

ONLINE DOCTOR'S APPOINTMENT SYSTEM (ODAS)

ONLINE DOCTOR'S APPOINTMENT SYSTEM



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A Project Submitted in Partial Fulfillment of the Requirements for the Degree of
Bachelor of Science in Computer Science & Engineering

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CERTIFICATE

This is certify that the project paper entitled "ONLINE DOCTOR APPOINTMENT SYSTEM" submitted by Md. Ferdous Tapos Student ID: 0602026 and Md. Abdur Rouf Student ID: 0602020 have been carried out under my supervision. This project has been prepared in partial fulfillment of the requirement for the Degree of Bachelor of Science in Computer Science & Engineering.

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*DEDICATED TO OUR RESPECTABLE
PARENTS WHO ARE THE SOURCE IN THIS WORLD*

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ABSTRACT

First world countries are adopting IT in their daily life extremely. Especially medical services are extremely qualified. They can search in the net about their health related problems; Even latest technologies, services and medicine. On the net they can even search for their best affordable doctors and hospitals. They can get admitted into it, they can make appointment over net. After all it can be said that most of the countries in the world are using IT for the medical sector as a powerful tools of giving services to the people so that they get the best service. Unfortunately, in Bangladesh we don't have enough health related services.

Online Doctors Appointments System (ODAS) is a real-time web application for doctor's appointment. The application has three main sections.

First section is the general information, about doctor, contact information, etc. only the register Patient can login and make appointment 24 hours a day 7 days a week.

Second Section is doctor login, only authorized Doctor can login. Modify information doctor, print or View any day appointments.

Third section is Administrator; they edit or modify all information of doctor or Patient in the side.

The database, store procedures and computer program is design in such way to accommodate different situation. Using PHP, HTML, JavaScript, CSS, MySQL Languages are used to develop the front end of the systems. MySQL database is used to store and process various type of information. We have tried very hard to make this projects error free. Finally we can ensure that highest security is used to handle the data and password. The systems are able to deny the unauthorized access.

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CHAPTER 1



1.1. Introduction

It is impossible to lead a peaceful life without a sound health. However, to have a sound health we need a well-organized health care system. In our Bangladesh, we have very good facilities in the medical sector. But, due to less advertisement or information most of the people are not aware of it. Moreover, to find the exact doctor is not too easy. Sometimes we may find a doctor in a far place but we don't know there is a doctor just next to our door. Therefore, if it could be possible that anyone can search for the best doctor or health facilities in any given quarry then it would be beneficiary. Another important thing is the cost. If it is possible to search for the optimal point of cost and services among the service providers (hospital or clinic) then it will be a plus point for the general people. Sometimes medical specialists come from foreign country, special discount given to a particular health service, special discount given to health care devices but this kind of health related advertisement not collected together so that people get the benefit of it. If it could be the case that some media or website combine all the things together for the better service of health it would be excellent. We are proposing such a web based health care system where people will get services of all these ideas and many more.

1.2. Background of the Study

In today's modern age where computer has become a way of life, it is evident that a majority of the country's institutions still do not adapt the high technology. We all know that modern clinics are now operating at great pace striving to serve as many patients as possible with the best of their abilities. But as the years rolled by, the number of patients has grown and various medical cases arise that the manual method of managing patients' records, prescriptions, billing and appointment schedule, is no longer practical.

Now more than ever, people have become more health conscious and are taking necessary steps to ensure that they have a sound body and mind—that is why everyday many people come to clinics or health facility for check-ups and treatments. Basically patients spend a substantial amount of time in clinics waiting for services to be delivered by the doctor or health professional. The degree to which the patients are satisfied with the care received is relative not only to the doctors' expertise in their field, but also to the quality of the clinic management. And we all know that as the number of patients continually increase, managing a clinic can also become increasingly difficult, especially if everything is done manually.

In this study, we hope to develop a web-based application that will minimize all paper works and manual records keeping, therefore allowing doctors ease in keeping track of patients, reducing patients' waiting time and increasing the number of patients served – a system that is fully automated, user-friendly, time effective and efficient.

1.3. Purpose

The Software is for the automation of Hospital Management.
It maintains three levels of users:-

- 1.3.1 User Level
- 1.3.2 Doctor Level
- 1.3.3 Administrator Level

1.4. Scope

It can be used in any Hospital, Clinic, for maintaining patient details and their test results.

1.5. Significance of the Study

1.5.1 Socio - economic significance

In this study, the system will inspire other students to develop an effective and efficient system.

1.5.2. Technological significance

The system will introduce technology to the medical clinics that are until now adapting the manual method of Hospital/clinic management.

1.6. Objectives of the Study

1.6.1 General Objective:

The general objective of this study is to design and develop an online doctor management System solution that will serve as proposal to help doctors save time and resources with the automation of its daily clinic operations.

1.6.2 Specific Objective:

- 1.) To computerize records keeping of patients;
- 2.) To allow doctors to retrieve complete patient history instantly;
- 3.) To automate medical prescriptions and medical certificate

1.7. Advantages of online appointment scheduling

Online appointment scheduling is becoming increasingly popular as patients become more comfortable and knowledgeable using the internet. A Wall Street Journal survey showed that the majority of adults prefer making their appointments online. The widely read journal Medical economics has articles that report the same attraction with online appointment scheduling. Dr. Robert Pearl, executive director and CEO of the Permanente Medical Group, said that online appointment scheduling gives patients "more choices and control over their health care... in a way that's personalized and convenient."

1.7.1 Appointments can be made after hours

When your office is closed and telephone access is no longer available, appointments may still be made smoothly and efficiently.

1.7.2 No waiting to book an appointment

Patients or clients do not need to be put on indefinite hold. There is no prolonged wait with online scheduling. Appointment availability is identified quickly and appointments are secured.

1.7.3 Online appointment scheduling is becoming more popular

Online Appointment system is more popular in Europe and America. Today's our country Bangladesh is also popular on online.

1.7.4 Telephone and online appointment capability

The best online appointment scheduling systems incorporate telephone and online scheduling. Our system is very user friendly and simple. The system is designed in such a way that an user will never feel bored in our system.

1.7.5 Easy Access

Many offices have multiple people booking appointments. A scheduling system that is uniform, accessible by all schedulers in the office is ideal. A computer network with internet access provides multiple employees simultaneous access for making appointments.

1.8. Problems

Problems with conventional system

1.8.1. Lack of immediate retrievals: -The information is very difficult to retrieve and to find particular information like. To find out about the patient's history, the user has to go through various registers. This results in inconvenience and wastage of time.

1.8.2. Lack of immediate information storage: - The information generated by various transactions takes time and efforts to be stored at right place.

1.8.3. Lack of prompt updating:- Various changes to information like patient details or immunization details of child are difficult to make as paper work is involved.

1.8.4. Error prone manual calculation: - Manual calculations are error prone and take a lot of time this may result in incorrect information.

1.8.5. Preparation of accurate and prompt reports: - This becomes a difficult task as information is difficult to collect from various registers.

CHAPTER 2



FEASIBILITY STUDY

2.1. Feasibility Study

Depending on the results of the initial investigation the survey is now expanded to a more detailed feasibility study. "FEASIBILITY STUDY" is a test of system proposal according to its workability, impact of the organization, ability to meet needs and effective use of the resources. It focuses on these major questions:

1. What are the user's demonstrable needs and how does a candidate system meet them?
2. What resources are available for given candidate system?
3. What are the likely impacts of the candidate system on the organization?
4. Whether it is worth to solve the problem?

During feasibility analysis for this project, following primary areas of interest are to be considered. Investigation and generating ideas about a new system does this.

2.2. Steps in feasibility analysis

Eight steps involved in the feasibility analysis are:

- Form a project team and appoint a project leader.
- Prepare system flowcharts.
- Enumerate potential proposed system.
- Define and identify characteristics of proposed system.
- Determine and evaluate performance and cost effective of each proposed system.
- Weight system performance and cost data.
- Select the best-proposed system.
- Prepare and report final project directive to management.

2.2.1) Technical feasibility

A study of resource availability that may affect the ability to achieve an acceptable system. This evaluation determines whether the technology needed for the proposed system is available or not.

- Can the work for the project be done with current equipment existing software technology & available personal?
- Can the system be upgraded if developed?
- If new technology is needed then what can be developed?

This is concerned with specifying equipment and software that will successfully satisfy the user requirement. The technical needs of the system may include:

2.2.1.1 Front-end and back-end selection

An important issue for the development of a project is the selection of suitable front-end and back-end. When we decided to develop the project we went through an extensive study to determine the most suitable platform that suits the needs of the organization as well as helps in development of the project.

The aspects of our study included the following factors.

i) Front-end selection:

1. It must have a graphical user interface that assists employees that are not from IT background.
2. Scalability and extensibility.
3. Flexibility.
4. Robustness.
5. According to the organization requirement and the culture.
6. Must provide excellent reporting features with good printing support.
7. Platform independent.
8. Easy to debug and maintain.
9. Event driven programming facility.
10. Front end must support some popular back end like Ms Access.

ii) Back-end Selection:

1. Multiple user support.
2. Efficient data handling.
3. Provide inherent features for security.
4. Efficient data retrieval and maintenance.
5. Stored procedures.
6. Popularity.
7. Operating System compatible.
8. Easy to install.
9. Various drivers must be available.
10. Easy to implant with the Front-end.

According to above stated features we selected Ms-Access as the backend. The technical feasibility is frequently the most difficult area encountered at this stage. It is essential that the process of analysis and definition be conducted in parallel with an assessment to technical feasibility. It centers on the existing computer system (hardware, software etc.) and to what extent it can support the proposed system.

2.2.2) Economical feasibility

Economic justification is generally the "Bottom Line" consideration for most systems. Economic justification includes a broad range of concerns that includes cost benefit analysis. In this we weight the cost and the benefits associated with the candidate system and if it suits the basic purpose of the organization i.e. profit making, the project is making to the analysis and design phase.

The financial and the economic questions during the preliminary investigation are verified to estimate the following:

- The cost to conduct a full system investigation.
- The cost of hardware and software for the class of application being considered.
- The benefits in the form of reduced cost.
- The proposed system will give the minute information, as a result the performance is improved which in turn may be expected to provide increased profits.
- This feasibility checks whether the system can be developed with the available funds. The ODAS does not require enormous

amount of money to be developed. This can be done economically if planned judiciously, so it is economically feasible. The cost of project depends upon the number of man- hours required.

2.2.3) Operational Feasibility

It is mainly related to human organizations and political aspects. The points to be considered are:

- What changes will be brought with the system?
- What organization structures are disturbed?
- What new skills will be required? Do the existing staff members have these skills? If not, can they be trained in due course of time?

The system is operationally feasible as it very easy for the End users to operate it. It only needs basic information about Windows platform.

2.2.4) Schedule feasibility

Time evaluation is the most important consideration in the development of project. The time schedule required for the developed of this project is very important since more development time effect machine time, cost and cause delay in the development of other systems.

A reliable ODAS can be developed in the considerable amount of time.

2.2.5) Behavioral Feasibility

Behavioral feasibility determines how much effort will go in the proposed information system and in educating and training the user on the new system, along with the new ways of conducting the business. It maintains the equilibrium of the organization. For this reason, our proposed system is behavioral feasible.

CHAPTER 3



3.1 Technologies

Different technologies those are necessary to build the dynamic Web application Online Doctor Appointment system.

3.1.1 Client Script

A client script is a program that is embedded in a Web page. The code is interpreted by a browser, which provides interactive experience for an end user. Client scripts can be written in scripting languages such as VBScript or Jscript. Each element on a Web page is represented by an object that may have properties, events, and methods. This is known as the Dynamic HTML Object Model. Client script can process events generated by these elements.

3.1.2 Server Script

A server script is a program embedded in a Web page that is located in the server side. The code is interpreted by server software and it plays a key role in a dynamic Web application. The Web page containing server script is called an Active Server Page (ASP) file. Server script is never sent to a client machine directly; instead, it dynamically generates HTML and client script that are sent back to a browser. The Active Server Framework (ASF) technology is used to process server script. Server scripts can be written in scripting languages such as VBScript, JavaScript.

3.2 Active Server Framework (ASF)

The Active Server Framework (ASF), a key technology to build dynamic Web Applications, is software executed in conjunction with a Web server. Its primary role is to process Active Server Pages (ASP). The framework is available in a web server such as Microsoft Internet Information Server (IIS) or Personal Web Server (PWS). IIS or PWS is software that is used to process HTTP requests.

The sequence begins when a browser requests a .asp file. That file is read and processed by the Web server. The scripting engine of the ASF processes any server-side script commands. The response to the browser is HTML and client-side script when a server-side script is processed; it may dynamically constructs HTML and/or client-side script and directs the ASF to write this to a browser.

In the Online Appointment System, some other software technologies are also used, including Cascading Style Sheets (CSS), Dynamic HTML (DHTML), Open Database Connectivity (ODBC), Structured Query Language (SQL), Active Data Objects (ADO) and Design-Time Controls (DTC)

3.3 Scripting Languages

Client scripts and server scripts can be written in scripting languages such as VBScript, JavaScript or Jscript. VBScript is a scripting language that was developed by Microsoft Corp. At this time, only Internet Explorer can interpret VBScript client code. Netscape browsers do not support this language. Only Internet Information Server (IIS) can interpret VBScript server code. JavaScript is a scripting language that was developed by Netscape. Both Internet Explorer and Netscape Communicator support this language. Jscript is a Microsoft's version of JavaScript.

3.4 Cascading Style Sheets (CSS)

CSS is a style sheet language used to describe the presentation of a document written in a markup language. It's most common application is to style web pages written in HTML and XHTML, but the language can be applied to any kind of XML document

It is a breakthrough in web design because it allows developers to control the style and layout of multiple web pages all at once. The Cascading style Sheet (CSS) is used specially for defining some common format of a unique area. With CSS it is possible to:

Styles define how to display HTML elements

- Styles are normally stored in styles sheets
- Styles were added to HTML 4.0 to solve a problem
- External style sheets are stored in CSS files
- Add a new looks to the old HTML
- Multiple style definitions will cascade into one

I have used some common CSS coding to build up online Doctor Appointment system.

3.5 Web server

A Web server is a piece of software that manages web pages and makes them available to 'client' browser- via a local network or over the internet. While there are many web servers available - the common ones being Apache Internet Information

3.6. Apache Server

The PHP developers work very closely with the apache and MySQL teams to ensure that advances in the three server systems are fully supported by the other components.

a) Microsoft Internet Information Server (IIS)

Internet Information Service (IIS) - formerly called Internet Information Server-is a set of Internet-based services for servers created by Microsoft for use with Microsoft Windows. It is the world's second most popular web server in terms of overall websites.

- a) **Cross-platform:** We can run most PHP code, without alteration; on computers running many different systems. A PHP 5.1.4 script that runs on Linux will generally run on windows as well.
- b) **HTML embedded:** PHP code is written in files containing a mixture of PHP 5.1.4 instruction HTML code.
- c) **Open Source:** PHP 5.1.4 is an open source programming language. That is all we can access it through internet.
- d) **Server-side:** the PHP 5.1.4 programs we write are run on a server specially, a web server. Server side scripts typically start with `<?>` And end with `?>`. The `<?` is called an opening tag, and the `?>` is called a closing tag. In between these tags are the server side scripts. We can insert server-side scripts anywhere in our web page even inside HTML tags.

On the online Appointment System some pages are available to visit without any permission. But some are restricted. All the restricted pages usable for the user in online Appointment System, checks the user is he valid or not. If the user is not valid then the system send back user to the sign in page to sign in and getting permission to use the system

My SQL provides a whole lot of other features:

- i. **Open source software:** The MYSQL 5.0.24a package comes with the complete source code. This means that we may study the source code. This means that we may study the source code and modify it to suit our particular needs.
- ii. **SQL support:** As the "SQL" in MY SQL 5.0.24a suggests, My SQL support SQL (Structured Query Language), a standard high-level language used to make queries for data required from a database.
- iii. **Super performance and reliability:** My SQL is remarkably fast and reliable even in a most demanding environment.

3.7. HTML (Hypertext Markup Language) - HTML is a set of commands used to create World Wide Web documents. The commands allow the document creator to define the parts of document.

3.8. HTTP (Hypertext Transport Protocol) - HTTP is the protocol used to transfer hypertext or hypermedia documents.

CHAPTER 4



PROJECT REQUIREMENTS

4.1. Network

All the functionality, features and configuration shall be documented for all the equipments/components and shall be demonstrated with respect to the documentation prepared.

4.2. Functionality Requirements

All the features and functions desired for the optimal operation of a tertiary care multi specialty hospital is to be provided in an integrated platform, which includes but not limited to, Laboratory and Radiology Management System, PACS and Telemedicine. A detailed study of existing systems and required functionalities for the HMIS system is to be conducted to be able to understand the customizations that will possibly be required. Results of these are to be documented by the vendor.

4.3. Project Requirements

Hardware Requirements		
Processor	RAM	Disk Space
Pentium IV or higher	128 Mb or Higher	130 Mb
Software Requirements		
Operating System	Database	
Win-XP, Linux or any other higher version	Ms Access	

4.4. User Characteristics

Every user should be:

- Comfortable of working with computer.
- He must have knowledge in medical field.
- He must also have basic knowledge of English too

Information about Patients is done by just writing the Patients name, age and gender. Whenever the Patient comes up his information is stored freshly.

4.5. Patient Management System (PMS)

4.5.1. The Patient Management System shall broadly cover

- Out-patient Registrations, including

4.5.2. In-patient Admission-Transfer Discharge Process, including

- Capturing basic patient information;
- In-patient ID;

4.5.3. Consulting Appointment Management, including

- Booking of multiple slots for patients.
- Appointment cancellation / re-scheduling.

4.6. Clinical Care System (CCS)

The Clinical Care System shall broadly cover

- 4.6.1. Clinical follow up, including
- 4.6.2. Service Order Processing, including
- 4.6.3. Electronic Medical Records (EMR), including

4.7. Application Architecture

Implementation of HMIS is aimed at deriving benefits for the patient, doctor as well as administrator in more ways than one. To site a few benefits -

4.7.1. Patient

- Computerized medical record
- Appointment booking on web,
- Paperless virtual office

4.7.2. Administrator

- Optimum resource utilization
- Computerized scheduling of staff and services
- Online reports

4.7.3. Safety Requirement

To insure the safety of the system, identification facilities must be implemented in order to have different levels of privileges to access the system. In this way, unauthorized access to the system can be prevented.

4.7.4. Privacy Requirement

The private information of each individual stored in the system should be secured. Only the owner of data is allowed to access the information. User ID and password are designed to achieve this goal.

4.7.5. Performance

Application framework designed to ensure good performance
Use of caching techniques

4.7.6. Security

Application level security in terms of user roles & responsibilities

4.7.7. Availability

24 x 7 availability

CHAPTER 5

SYSTEM DESIGN

5.1. Design:

In manual clinical system, patient arrival on chamber and then get appointment on specific doctor

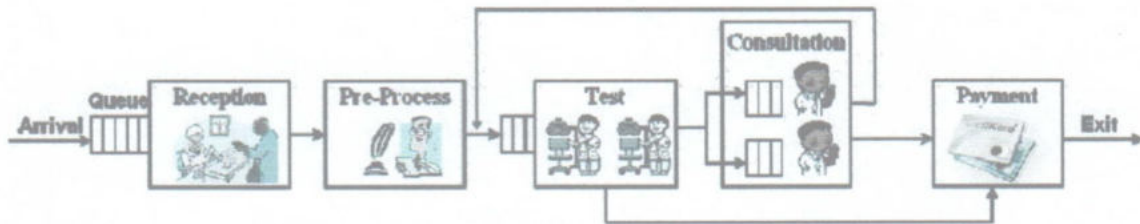


Figure: Manual doctor Appointment System

5.2. Relational database:

A relational database is a database structured in accordance with the relational model. Strictly speaking the term refers to a specific collection of data but it is invariably employed together with the software used to manage that collection of data. That software is more correctly called a relational database management system (RDBMS). Relational database management systems incorporate many features from the relational model, but commercial RDBMSs also tend to diverge from the relational model in significant ways. *Edgar Codd*, who proposed the relational model in a groundbreaking 1970 paper, introduced a set of rules and, in 1985, a scoring system to determine whether or not a particular database implementation was in fact "relational." By this standard most commercial database servers fail the test, although it's worth noting that there have been few implementations of "truly" relational database servers and these have not had anywhere near the same commercial success. This article will explain what a database which conforms to the relational model is and is not.

5.3. Relational model:

The relational model for database management is a data model based on predicate logic and set theory. Relational databases have features which correspond with features of the relational model. In order to make the software work well in the real world, relational database management systems add additional features such as indices which have no place in the relational model.

5.4. Mapping the relational model to a relational database

The core of the relational model is that all data can be organized into relations. Relations are a way of organizing the data which permit flexible and powerful operations on the stored values. A relation has two parts, the heading, which is called the metadata in a relational database, and the body, which is the data itself. Relational databases generally implement relations in the form of tables and views.

A relation's heading is a set of attributes, and an attribute consists of a name and a domain. An attribute in relational theory is usually implemented as a column in a relational database. The domain is the set of possible values which can be stored. For example, a relation could have an attribute called "Percentage" with a domain of the integers between 0 and 100, inclusive. This would most commonly be implemented in a relational database as a column with a name of "Percentage" and a domain that has the data type of integer and a constraint disallowing values

outside of that range. Note, however, that the data type and the constraint are really just two different ways of limiting the possible values which can be stored; from a relational theory point of view they're doing essentially the same thing, which is describing the possible attribute values.

One area where relational database management systems tend to diverge from relational theory is that RDBMSs usually give their columns an order. For example, they have a "first column," which might be the primary key, and a "second column," which might be a name, and so on. This is required by the SQL standard but is proscribed by relational theory. Most real-world attributes don't have orders, either. If you were to describe a person you wouldn't say that their eye color comes "before" their height and "after" their name, but this is essentially what the SQL standard requires.

The body of a relation is a set of unordered tuples. A tuple is a collection of values, organized by attribute name rather than by a defined order. For example, we might say that the attribute value of the "Percentage" attribute for a particular tuple is 95. The tuples are unordered in two different senses: The attribute values they contain are identified by name rather than by a "position" within the tuple, and the tuple itself has no single position relative to other tuples. Tuples are generally implemented in relational databases as rows. As noted earlier, most RDBMSs diverge from the relational model in that they are required by SQL to have an order of columns, but it's reasonably common for a database server to not support a defined order for their rows, and this seeming limitation turns out to have a number of advantages both in theory and practice.

The relational model (and Codd's rule number four) requires that the metadata also be accessible in the same manner as the rest of the data, and nearly all RDBMSs support this rule by describing the metadata in "system tables." Hence, the heading and the body are distinct within a single relation, but are essentially the same thing in general.

5.5. Database normalization:

Database normalization is the process of structuring real-world data in such a way that it meets the standards for a relational database. Normalization is the process of decomposing a relation (table) based on functional dependency and primary key.

- First Normal Form (1 NF)
- Second Normal Form (2 NF)
- Third Normal Form (3 NF)
- Boyce – Codd Normal Form (BCNF)
- Fourth Normal Form (4 NF)
- Fifth Normal Form (5 NF)

5.6. Relational algebra:

The relational algebra is a set of operations that manipulate relations as they are defined in the relational model and as such describes part of the data manipulation aspect of this data model. Because of their algebraic properties these operations are often used in database query optimization as an intermediate representation of a query to which certain rewrite rules can be applied to obtain a more efficient version of the query.

The exact set of operations may differ per definition and also depends on whether the unlabeled relational model (that uses mathematical relations) or the labeled relational model (that uses the labeled specialization of mathematical relations) is used. We will assume the labeled case here as this is the most common way the relational model is defined. That means that we assume that tuples are partial functions from attribute names to values.

However, these tuples differ from the more abstract tuples of mathematics by having more concrete qualities associated with the places of the relation. In this setting, the components of the tuples, called attribute values or feature values, are identified by means of attribute names or feature names. Queries and integrity constraints are expressed declaratively, without the use of iterative loops or pointers, using operators based on the relational algebra and relation comparisons. The relational algebra is complete with respect to first-order predicate calculus except that restrictions are imposed on the use of the logical operations of negation and disjunction in order to guarantee that database computations will be feasible in practice.

5.7. Database Design of Online Doctors Appointment System

5.7.1. Database

Databases are specifically designed to be capable of organization. Immaculate record keeping. The most efficient alternative is to use a database engine or to use its more technical name a database Management System (DBMS) to store, retrieve and modify the data. Some database is MySQL, Oracle, MS Access, SQL server etc. we have used MySQL database on back to develop Online Doctors Appointment System.

5.7.2. The use of Database in this system

We have used the database to store the information about the doctor, patient, Admin. To store this information we have made some tables.

5.7.3. The reason for using database

Using database system large bodies of information can store and manage easily. It allows the manipulation, and retrieving data easily. In addition, the database system ensures the safety of the information stored, despite the system crashes or attempt at unauthorized access.

5.8. Description of the tables of online Doctor's Appointment System

5.8.1. User Login table:

This table contains the user id, user name, and password for user.

5.8.2. Doctor login table:

This table contains the Doctor id, doctor name, and password of Doctor.

5.8.4. Notice table:

This table updates notice on doctor on specific date and time.

5.8.5. Patient table:

Patient information store on this table. Such as email-id or Appointment date.

5.9. Database structure Design of Online Doctors Appointment system on Data Tables

Login Table:

Field Name	Data Type
<u>Id</u>	BIGINT
Pid	VARCHAR
Password	VARCHAR

Admit Form:

Field Name	Data Type
<u>Id</u>	BIGINT
Name	VARCHAR
Co	VARCHAR
Gender	VARCHAR
Age	VARCHAR
Village1	VARCHAR
Village2	VARCHAR
Post1	VARCHAR
Post2	VARCHAR
Thana1	VARCHAR
Thana2	VARCHAR
District1	VARCHAR
District2	VARCHAR
Contact	VARCHAR
Email	VARCHAR
image	VARCHAR

Doctor Login Table:

Field Name	Data Type
Loginid	VARCHAR
Password	VARCHAR

Doctor Table:

Field Name	Data Type
<u>Did</u>	VARCHAR
Name	VARCHAR
Dept	VARCHAR
Designation	VARCHAR
Degree	VARCHAR
Experience	VARCHAR
Contact	VARCHAR
Email	VARCHAR
Fax	VARCHAR
Appointment	VARCHAR
Image	VARCHAR

Notice Table:

Field Name	Data Type
Did	VARCHAR
Fromdate	DATE
Todate	DATE
Msg	TEXT

Patient Table:

Field Name	Data Type
Pid	VARCHAR
Did	VARCHAR
Appoinmentdate	DATE
Apptime	INT

5.10. Schema diagram design of Online Doctors Appointment System

A database schema, along with primary key and foreign key dependencies, can be depicted pictorially by schema diagrams. In below the figure show schema diagram for our Online Doctors Appointment System. Each relation appears as a box, with the attributes listed inside it and the relation name above it. If there are primary key attributes, a horizontal line crosses the box, with the primary key attributes listed above the line. Foreign Key dependencies appear as arrows from the foreign key attributes of the referencing relation to the primary key of the referenced relation.

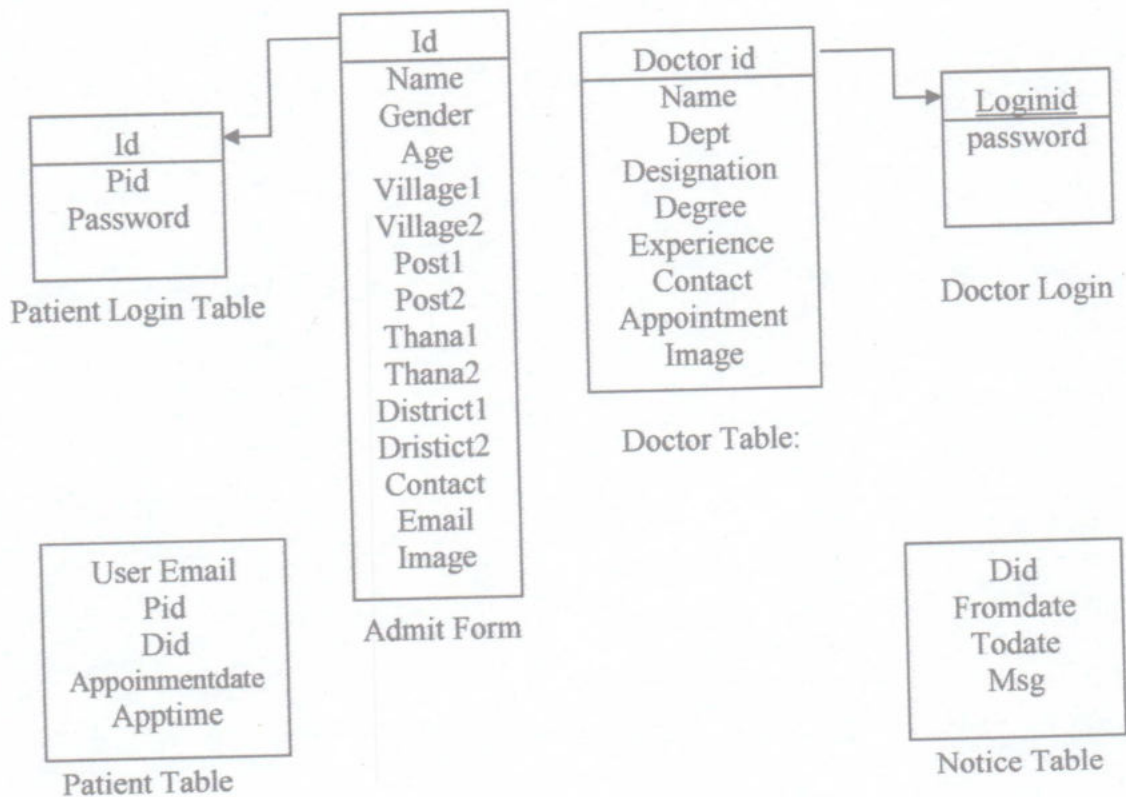


Figure: Schema Diagram of Online Doctors Appointment System

5.11. Entity relationship diagram design of Online Doctor Appointment System

5.11.1. Entities

Entities are concepts within the data model. Each entity is represented by a box within the ERD. Entities are abstract concepts, each representing one or more instances of the concept in question. An entity might be considered a container that holds all of the instances of a particular thing in a system. Entities are equivalent to database tables in a relational database, with each row of the table representing an instance of that entity.

Remember that each entity represents a container for instances of the thing in question. The diagram below has an entity for "Doctor" and another for "Patient." This indicates that the system being modeled may contain one or more patients and one or more doctors.

5.11.2. Relationships

Relationships are represented by lines between entities. Relationship lines indicate that each instance of an entity may have a relationship with instances of the connected entity, and vice versa.

There are three types of relationships between entities:

- **One-to-One:** one instance of an entity (A) is associated with one other instance of another entity (B). For example, in a database of employees, each employee name (A) is associated with only one social security number (B).
- **One-to-Many:** one instance of an entity (A) is associated with zero, one or many instances of another entity (B), but for one instance of entity B there is only one instance of entity A. For example, for a company with all employees working in one building, the building name (A) is associated with many different employees (B), but those employees all share the same singular association with entity A.
- **Many-to-Many:** one instance of an entity (A) is associated with one, zero or many instances of another entity (B), and one instance of entity B is associated with one, zero or many instances of entity A. For example, for a company in which all of its employees work on multiple projects, each instance of an employee (A) is associated with many instances of a project (B), and at the same time, each instance of a project (B) has multiple employees (A) associated with it.

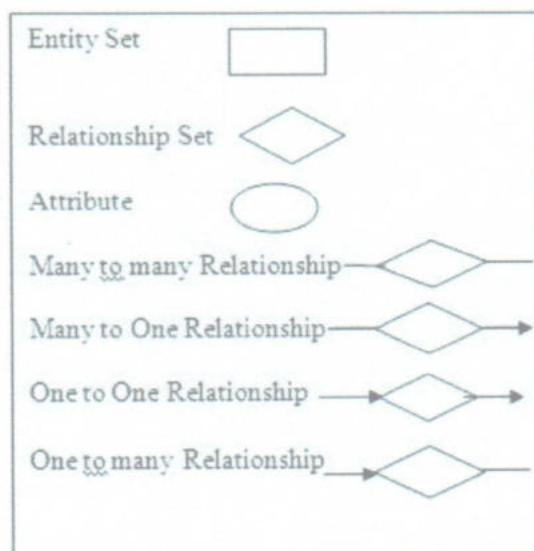


Figure: Symbol of E-R Model

The process of database design is an iterative process. The ER Model is used at the conceptual design stage of the database design. ER diagram is used to represent this conceptual design. The requirement analysis is modeled in this conceptual design. The ER model is very expressive so that people can easily understand the requirement. The data modeler prepares the ER diagram and is verified with the functional domain experts to ensure that all the requirements are properly incorporated in the conceptual design. The process is repeated until the end users and designers agree that the E-R diagram is a fair representation of the requirement. We can easily map an ER diagram to a relational schema.

The basic constructs of ER Model are Entity, Attributes and Relationships. An Entity is an object that exists in the real world and is distinguishable from other entities.

Snapshots of Project

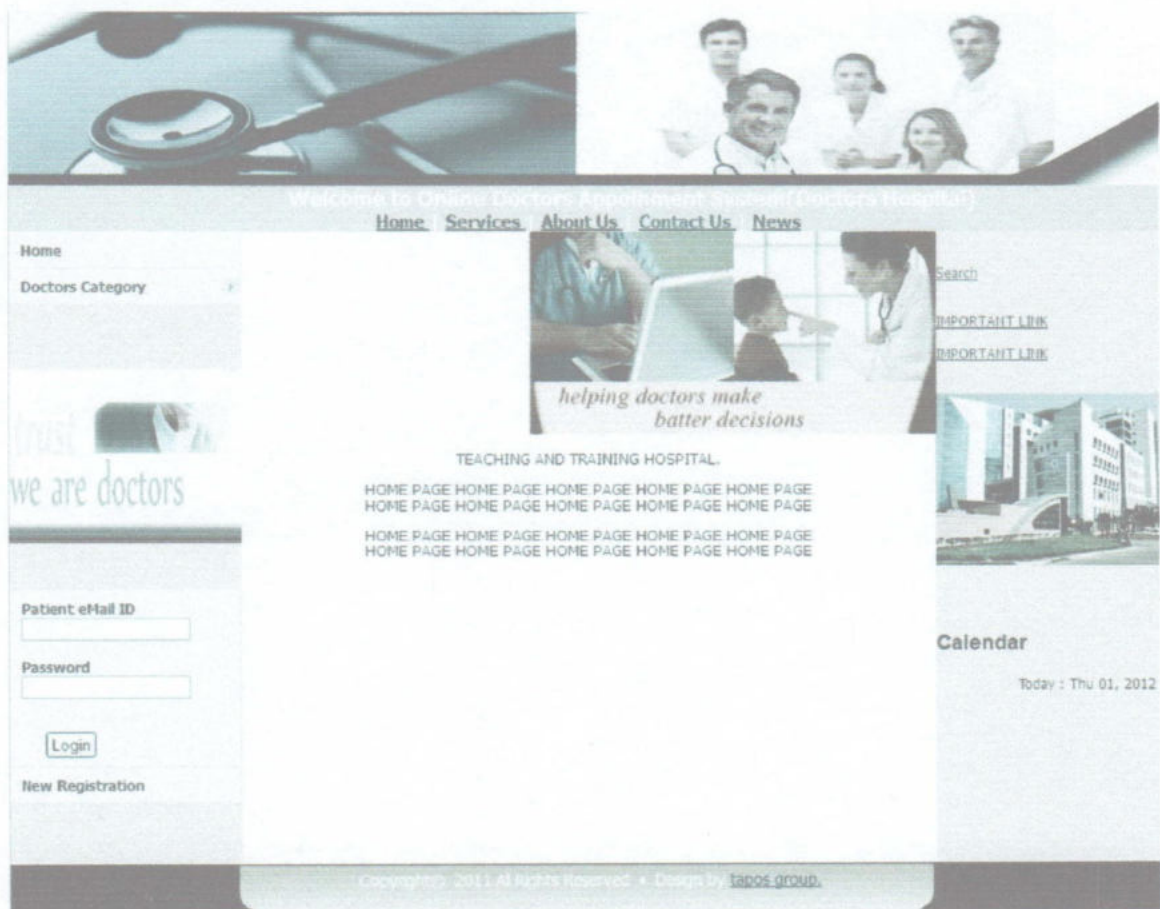


Figure: Online Doctor Appointment Home Page

Welcome to Patient Admission Form

Name	
eMail	
Password	
Retype Password*	
C/O	
Gender	☒ Male ☐ Female
Age	

Present Address

Village	
Post Office	
Police Station	
Zilla	

Permanent Address

Village	
Post Office	
Thana	
Zilla	
Contact No.	
Image	Browse...

Figure: New Patient Registration form

Doctor ID:	
Password	
Login	

Figure: Doctor Login Page

Date*

Date format: day-month-year

Only 5 Patients are allowed to apply for appointment on each Shift (Morning & Afternoon) everyday:

Total Appointments for Morning Shift: 0	Total Appointments for Afternoon Shift: 0
Apply for Morning Shift	Apply for Afternoon Shift

Figure: Doctors Appointment Schedule



Name: Dr. Emran Farhat
 Department: cardiology
 Contact: +8801737471626
 Appointment Time: 9AM-12PM & 5PM-8PM

[see more](#)

Figure: Doctors info Page

Writing Notice !

Doctor **Dr. Meas** will not be available from

to

So, do not take appointment in that date

Figure: Doctors Notice Page

DOCTORS SEARCH

Search either using Dept,Name:

Search

Figure: Doctors Search Page

CHAPTER 6

**FUNCTIONS & GOALS OF
THE SYSTEM**

6.1. Functions of the System

6.1.1. Patient Function

ODAS – allow patients to browse the doctor's schedule. In order to supply a direct appointment way on web, this feature provide a convenience practice which can avoid telephone line busy, or time consuming which cause by forming line at the clinic. ODAS will show out the doctors' schedule of the current month, the patients only need to select the appropriate doctor whom they want to see. The patient will clearly know their occupied time. Making appointment is several simple steps. The patients can log in by using the User ID and Password. For the first time to log in, the patients can register on the web site and get their own ID and Password.

6.1.2. Doctor Function

Computerize and centralize the patient's medical history in the database.

6.1.3. Administrator's Function

The system divides different level of rights. For the administrator, he can control and amend the user information such as user's name, password, and user rights. In addition, the administrator has the right to change any scheduled of appointment. The system provides much kind of reports for administrator to manage and coordinate, such as patient reports. Administrators allow doing the backup for the system (scheduling or customizing).

6.2. Goals of system

6.2.1. Planned approach towards working:-

The working in the organization will be well planned and organized. The data will be stored properly in data stores, which will help in retrieval of information as well as its storage.

6.2.2. Accuracy:-

The level of accuracy in the system will be higher. All operation would be done correctly and it ensures that whatever information is coming from the center is accurate.

6.2.3. Reliability:-

The reliability of the system will be high due to the above stated reasons. The reason for the increased reliability of the system is that now there would be proper storage of information.

6.2.4. No Redundancy:-

In the system most care would be that no information is repeated anywhere, in storage or otherwise. This would assure economic use of storage space and consistency in the data stored.

6.2.5. Immediate retrieval of information:-

The main objective of system is to provide for a quick and efficient retrieval of information. Any type of information would be available whenever the user requires.

6.2.6. Immediate storage of information:-

In manual system there are many Problems to store the largest amount of information

6.2.7. Easy to Operate:-

The system should be easy to operate and should be such that it can be developed within a short period of time and fit in the limited budget of the user.

CHAPTER 7



Conclusion

Bangladesh is still so much backward in medical side. When internationally medical services are getting more standard day by day, we are not concern about it. No such actions are taken to give better service to this sector. We need to be more conscious about it. There are million of people who are searching for better health treatment but not getting it. What's more unfortunately they are being missed treated some times. We have shown several ways of improving the service in medical area. Much more research is needed in this field. We hope the service will be international standard day by day.

It can thus be seen that deploying IT can help the medical profession in improving its quality of service and thus automatically increasing the preparedness and defensiveness. Of course, it is of vital importance that the software must have the right type of modularity and openness so that it is manageable, maintainable and up gradable. The hardware should also be reliable, available and have the necessary performance capacity. Certainly, computers with their intrinsic power can play a major role in a hospital/Clinic. They can perform the complex task of matching, tabulating, calculating, retrieving, printing and securing the data as required. Well designed, integrated computer system can be a great tool in the hands of the hospital management in improving services, controlling cost, and ensuring optimal utilization of facilities.

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