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ONLINE HEALTH CONSULTING AND MANAGEMENT SYSTEM

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Abstract: During the last decades, technology is increasing day by day. The entire world is using technology and everyone is finding shortcuts for everything. As we know the total world is facing a pandemic situation. Considering today's world situation and technology, we created a health care management website for each and every person on the website where the patient can log in with the help of login credentials which we provide who are members of our portal. After login, the user can visit the doctors virtually and can take precautions and precipitation about the problem. Here a middle means a third person role takes place who take care of each and every person detail and the administrator make the appointments at a particular time. The administrator's role is to make schedules and take care of everything on the website. In critical situations we provide some options to give quick response. With the help of this website, people can save time who are busy with their schedules and easy to meet doctors, saving money and quick response from the doctors. The main aim of this one is how the service is to provide to the people virtually and the doctor's delivery solution for all the problems.

IndexTerms *– Hospital-management, Database, Webpage, Interface,*

Introduction

Health care is one of all the fastest-growing industries everywhere the globe. Before a previous couple of years, medical appointments were sometimes taken on phone calls or by visiting the hospitals in the flesh. This method required the involvement of people therefore, the flexibility to take a rendezvous was restricted to the provision of schedulers, phone lines or the physical presence of an individual. With the expansion of your time, everyone demanded unaltered and economical treatment delivery as a result of manual appointments (that need the physical presence of each individuals) associate degreed long waiting lines have shaped an irritating state of affairs for the tending institutions. So, it created a necessity for such associate degree integrated health care system that would deliver seamless care to each outpatient likewise as inpatients. The emergence of a web appointment system offered unaltered and economical access to health care services. Therefore, for hospitals and different medical societies, on-line appointment booking contains a great importance and a theme of interest.

Booking appointments on-line has become a new trend within the past few years and examine jointly of the key processes at intervals health care trade. We thought of coming up with system as a trade-off or a compromise between a doctor and patient's waiting times. Patients World Health Organization get late for the appointments or World Health Organization fail to return becomes the rationale for the underutilization of a doctor's time. Idle time and underutilization of doctor's time are resulted from gaps at intervals appointment times (Bailey, 1954). With the growing population want for a lot of economical ways that to access a medical treatment is also growing. Through an internet appointment an online system, a user gets access to the doctor's digital webpage and may digital a rendezvous with online also can. Patient/user also can provide extra anamnesis before, giving adequate time to the doctor to arrange the mandatory information for consultation.

Meanwhile approach, online appointment programming systems are helping doctors and thus the patients and introducing the healthcare delivery financially. Nowadays there are unit many forms of on-line appointment tools offered within the market that are in to set up and not an excessive amount of pricey. On-line programming system offers value-added services so long useful to the doctors and patients. It makes the patient appreciated by eliminating the trouble of long waiting times. On-line appointment systems are also obtaining in style due to its affordable accessibility.

I. Literature Review

We referred the paper **Li J, Zhang Y, Ma L, Liu X**. he said that E-consultant is the main source to solve the health problems as soon as possible

During the past years, there are many experimental studies have been conducted to their people are preferred to visit the doctor on online. Many of the workshop conducted regarding to the online hospital management more are people are visited virtually as compared to physical The main purpose of this project is to help the people to save their effective time and their cost. Online consultant will provide the affordable prices so each and every can afford to consult the doctors for their problems. Considering the to-days pandemic situation this will help the people to maintain the social distance and not to travel to visit the doctors.By Referring the paper **ICM Unlimited.** We developed some unique structure.

Here we developed by some features by referring some existing website and providing some unique qualities

They are:-

Unique points of our website

1. User friendly and responsive website.
2. Online appointment and prescription.
3. A online health consulting and management system based upon real-time data accumulation
4. Our website protect the leakage of Patient information according to the act of 1996.
5. Including a reference framework for the domain surface of a hospital consulting and Management system
6. Creating an online useful online health consulting and Management system

2.1 Waiting time

Transfer paper Fernandes et al. (1994) a waiting period as the maximum time a person waits until a selected action occurs. The waiting period was further explained because it is the time when a patient enters a clinic or service for a purpose and is touched by a doctor with a prescription in his hand. The square where we measure the other two methods where the waiting time was different ways in the past. Initially, a waiting period is a time that starts with a personal private approach to appointments and continues until that person has consulted a doctor. according to the second definition, it begins with the individual's appointment and ends with the prescribed medication and consultation with a physician. In the course of your time, long queues at medical clinics became a major problem in developing countries. at a South African health clinic, the block appointment system was introduced as a trial, where patients' waiting time was measured one week before and after the start of the appointment process, interviews were taken from the focus group, staff, and patients and from the results were found that critically ill patients. compared to patients without appointment. It must be re-established that the appointment system is not beneficial for patients who do not see a doctor or the World Health Organization taking standard medication. It was later concluded that the block selection process provides a shorter waiting period for only unhealthy patients and not for others.

2.2 Appointment Delay

Transfer paper James Duncan Davidson, Danny Coward (1999-12-17). It was said that the delay in the appointment was a major problem at the time it was established in the previous analysis that there was a rapid relationship between the delay in the appointment and the cancellation of the position. Appointment delays are defined as the time that starts once a private application for the program and ends until they see a doctor. Prolonged delays result in the cancellation of many appointments. Therefore, the most effective thank you is to measure the cancellation of the appointment period or the absence of the show to reduce the time gap between the application for appointment and the time of examination / consultation with the doctor. Reducing this gap is called open access (abbreviated as OA) or an advanced access policy that later became a popular practice and became part of more dynamic research. each positive and negative result was known to the investigators in their experiments. Some doctors favored OA and highly recommended it, while on the other hand, there were staff at the World Health Organization who disagreed and disagreed with the use of OA.

2.3 Patient Appointment Period.

In a paper by Brant H, Atherton H, Ziebland S, et al said the appointment increases day by day. Arranging for patient appointments began many years ago. The appointment system was primarily designed to reduce the physician's idle time because it was considered that the doctor's time was more important compared to the patient's waiting period. however it was later realized that the importance of reducing the patient's waiting period is as important as the physician's time. so right now while we are creating a doctor's appointment time of appointment program so the patient's waiting time both of these things are given equal value. More patient programs include improving quality health services, reducing doctors and nurses' downtime and reducing the patient's waiting time.

2.4 OPERATING TECHNOLOGIES: -

The aim of this project is to create an Internet Appointment and Data Management System. it is important for the user to understand how this application works and to know the technology that is often used to perform this project. For a better understanding, all the steps are explained in detail to give a complete overview of the program.

2.4.1 Planning Languages.

In this project, PHP was chosen as the programming language on the server side and MySQL was selected as the backbone database.

HTML, CSS, and JavaScript are used for client work.

PHP:

PHP is a third-party programming language commonly used to develop dynamic web pages. It's free for everyone and we can use it everywhere on any platform like windows, mac, Linux and it's free on all platforms. php can be used in desktop applications. The reason for choosing PHP is that it will support MYSQL selected as the database for this project to store data and with the help of php we can easily represent images of pdf files developed in CSS and html pages.

HTML:

html is used to create html pages. Describes web page layout. an html page is sent to a web browser to display multimedia pages. html is used to describe text formats in title, images, video files. CSS is used to style and add extra functionality. CSS makes html web pages attractive to users.

MySQL: -

It is an open source data management system that will provide multiple user access to several databases. In simple terms a database is a large collection of data. To access data from the database we have used MySQL which aims to access data and perform tasks such as updating, deleting or editing data.

II. **Methodology**

There are three modules namely doctor module, patient module and director module. The Physician Module is used to log in to the physician and after seeing the patient appointments offered by the administrator and can go there to solve patient problems. The patient will request the appointment and can receive notifications whenever the appointment is made by the administrator. The manager plays an important role here will take care of everything and is the gateway to the patient and the manager.

The basic ER model contains known elements and clarifies the relationships between those organizations. The purpose of this drawing is not to describe any function but rather to show connection and dependence on objects. The ER diagram is drawn with "rectangular boxes" as objects and "straight lines" showing AN between these boxes. a business is a level of compliance or something that has a coherent relationship and can be easily separated from others. every organization has certain features such as name, age, address, department etc in the following diagram, patient, appointment, manager etc.

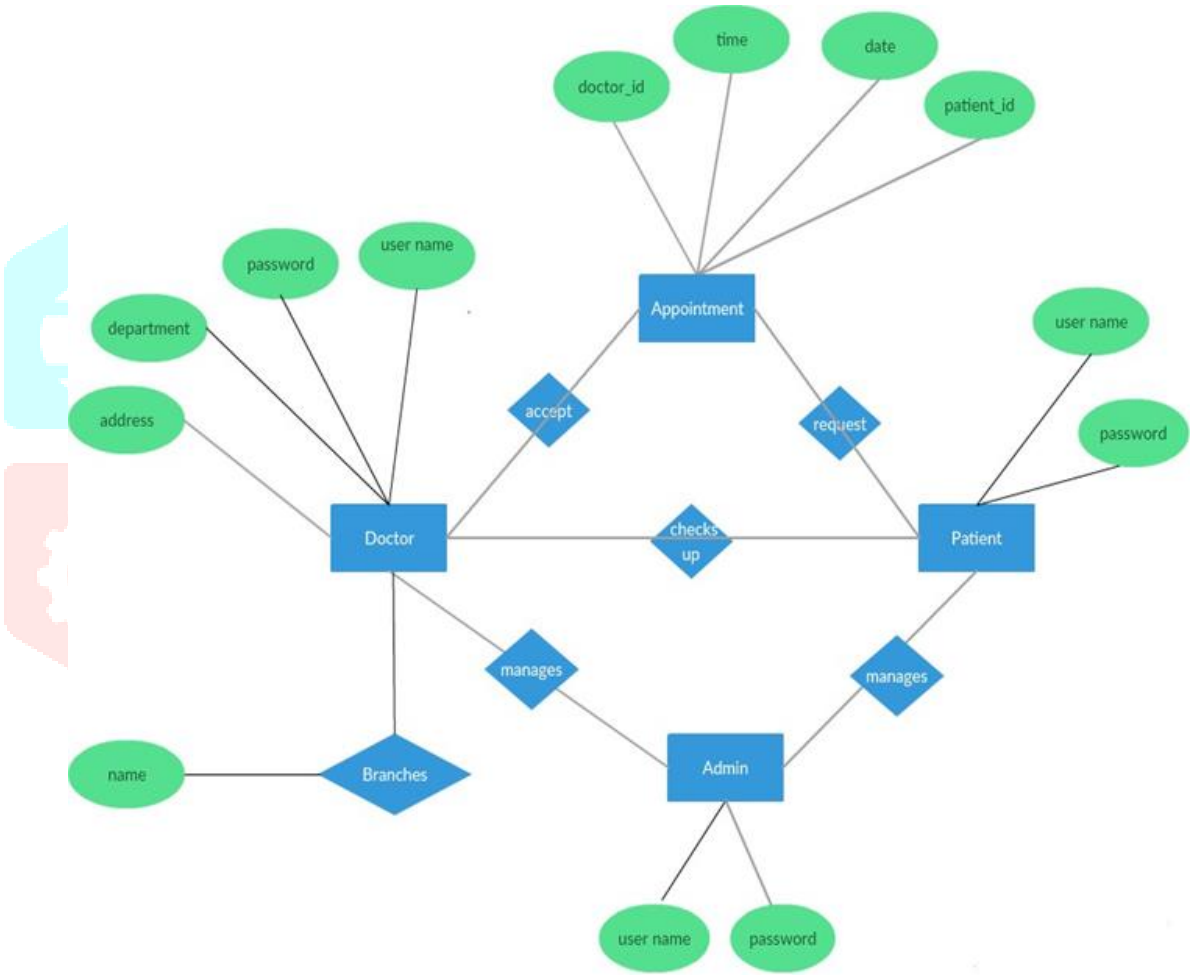
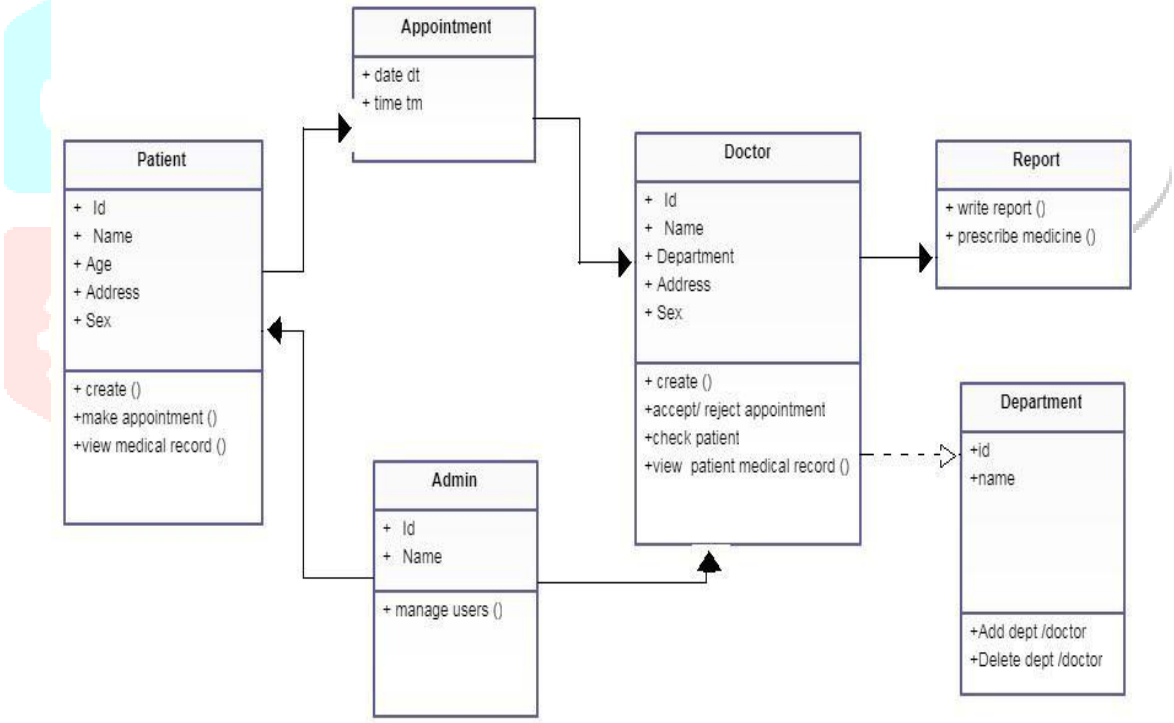


Figure 1.This ER tells the total structure of the website and how it will behave in the backend.

Class Diagram:

A class diagram is selected to specify a program component. The diagram of the section describes the classes of the program, the attributes, and the functions and relationships of the classes in the best way we would like. We can} be able to add that class drawings tend to justify the formation or operation of system application cases. Group drawings better justify the conceptual model of the system depending on the businesses and their relationships. The classroom drawing appears as a rectangular form, consisting of three vertical chambers. The first box contains the name of the category, the second box in the middle contains the attributes of the category and the third box contains the methods or functions performed by that category. The main room / box of the name is mandatory and everything else is left to change the drawing. Therefore, in any classroom design a first room should be drawn while the second room should be occupied by two rooms. The "patient" section contains several parameters (such as id, name, age, address), which indicate the details of all registered patients. The User Category also contains the methods used by these users such as appointments, viewing / creating of your medical records etc. Within this category, the "doctor" category contains the parameters id, name, department, address with all the information required by users registered as a physician in the system. Ways to accept / reject appointments, examine a patient, view a medical record of any patient etc. These methods are functions performed by users who are registered as physicians in the system. The “appointment” of a section has limits to the date and time, specifying which patient or patient day has applied for the 33 doctor's appointment. The “door” section has a parameter id and name and methods including adding / removing a doctor and adding or removing a door. Each physician user must be under any category of department. A “report” is another category that contains procedures such as writing a report or prescribing drugs. Finally, the "admin" section contains parameters such as id and name and methods in this section.



System Testing

For the sake of software quality assurance, system testing is a very essential thing to do. It is a process by which we try to make the system error proof by performing the program to find an error. The goal is to run the program, find errors or bugs and then fix them. Testing is considered a very essential step in software development and any system is not considered to be complete without this process.

Figure 2. Conditions for all the user's.

Test case ID	Test case name	Precondition	Priority	Input test data	Steps to be executed	Expected Result	Successful or not
1 2 3	User_Reg Doctor_Reg Admin_Reg	no	high	Valid email address or correct national ID card no	Need to fill the registration form and submit	Registration successful	OK
				invalid email address or incorrect national		Error message	Error

RESULTS AND DISCUSSION] By referring the paper **Campbell JL, Fletcher E, Britten N, et al.** We got the results And providing the interface to all the uers(Doctor's, Patient's and administrator's)

Figure 1.0

The image shows the admin login panel where the user can login using their username and password after login he/she can view all the patients appointments then the admin will manage the doctor to patient appointment as shown in figure 1.0.

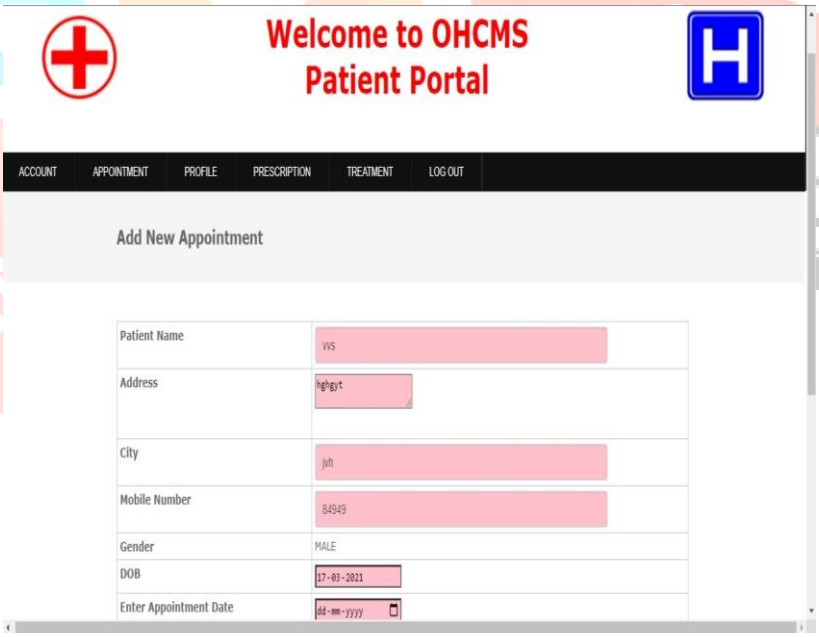


Figure 1.1

The image showing here is the appointment portal where a patient can book an appointment by providing the following details. The user must enter all the valid details such as name, address, mobile number, gender and the date of birth as shown in figure 1.1

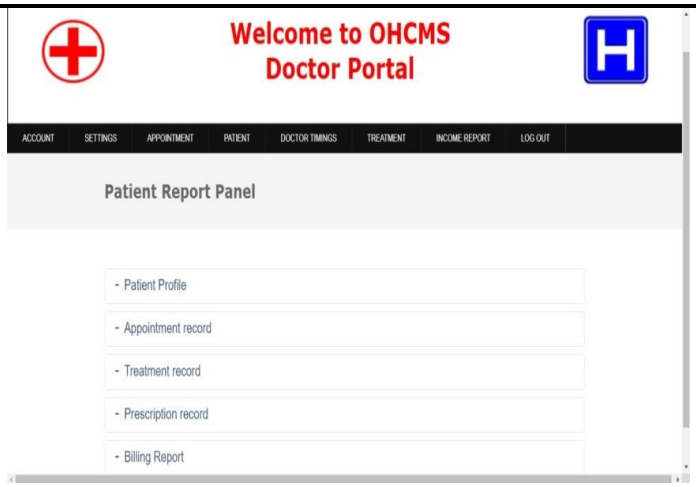


Figure 1.2

The image shows the patient report portal where all the information of a particular patient is there such as profile, appointment record, treatment record, prescription record and billing report as shown in figure 1.2.

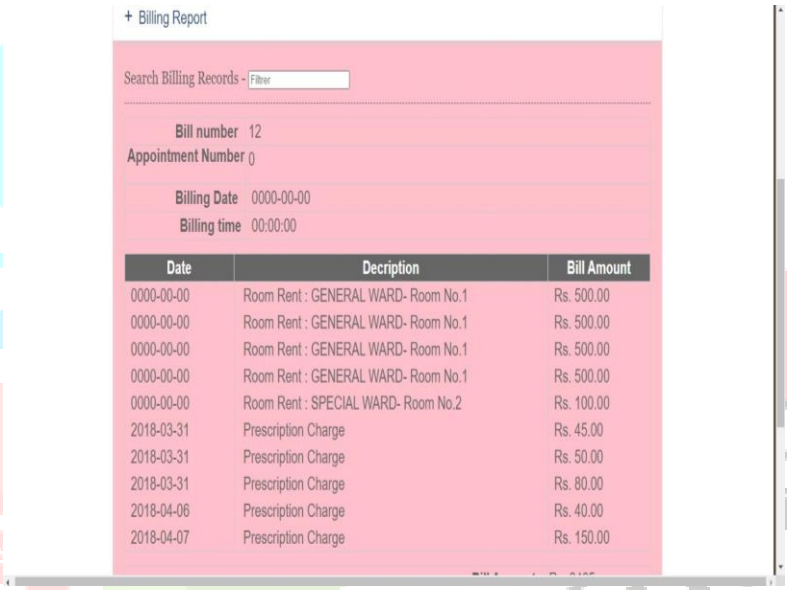


Figure 1.3

The image shows the sample of the billing report. It will give the details of all patient bills and percentage the management offers and he can view the bills anytime whenever he want as shown in figure 1.3

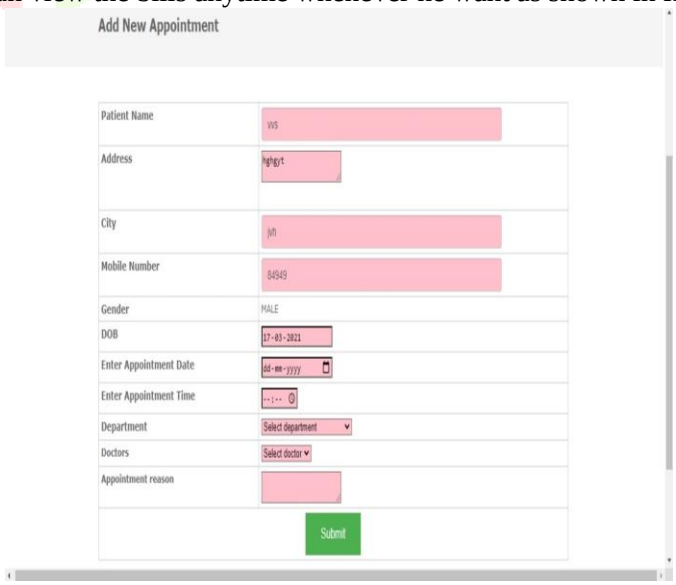


Figure 1.4

The image shows the new appointment portal and the textboxes in it as shown figure 1.4

I. **Discussion:-**

After coming to **Hobbs FD, Bankhead C, Mukhtar T** and experiencing such an organized and centralized health care system for the public, I also decided to make a similar application for my country. Of course, the scope of the application I am developing is not too big, but I hope at least it would be a good solution to the prevailing problems of my country. As I have mentioned earlier there are a lot of small clinics in every next street, creating a very confusing problem for the public as well as new practitioners. So, this kind of system will help the users to choose which doctor to consult, maintain an online medical record, get an appointment online and equals opportunity to all practitioners to be reached by the public.

Because it is going to be the first-ever system of this kind in India so it is very important to keep the user interface very easy to understand and simple to use. So I tried not to bombard web pages with too much stuff.

Usually developing any system comprises of three basic steps planning, design, and the testing phase. After finalizing the basic requirements that should be met by the system, it was also important to decide which technologies to use for the development of this system. For this purpose, I took help from the web and carefully studied already existed similar web applications. Use case diagram, class diagram, and ER diagram are used to better explain the system and its working. The purpose for drawing use case diagram was to explain not only functionalities but also to write down the requirements of each user very clearly. The class diagram was drawn to explain the relationship and behavior of entities.

For now, I have chosen and working on some basic functionalities like an online appointment,online database, and online doctor review. But for the future, I would like to extend my system to the pharmacies and laboratories. For example, different pharmacies and laboratories can also be registered with the system. And when the doctor prescribes some medicine or writes some tests, the patient can just go to any registered pharmacy and get the medicine after showing his ID. In the same way, if a doctor writes some tests, the patient can go to any registered laboratory. Registered pharmacies and laboratories would have some limited access to the patient data like what is prescribed by the doctor and they can add the report result into the patient's database. Online follow up is another feature that I would like to add in my system at some later stages. The idea of this featured came into my mind because the patients living in far away places have to come multiple times for the “laboratory test results” and “doctors' advice/ follow-up appointment” based on those tests. So, after the laboratory tests, patients just have to book an online time and they can have an online conversation with some fewer fees. Online payment is again another features I would like to add at later stages.

Conclusion

After researching all over the world finding such a formal public health care system, I decided to make a similar application for my country. Of course, the size of the application I am making is not very large, but I hope it can at least be a good solution to the problems that exist in my country. As I have said before there are many small clinics on all the following roads, creating a very confusing problem for the community and new staff. Therefore, this type of program will help users to choose which doctor to contact, keep an online medical record, get an online appointment and an equal opportunity for all employees who will be available to the public. Because it will be the first program of its kind in Pakistan, it is therefore very important to keep the user interface easy to understand and easy to use. So, I tried not to include web pages with too many things. Usually developing any program has three basic steps for planning, design, and testing phase. After completing the basic requirements of the system, it was also important to decide what technology would be used to improve the system. For this purpose, I took the help of the web and carefully researched the same web applications that were available. Use case diagram, class diagram, and ER diagram are used to better describe the system and its functionality. The purpose of drawing a case diagram was not only to work but also to write down the needs of each user clearly. A classroom diagram is drawn to describe relationships and business behavior. In the meantime, I have selected and worked on other basic functions such as online appointments, online database and online doctor reviews. But in the future, I would like to extend my program to pharmacies and laboratories. For example, different pharmacies and laboratories may be registered with the program. And when a doctor prescribes a particular medicine or prescribes certain tests, the patient may simply go to any registered pharmacy and receive the medicine after showing his or her ID. In the same way, if a doctor writes certain tests, the patient can go to any registered laboratory. Registered pharmacies and laboratories may have limited access to patient information as prescribed by their physician and may add to the patient's report results. Online tracking is another thing I would like to include in my program in some recent sections.

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