user, if they ask so. They will have to select the doctor's name, patients name and date to add an appointment. This will add appointment for the doctor and patient both. The appointment section also have great importance. This gives the power for all to save time and reduce hassle. A patient can only ask for appointment but the management needs to set the appointment for them. The management has some important duty here. They have to check whether the doctor is free or not. This will reduce the chance of getting multiple appointment for one doctor at a time. The doctors can also set appointment for them when they need to. This will be directly assigned for them and the management will not have anything to do with this.

▶ Appointment request

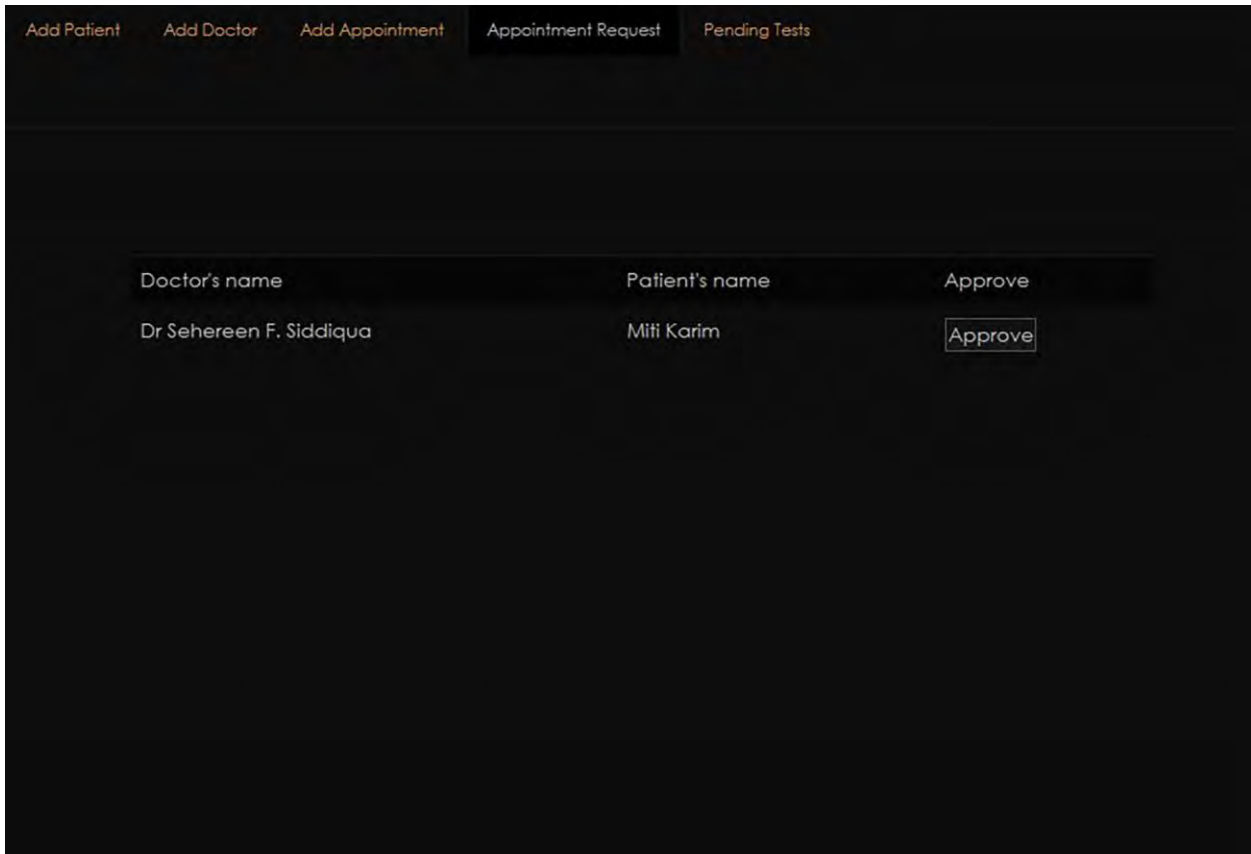


Figure: Management approving appointments

This is another very important responsibility for the management to approve appointments. Patients can request for an appointment form home but to get that appointment management has to approve it. They will find pending appointments and depending on the availability of doctors they can set those appointments or discard them. All those pending appointments appear here for the management and they can take appropriate actions. This will be the first thing for the management to check at the beginning of the day and take proper actions. After their action the people associated with it will be notified. Both party doctor and patient will get information about their appointment after it is set. This proves the importance of this step. Those appointments that are directly set by doctors do not require any of this step to set those appointments.

▶ Pending Tests

Doctor's name	Patient's name	Test name	Mark as Tested
Dr Halim	Nahid	KUB	<input type="button" value="DONE"/>

Figure: Pending tests on management page

Management will see pending tests that are assigned to patients by doctors. They need to complete those tests and report to those patients. Patients will also see their tests pending until management clears it. This will appear based on time on the management profile. They will get a healthy queue of tests that will allow them proper ordering of tests without maintaining any extra queue or something else. This is also beneficial for us and the management too. Patients can take tests and go home. Their test reports will be available for them online as they are done. While checking for the pending tests they will be able to track the change and see test results.

Patient Features:

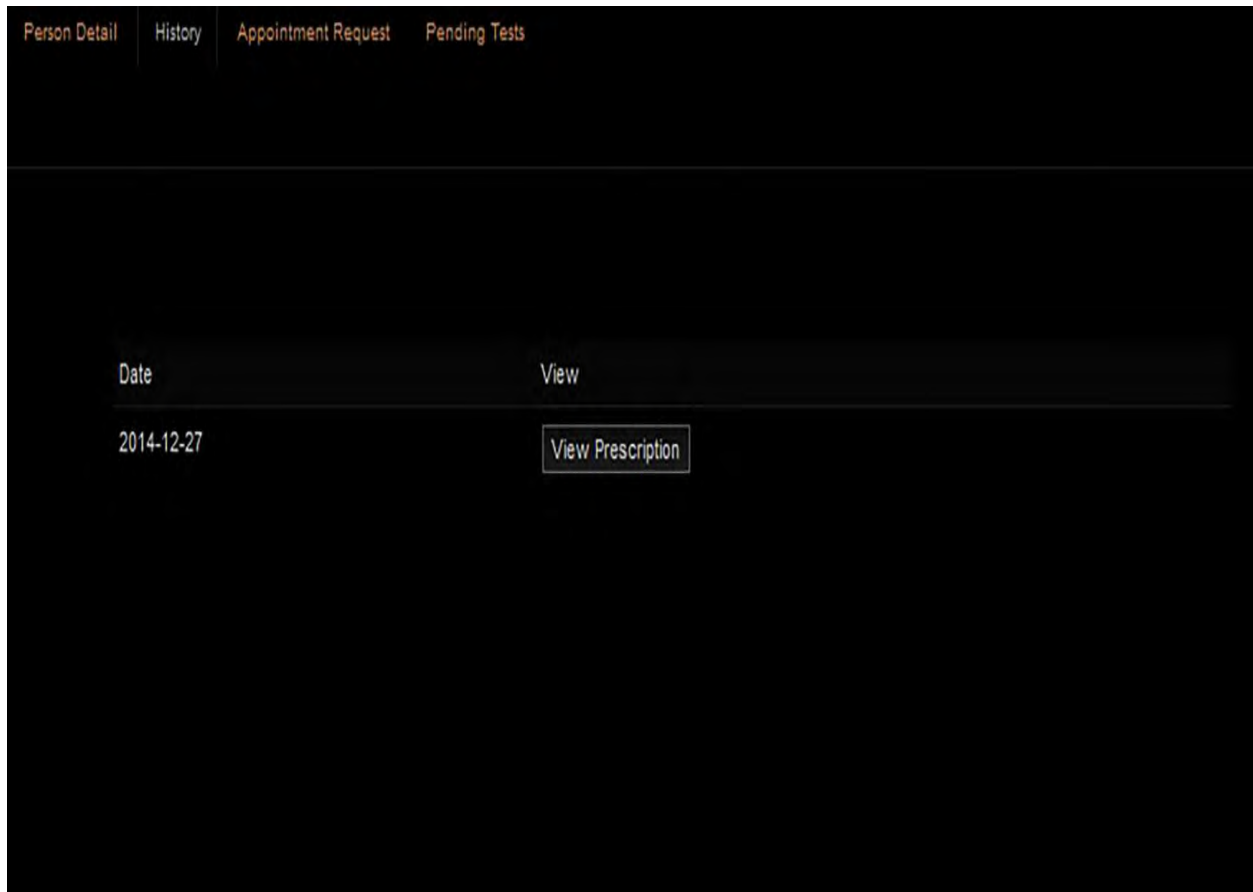
▶ Personal details.

Patient's name	Patient's Age	Patient's Gender	Patient's Address	Patient's username	Patient's password
Nahid	27	male	Nikunja	nhd	123

Figure: Patients personal details

After logging in patients will see a brief description of themselves. There will appear their name, age, gender, address, username and password. Every single important details that is necessary will be there for them. This is just the profile page for a patient. They do not many actions to take from here but they can check and change their information in this page.

▶ History.



Date	View
2014-12-27	View Prescription

Figure: Patient history

In the history section of the patient page they will be able to check their previous prescriptions if they have one. This will come handy for a lot of people. It is very common for us to lose prescriptions all the time. Rather than the profile page history contains most important things for a patient. They can check their prescriptions from a list where prescriptions will appear by date they were assigned to them. We will be able to check our old prescriptions or new prescriptions whenever we like to do that. This is something that brings you the opportunity to stay close with every information that we need to tackle our disease and disaster.

▶ Appointment Request.

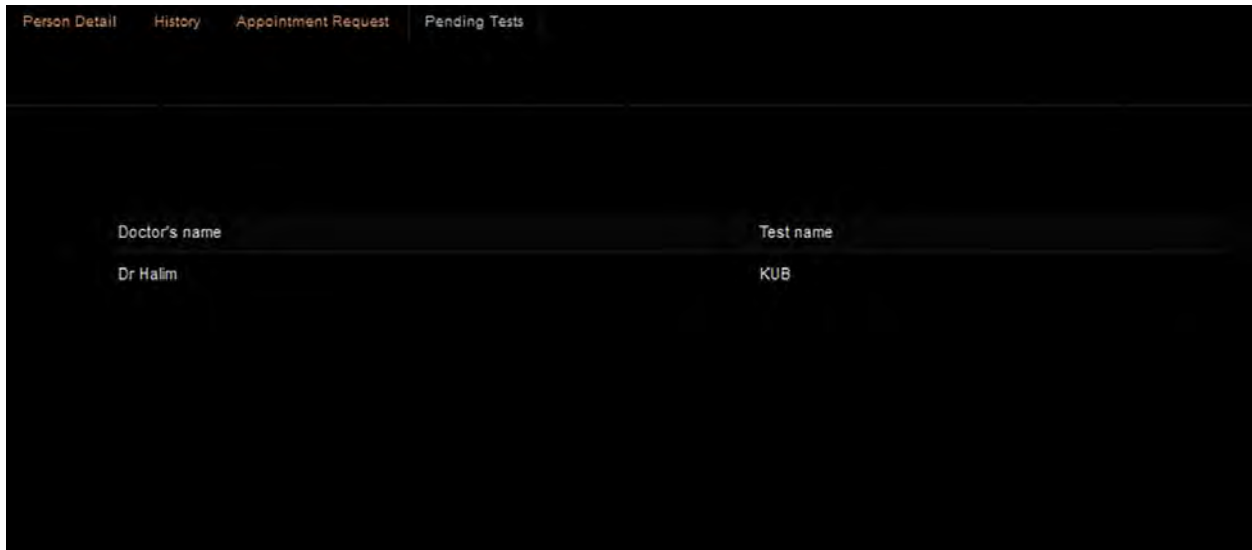


The screenshot shows a web interface for an appointment request. At the top, there is a navigation bar with four items: "Person Detail", "History", "Appointment Request", and "Pending Tests". Below this, the main content area contains a form with two input fields. The first field is labeled "Doctor's Code" and contains the text "Dr Badrul Haque". The second field is labeled "Appointment Date" and is currently empty. To the right of the "Appointment Date" field is a button labeled "Add Appointment".

Figure: Patient appointment request

In this section a patient will be able to browse through all the doctors available and ask for appointment for their desired doctor. They will have to wait for confirmation from the management when they approve the appointment request. Another important feature for a patient to set appointment with their desired doctors from sitting at home. We cannot think of anything yet like this. We can now ask for appointments over phone but it is not as convenient as this where you can get your desired things with just several clicks and without any waiting.

▶ Pending Tests.



Doctor's name	Test name
Dr Halim	KUB

Figure: Patient pending tests

Patient will be able to follow their tests that are pending. It will disappear after the test is complete. This will allow them to know their tests when complete. They will no longer need to go or call someone to know whether their tests are complete or not. The name of the doctor who assigned the test and the test name will appear here. This is also something that can make our hospital experience better than it is now. So we can expect that this will help us a lot from various direction.

Doctor Feature:

► Appointment.



Figure: Doctor Appointment page

After logging in doctors will directly see their appointments. This will help them to know what they have to do. By clicking on the patients name they will be able to prescribe them and assign them test or follow up. A complete page of actions that a doctor needs to take.

Other features on doctor's page:



Figure: Doctor full features

▶ New appointment.



Figure: Appointment for doctors

A doctor will also be able to set appointment by himself like management. If a doctor sets appointment by himself then it will not remain pending. It does not have to do anything with the management to approve or anything else. This will add the appointment straight forward.

▶ OT Schedule.



Figure: Doctor's OT schedule

In this section a doctor will be able to see his upcoming operation lists. Management will assign those operation for them and they can check for their schedule any time they want to do that. This will help doctors manage their time well. Doctors will easily find out when they are free and when they have work.

▶ Patient History.



Figure: Patient history on doctor page

Another very important feature for a doctor. They can check their appointments and other patients which they have already visited. A doctor can select a date and check for the number of patients to him on that day. This will give them better tracking chances if they need so.

▶ Settings.



Figure: Settings doctor page

Management will assign user name and password for a doctor. A doctor will be able to change his password under this setting section. This gives them the chance to choose a new password whenever they need one.

Programming Languages:

▶ PHP:

PHP is a server-side scripting language designed for web development but also used as a general-purpose programming language.

▶ jQuery:

jQuery is a cross-platform JavaScript library designed to simplify the client-side scripting of HTML. Used by over 60% of the 10,000 most visited websites.

▶ JavaScript

JavaScript is a dynamic computer programming language. It is most commonly used as part of web browsers.

▶ CSS

Cascading Style Sheets (**CSS**) is a style sheet language used for describing the look and formatting of a document written in a markup language.

▶ HTML

HTML or Hyper Text Markup Language is the standard markup language used to create Web pages. **HTML** is written in the form of **HTML** elements consisting of tags enclosed in angle brackets (like **<html>**).

Tools:

Wamp Server:



Figure: Wamp Server

This tool allow you to run a server on your computer. A website needs to be hosted on the webserver for everyone to access. This tool allows the user to simply run this and enjoy local web pages similar to those on the internet.

Without buying a domain on the internet this gives you the exact same power to check and manage your work as you can get the exact same output from this tool. This makes a proper field for you to test and manage the project while building it without any extra cost or anything. When the project is complete then you can take it to your domain and release it to the world. The world will see a bug free and tested product for them and this makes your life easy. PHP developers around the world are very fond of this local server and it is also highly recommended for other PHP developers. This are advices that comes from top PHP developers.

NetBeans:

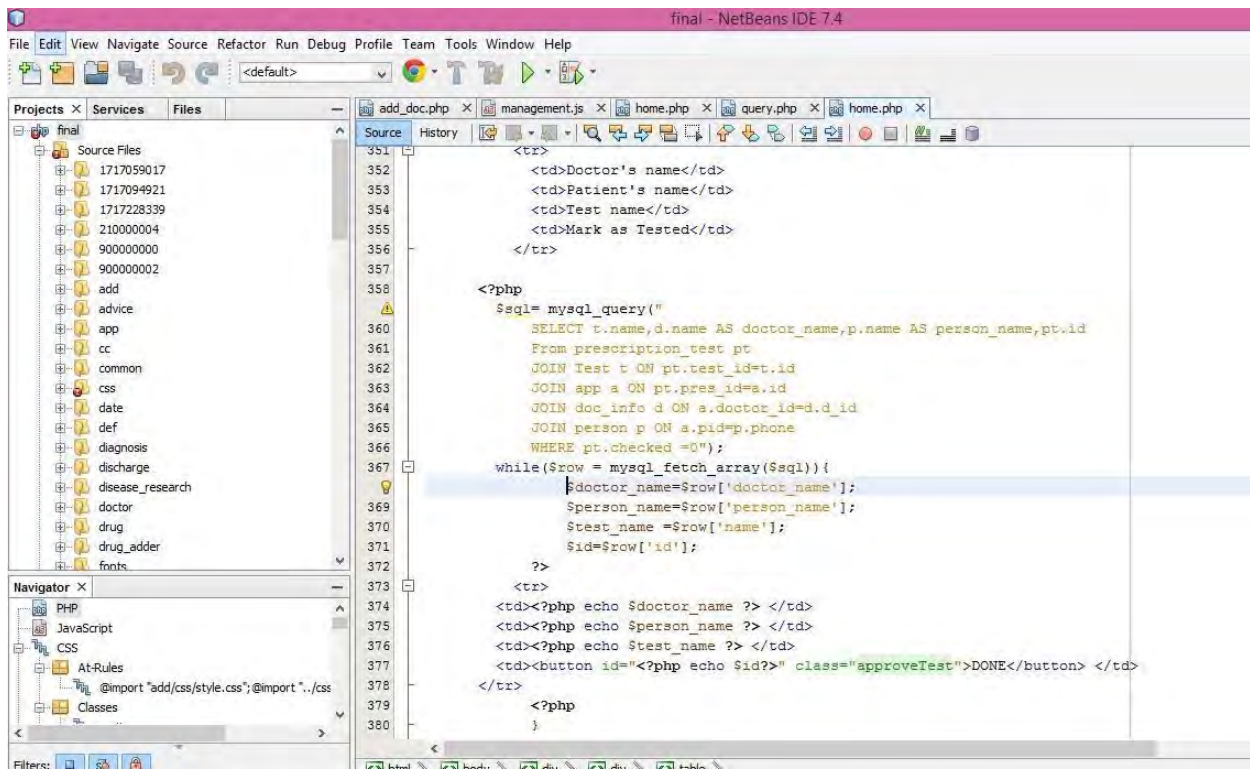


Figure: Project on NetBeans

A very strong IDE for coding. This allows you to manage your projects better. Along with the opportunity to write code in several language this helps by its built in library. Excellent user interface makes things easier for a user. There are several IDE for us to write code. Many people use notepad to write code. I have also used notepad to work with my project and to manage the whole project this was a perfect tool for me. This helped me to manage the whole project better and made things easy for me. This can add directory and can manage a project better for us. Many people prefer this tool as the community behind it is also very big and strong. You can expect any kind of help from them as you need them. This is actually the big benefit of using something like NetBeans.

Firebug on Firefox:



Figure: Firebug to check code on Firefox

This is a very important plugin for web development. This plugin is available for several browser. This allows you to debug your HTML, CSS, Java Script code. Sometimes it becomes very hard to find a bug but with the help of firebug things are very easy to deal with now. This is an excellent plugin for any developer who is developing for web. This allows the full features and functionality for the developers to try and catch those errors that they made. This gives them the freedom to detect and remove bug from their system that they are building for the web. There is a lot of recommendation from a lot of people who are developing for the web. From those expert advice I choose this plugin and it helped me a lot to make the final product.

Features:

Firebug makes changes immediately and gives constant feedback to the user. All editors in Firebug support autocomplete.

The Firebug command line accepts commands written in JavaScript. The result of executing each command is displayed in the console, appearing as hyperlinks. The Firebug application contains multiple windows, splitting related features to a

common window. Firebug also allows users to view the download time for individual files. It separates different types of objects, such as JavaScript files and images, and can determine which files are loaded from a browser's cache. Firebug also features the ability to examine HTTP headers and time stamps relative to when an HTTP request is made. Its net panel can monitor URLs that the browser requests, such as external CSS, JavaScript, and image files.

HTML and CSS:

The HTML and CSS tools allow for the inspection and editing of HTML and CSS elements on a web page. Later versions of Firebug allow users to see live changes to the CSS. Visualization of CSS elements is shown while inspecting HTML elements. The Firebug layout tab is used to display and manipulate CSS property values. Furthermore, users can click on any visible HTML elements on a web page to access its CSS property values.

JavaScript Console:

Firebug's script tab enables users to set breakpoints and step through lines of code. Additionally, Firebug can navigate directly to a line of JavaScript code, watch expressions, call stacks, and launch the debugger in the event an error occurs during execution. Firebug can also log errors. Logging uses a Firebug JavaScript API. Firebug's JavaScript panel can log errors, profile function calls, and enable the developer to run arbitrary JavaScript. Firebug allows users to run JavaScript code through the command line and allows the user to log errors that occur in the JavaScript, CSS, and XML. Firebug provides a separate text editor to modify the JavaScript and see immediate results on the user's browser.

As provided in an update, the JavaScript command line features an autocomplete function. The text editor also provides the ability to write full functions. Firebug requires a user to refresh a web page in the event of a crash.

Extensions:

Many extensions have been made to enhance Firebug. Since Firebug is open source, users can contribute their own extensions to the Firebug community.

FlashFirebug:

FlashFirebug is a paid Firebug extension that helps Flash and Flex developers debug SWF files on the web. FlashFirebug was developed by O-Minds and is licensed under the GPLv3.

The extension displays textual Output from trace () commands within the SWF movie, a Display Tree with the hierarchy of display objects and their properties, viewers for AMF and Shared Objects, and a tool to modify the 3D transformation of any display object on the stage.

Database:

Snap shoot of the database:

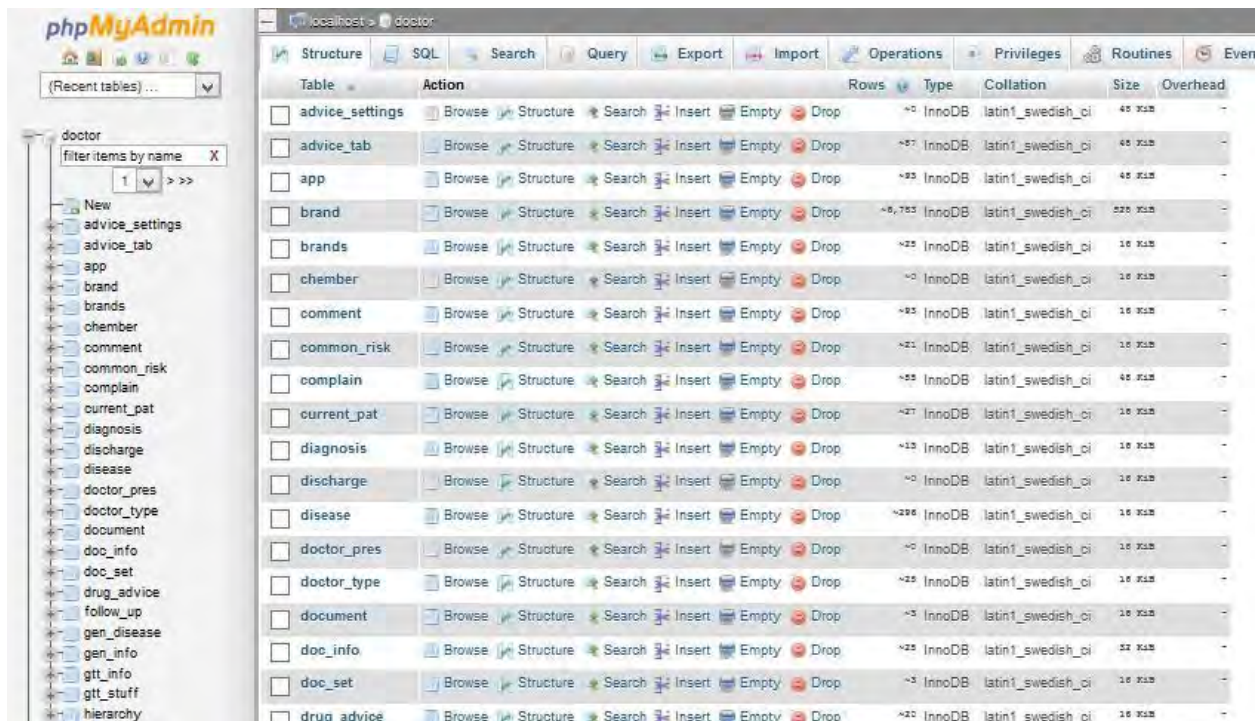


Figure: Database

The database has a lot of tables and other relations. Person's mobile number is used as the primary key. As the mobile number is supposed to be unique so there will not be any clash between any two people on the database.

MySQL workbench was used to design most part of the database. This tool has a very nice Graphical User Interface to help people build their databases.

A database management system (DBMS) is a computer software application that interacts with the user, other applications, and the database itself to capture and analyze data. A general-purpose DBMS is designed to allow the definition, creation, querying, update, and administration of databases. Well-known DBMSs include MySQL, PostgreSQL, MongoDB, Microsoft SQL Server, Oracle, Sybase, SAP HANA, and IBM DB2. A database is not generally portable across different DBMSs, but different DBMS can interoperate by using standards such as SQL and ODBC or JDBC to allow a single application to work with more than one DBMS. Database management systems are often classified according to the database model that they support; the most popular database systems since the 1980s have all supported the relational model as represented by the SQL language. Sometimes a DBMS is loosely referred to as a 'database'.

Analysis:

Benefit for Doctors:

- ▶ They will be able to check appointment any time and work accordingly.
- ▶ They will have long history of their patients.
- ▶ Will not be dependent on patient for any information after the first visit.
- ▶ Reduce paper work and working time.

The doctor patient relationship that we know is going to change dramatically with this simple step. People will not be able to chat with a doctor as they can with their friends with many web applications and platforms but the distance between the will certainly come much shorter. While the medical ethics will be very important factor. The doctor–patient relationship is central to the practice of healthcare and is essential for the delivery of high-quality health care in the diagnosis and treatment of disease. The doctor–patient relationship forms one of the foundations of contemporary medical ethics. Most universities teach students from the beginning, even before they set foot in hospitals, to maintain a professional rapport with patients, uphold patients’ dignity, and respect their privacy.

Benefit for Patient:

- ▶ No waiting no queue.
- ▶ Will be able to perform activities from home.
- ▶ Can check their details, prescriptions and test reports any time.

Importance:

A patient must have confidence in the competence of their physician and must feel that they can confide in him or her. For most physicians, the establishment of good rapport with a patient is important. Some medical specialties, such as psychiatry and family medicine, emphasize the physician–patient relationship more than others, such as pathology or radiology.

The quality of the patient–physician relationship is important to both parties. The better the relationship in terms of mutual respect, knowledge, trust, shared values and perspectives about disease and life, and time available, the better will be the amount and quality of information about the patient's disease transferred in both directions, enhancing accuracy of diagnosis and increasing the patient's knowledge about the disease. Where such a relationship is poor the physician's ability to make a full assessment is compromised and the patient is more likely to distrust the diagnosis and proposed treatment, causing decreased compliance to actually follow the medical advice. In these circumstances and also in cases where there is genuine divergence of medical opinions, a second opinion from another physician may be sought or the patient may choose to go to another physician. Additionally, the benefits of any placebo effect are also based upon the patient's subjective assessment (conscious or unconscious) of the physician's credibility.

In addition, a Canadian physician known as Sir William Osler strongly influenced the behavior of how a doctor should act during bedside with his or her patients. Osler was known as one of the "Big Four" professors at the time that the Johns Hopkins Hospital was first founded. At the Johns Hopkins Hospital, Osler had invented the clinical teaching system where he had taught medical students how to act during bedside or how to tend to the care of the patients in different departments of the hospital.

Aspects of relationship:

The following aspects of the doctor–patient relationship are the subject of commentary and discussion.

Informed consent:

The default medical practice for showing respect to patients is for the doctor to be truthful in informing the patient of their health and to be direct in asking for the patient's consent before giving treatment. Historically in many cultures there has been a shift from paternalism, the view that the "doctor always knows best," to the idea that patients must have a choice in the provision of their care and be given the right to provide informed consent to medical procedures. There can be issues with how to handle informed consent in a doctor–patient relationship; for instance, with patients who do not want to know the truth about their condition. Furthermore, there are ethical concerns regarding the use of placebo.

Shared decision making:

Health advocacy messages such as this one encourage patients to talk with their doctors about their healthcare.

Shared decision making is the idea that as a patient gives informed consent to treatment, that person also is given an opportunity to choose among the treatment options according to their own treatment goals and wishes. A practice which is an alternative to this is for the doctor to make a person's health decisions without considering that person's treatment goals or having that person's input into the decision-making process.

The spectrum of a physician's inclusion of a patient into treatment decisions is well represented in Ulrich Beck's *World at Risk*. At one end of this spectrum is Beck's Negotiated Approach to risk communication, in which the communicator maintains an open dialogue with the patient and settles on a compromise on which both patient and physician agree. A majority of physicians employ a variation of this communication model to some degree, as it is only with this technique that a doctor can maintain the open cooperation of his or her patient. At the opposite end

of this spectrum is the Technocratic Approach to risk communication, in which the physician exerts authoritarian control over the patient's treatment and pushes the patient to accept the treatment plan with which they are presented. This communication model places the physician in a position of omniscience and omnipotence over the patient and leaves little room for patient contribution to a treatment plan.

Physician superiority:

The physician may be viewed as superior to the patient simply because the physician has the knowledge and credentials and is most often the one that is on home ground.

A physician should at least be aware of these disparities in order to establish a good rapport and optimize communication with the patient. It may be further beneficial for the doctor-patient relationship to have a form of shared care with patient empowerment to take a major degree of responsibility for her or his care.

Benefiting or pleasing:

A dilemma may arise in situations where determining the most efficient treatment, or encountering avoidance of treatment, creates a disagreement between the physician and the patient, for any number of reasons. In such cases, the physician needs strategies for presenting unfavorable treatment options or unwelcome information in a way that minimizes strain on the doctor-patient relationship while benefiting the patient's overall physical health and best interests.

Formal or casual:

There may be differences in opinion between the doctors and patient in how formal or casual the doctor-patient relationship should be.

For instance, according to a Scottish study, patients want to be addressed by their first name more often than is currently the case. In this study, most of the patients either liked (223) or did not mind (175) being called by their first names. Only 77

disliked it, most of whom were aged over 65. On the other hand, most patients don't want to call the doctor by his or her first name.

Some familiarity with the doctor generally makes it easier for patients to talk about intimate issues such as sexual subjects, but for some patients, a very high degree of familiarity may make the patient reluctant to reveal such intimate issues.

Transitional care:

Transitions of patients between health care practitioners may decrease the quality of care in the time it takes to reestablish proper doctor–patient relationships. Generally, the doctor–patient relationship is facilitated by continuity of care in regard to attending personnel.

Other people present:

An example of where other people present in a doctor–patient encounter may influence their communication is one or more parents present at a minor's visit to a doctor. These may provide psychological support for the patient, but in some cases it may compromise the doctor–patient confidentiality and inhibit the patient from disclosing uncomfortable or intimate subjects.

When visiting a health provider about sexual issues, having both partners of a couple present is often necessary, and is typically a good thing, but may also prevent the disclosure of certain subjects, and, according to one report, increases the stress level.

Future Work

- ▶ Modify as a web application targeting all doctors.
- ▶ A doctor will get 250mb initial space.
- ▶ They have to pay for additional cloud storage to save details of their patients (Example: Prescriptions, Test Reports).
- ▶ A mobile application to make things easy and bring them closer.

Cloud implementation is a hard work but the benefit of it cannot be measured. We used to say that everything is moving towards internet. The time has ended for such statement. I believe that we have moved to internet completely. Every major application has something to do with cloud and there are even special versions targeted only for cloud. Every new development has some part directly related to cloud. Cloud is nothing new for us and we have already started to enjoy the fruits of cloud. Clouds can hold major data for our future use and it does not matter which device you are on right now. We did really become very device oriented and the loss of devices would mean a lot of thing for people. Now the picture is completely different. We have adapted to the new machine world where our devices are just mean of our work and clouds provide them the much needed portability.

The introduction of cloud to medical section has already become very popular in many developed countries but we are still behind on this like thousands of other sections. This will bring a new era for our medical services. We have a very different set of people in our country. Our computer knowledge is not enough. We still have a strong group of people who are very good with computers. These day are meant to change and the change will come with our hands. While the whole world is enjoying the benefits of the computer world we cannot simply sit back.

Smart phones have become a part of our lives. They provide us thousands of assistive features and we have gladly become depended on this device. Smart

phones are powered by many applications. Which are generally downloaded by users and some default applications preloaded by the company of that smartphone. An application that helps people to carry and check their complete medical record will give people more power. They will be able to check everything on the go while their ability to change or modify any data to make things up to date will always be there.

We're entering a new world of patient-centric healthcare, one in which patients can be better informed, collect endless data related to their condition, and more fully participate in medical decision making. Patients are now receiving full access to their digital personal medical records which helps in medical patient education about their condition. As a result of these changes, it's natural that patients will also want to use medical algorithms which until now had only been used by medical professionals. In any event, it will be almost impossible to exclude them from access.

Benefits to Patients Using Medical Algorithms:

There are potential benefits for the patient. Algorithms that collect tractable data can be valuable and are already being used for patients enrolled in clinical trials. When capturing data it is important that it be organized and used and not just simply collected as busy work. A program that analyzes and finds trends in the data is more valuable to clinicians and patients than volumes of raw data.

Algorithms can help to inform patients so that they can make better decisions and give informed consent. They can get a trusted second opinion in seconds or find out why they need to be treated. Algorithms can also give patients a higher level of comfort as they take charge of their own healthcare. Armed with more knowledge, they may also gain a sense of control that will help them better cope with illness.

Risks to Patients Using Medical Algorithms:

On the other hand, there are risks involved with patients using medical algorithms. The patient may select an inappropriate algorithm or become fixated on an incorrect diagnosis. The patient may not have access to all of the data needed to reach a decision or the patient may misunderstand terminology. The patient may not realize that a result is absurd since he or she may not have a point of reference based on experience. The patient may overestimate the risk and suffer unnecessary distress. Some might even become suicidal.

Probably the greatest risk will be for the patient who decides to diagnose and treat herself/himself. As the old adage goes: “A person who treats himself has a fool for a physician.” Diagnosis and treatment may be delayed or the wrong treatment given, which can have serious consequences. Just because you can do something doesn’t mean that you should.

One unknown is how healthcare reform may affect access to healthcare. Many small hospitals may shut down as healthcare economics change. Access to qualified specialists may be restricted. Medical algorithms might be the only evidence-based medical resources that some people will have access to, especially in rural areas.

Patients should collaborate with their personal clinicians to select algorithms that are appropriate to their condition. The clinician can explain to the patient why the algorithm is useful and how the results are used. In turn, the patient has someone to discuss results with, answer questions, and interpret findings.

Limitations:

Due to certain limitations all the user signup process will be done by the managements. Signup from home will be available soon. Users will be restricted from creating multiple user accounts. This can be done by taking their phone number while registering. The number will be verified after that so it becomes clear that whether that number belongs to him or not. Failing to verify the number will result in failed registration. This will help reducing unwanted pressure on the database and server.

There will be strict restriction for people while they sign up. They must provide their national identification number. This will make sure a person does not make any unusual accounts. Every national Identification number will be checked manually and then those accounts will be activated. Multiple accounts are not possible at all. Even for doctors they will not be able to sign up as patients. This will also help to create a database for people with their complete disease history and also their family records.

Family history of diseases and sickness are very important but it is not always available for the doctor. When something like this will be available for the doctors they are going to love it. The value of data is appreciated by everyone from every work sector. They are making our lives easier every day.

Another important aspect is the privacy of people. People wants to have privacy and this idea is respected worldwide. Our privacy is also considered as a very fundamental human right. The availability of data does not mean that everyone will be able to see other people's data. Only registered physicians will be able to check certain data under strict conditions. If the conditions are not met then they will not be allowed to check the data on any user.

There is a plan for premium user with some charges. This feature will enable priority service and other extraordinary services like live webcam sessions with desired doctors at emergency. People will find this very beneficial at the end of the day.

Conclusion:

This was an excellent project to work on and I have learned a lot of things to complete this project. A lot of new idea and several problems that may happen to a system like this is quite clear for me now. I am not going to claim that this program offers you 100% functionality. It has mind blowing features but while working I have figured out how we can make this more beneficial for us. I have enjoyed this project and I want to keep working on it to give it a better shape. I believe that I can do make this different in a way that people will love the final output. Our creativity makes us different from every other species on this planet. We build tools and machines to make our lives easy and more comfortable. This has begun at a very early age and since then we have never stopped to build or design new things. Due to this creativity our planet has become very something totally different than our ancestors experienced. AI – artificial intelligence is an old concept but our current approach has taken it to a different height. We have been able to build things that has changed the entire thinking process of human civilization. Medical technology has also improved along with other sectors of science. Once people used to die of different diseases but we have overcome those by our advancement in various sectors. We are now able to perform surgery that people could not even think about a decade ago. Automation in medical sector is still quite new but the question is for how long this will remain new. Researches are advancing to perform diagnosis and prescribe medicine for people without a doctor. Of course there are doctors for supervisions. We are building intelligent tools to take things at a new height. This project is a tiny step towards the vast possibilities that science and computers can make to the medical sector. We have different approaches towards new things. Some people jump towards new things while others just sit back. This has been the case for human and it will continue. But new tools are coming every now and then. Science will keep on its journey and so will our human society. I am very proud to be a part of this work and very hopeful that someday this will be the reality of your hospital experience.

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