PATIENT HUB

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This Report Presented in Partial Fulfillment of the Requirements for

The Degree of Bachelor of Science in Computer Science and Engineering.

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APPROVAL

This Project titled **"Patient Hub"**, submitted by Md Mahir Labib Hossian & Md Abu Bakar Liton, ID No: 161-15-7160 & 161-15-7202 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 05-12-2019.
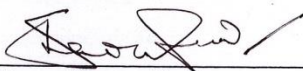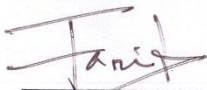
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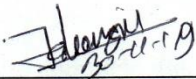Daffodil International University

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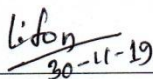Daffodil International University

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.

ABSTRACT

Patient Hub provides the benefits to a patient to get doctor's appointment through online easily. The main purpose of the **"Patient Hub"** is to make an online based   appointment or checkup. The project 'Patient Hub' is using database. As there are many areas where we keep the records in database. The database of the project makes it more users friendly and expandable. This project is highly customizable and can be modified as per the needs and requirements of our clients. It covers all the required modules right from Patient Registration in the website. The project costs and revenue calculated by economic feasibility if it is logical or possible to complete. In order to cut unnecessary expenses it often includes a cost. Future purpose/ scope of the website is, it can be connect with health ministry and central patient database of the country and central research labs.

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CHAPTER 1

INTRODUCTION

1.1. Introduction:

In today's world there is a big distance belongs between doctors and patients. From appointment to daily check-up patients suffers from various types of difficulties. In order to reduce patient's difficulties we found out **Patient Hub**, for the patient, to the patient. It helps patients by managing or booking appointment through online. Patients can easily get helps from Patient Hub.

In our day to day life, getting a doctor's appointment is a very important work. For that, a patient normally has to go to a hospital, check if any doctor is available, make appointment and wait until it's their turn. But in a busy everyday life, that is time consuming for everyone. Besides, when a patient needs any medicine, they have to go from pharmacy to pharmacy until they find the desired medicine. That too is a time and energy consuming process. In order to save time and energy of the patients, and reduce all the hassle in the process, a system that has all the information of the doctors and medicines is nothing but a gift. Besides in this day of information and technology, everything is expected to be easily accessible and information should be available to the people. For this a web application is proposed that provides all the information needed to make doctors' appointments and know where to find a suitable doctor.

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1.2.Objective:

This project predominantly pursuit on patient's benefits. When patients suffer from diseases, they can easily get doctor's appointment. This appointment getting approaches is very easy and user friendly. Nowadays peoples all over the world are dependent on online basis helps throughout websites or phone applications. Maybe our short effort by this project will reflect a good impression among patients.

The web application is designed in such a way that it reduces the manual work of the users. This gives a competitive advantage against the systems that are already available at present. With a system that manages the information automatically, the process not just becomes easier and more flexible but also hassle free and affordable.

In order to build the system that can provide multiple features, we need to consider that there will be multiple types of users. Firstly the patients are the non-resisted users. They can search for doctors and make appointments. Patients don't need to be login to the system to use it. But they must provide enough information to make an appointment. However, doctors and patients are users how must be registered to the system. They will have their profile in the system. Doctors need a profile that can be viewed by the patients.

The automated system provides information to the users that makes the whole process faster that the manual conventional process. The database contains all the information that are available to the users with appropriate authentication level.

This project will reduces patients extra sufferings or standing on line for appointments. Patients can choose their diseases related departmental doctors in a while. Patient Hub will do a great job if patients go with this website. This project takes patients in a very easy appointment booking universe.

1.3. Definitions:

Responsive website:

A responsive website is a website that response in every device. It is automatically adjusting every type of device. Suppose in desktop we can see a large screen but in a mobile we cannot see a large screen like desktop screen. In this case a responsive website adjusts the screen size[1].

Authentication:

Authentication is a security process. It is worry about which process will permitted to do anything. It is about our project security. In example we can see Facebook two factor authentication.

SMTP server:

It is a mail delivery system. It is a machine which take care of all email we send to a software or client server. It is configuring the whole email in a correct SMTP setting.

MVC frame work:

MVC means Model View Controller. It contains many library function. We use this framework for our help of coding. It provides us many core languages which we need all time in a library function. So we did not write the core program.

Template:

Template is predesigned document. It provides us a document which is not fulfill, it just an overview of a document. It is serve us a starting point of any document and we just edit this document and put the details in it.

User Interface (UI):

 The UI, or, more specifically in the case of web design, the Graphical User Interface (GUI) are the collection of elements which allow humans to interact with a website. The goal of a good GUI is the make interactions intuitive and simple. Though we typically think of things like navigation menus, buttons, toggles, etc. when it comes to the UI, the term can arguably also relate to the overall aesthetic experience including non-actionable elements.

1.4. Project Question:

 Any project must have project-question, such as- why this project is? About why the project is built?

In our project we also have a key Question. The question is "how to reduce patients Appointment difficulties?

"According to the project question, a patient finds an appointment from a doctor by this web project.

1.5. Reason to Choose:

- It lays focus on patients involvement
- Establishes rational and schedules
- Developers are exceptionally committed to the project
- Equipped with modernistic methods for quality software

1.6. Expected Output:

A patient can easily get an appointment from this website. In order to get an appointment patient have to register by opening a new account. After creating a new account for once, patient just sign in for next time login.

Hopefully this project will help patients and will enrich patient's knowledge before meeting with doctor. Patient's harassment will reduce and they can reach with doctor very easily.

CHAPTER 2

BACKGROUND

2.1. Introduction:

The project title we have selected "Patient Hub" is basically means how patients get an appointment of a doctor based on their diseases.

The goal of the project is to decrease the stresses of getting an appointment. It is the 1st time we are making appointment between patient and doctor throughout '*Patient Hub'*.

2.2. Project Summary:

Firstly we choose the project title "Patient Hub" in order to focus patient's priority. The graphical user interface designed based on user's flexibility priority. There is header and sub footer in the website. Such as home, about, department, doctor, blog, contact and appointment. [2].

Home:

The homepage contains a welcome basis compliment and short description about the project.

About:

About section contains some features such as –

- Emergency services
- Qualified Doctors
- Outdoor Checkups
- 24 Hour Services

"To take an emergency free consultation there is a form to get an appointment"

Department:

Department menu contains about the classification of the disease distributed by *Department.* Checking with the different department patients can reach department wise doctors.

Doctors:

This menu refers the doctor's details. Patients can join with the doctors with social media as well as they can make an appointment at the free time.

Number of patients, number of stuffs, years of experiences and list of patients are well decorated in the section.

Blog:

The blog section is the place to publish blogs and getting testimonials. Different types of awareness about diseases, successes of the action and various kinds of notices or talks for public are published here.

Contact:

Contact section includes address, e-mail address, contact number, and website. Maps and little form included in this section to connect with the authority and users.

2.3. Scope of Problems:[2]

- Finalize the cost
- The frame of the project
- Features
- Functions
- Tasks
- High level requirements
- Assumptions
- Constraints
- Inclusions

2.4. Challenges:

The most important thing is to classify the doctors into their own department and get schedules from each doctors. Registration process / creating account. Reducing location complexity, scalability, User interface, user experience and security.

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CHAPTER 3

PROJECT METHODOLOGY

3.1. Introduction:

Project Methodology refers combination of logically related practices, methods and processes for best plan. For prediction based project this project has various types of approaches. It strictly defines logically related practices methods and processes of its own. Develop control, best plan and requirements also includes here. Implementation process, templates are declared here.

3.2. Implementation Requirement:

The process of building a website is its implementation design. In order to design a website this project also have implementation requirement. Requirements are given below:

Languages/ Algorithm:

- HTML5
- CSS
- Bootstrap
- PHP
- jQuery

Database in use:

- MySQL

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3.3. Project Process Model:

Collection of aids used to running this process is this project's processing model. This model includes graphical representation of workflows, roles and activities. [3]
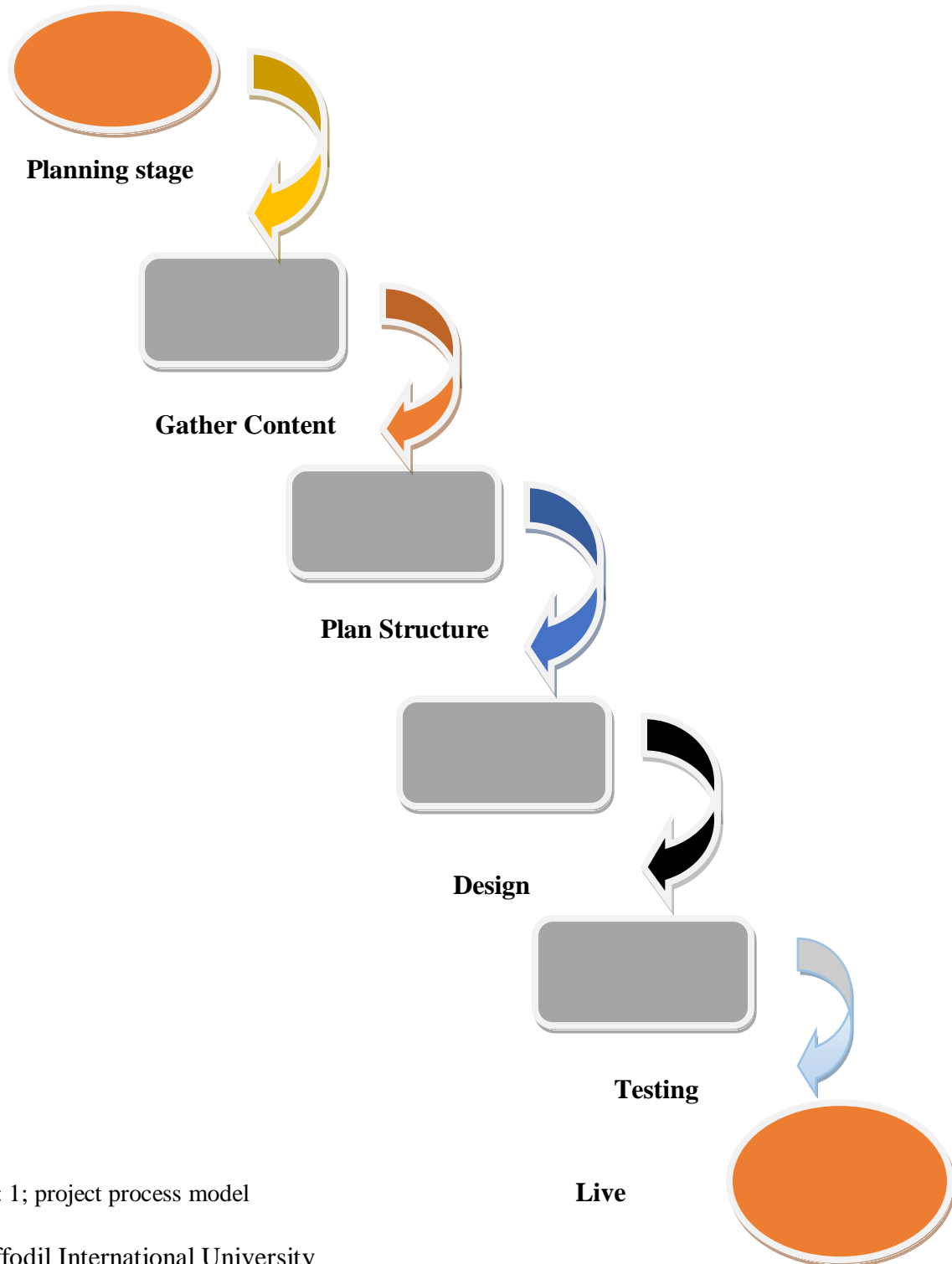
Planning stage

Gather Content

Plan Structure

Design

Testing

Live

Figure: 1; project process model

3.4Project Flow Chart:

User Registration/ Login

Choose Doctor

Make an appointment

Blogs

Got appointment/ Finish
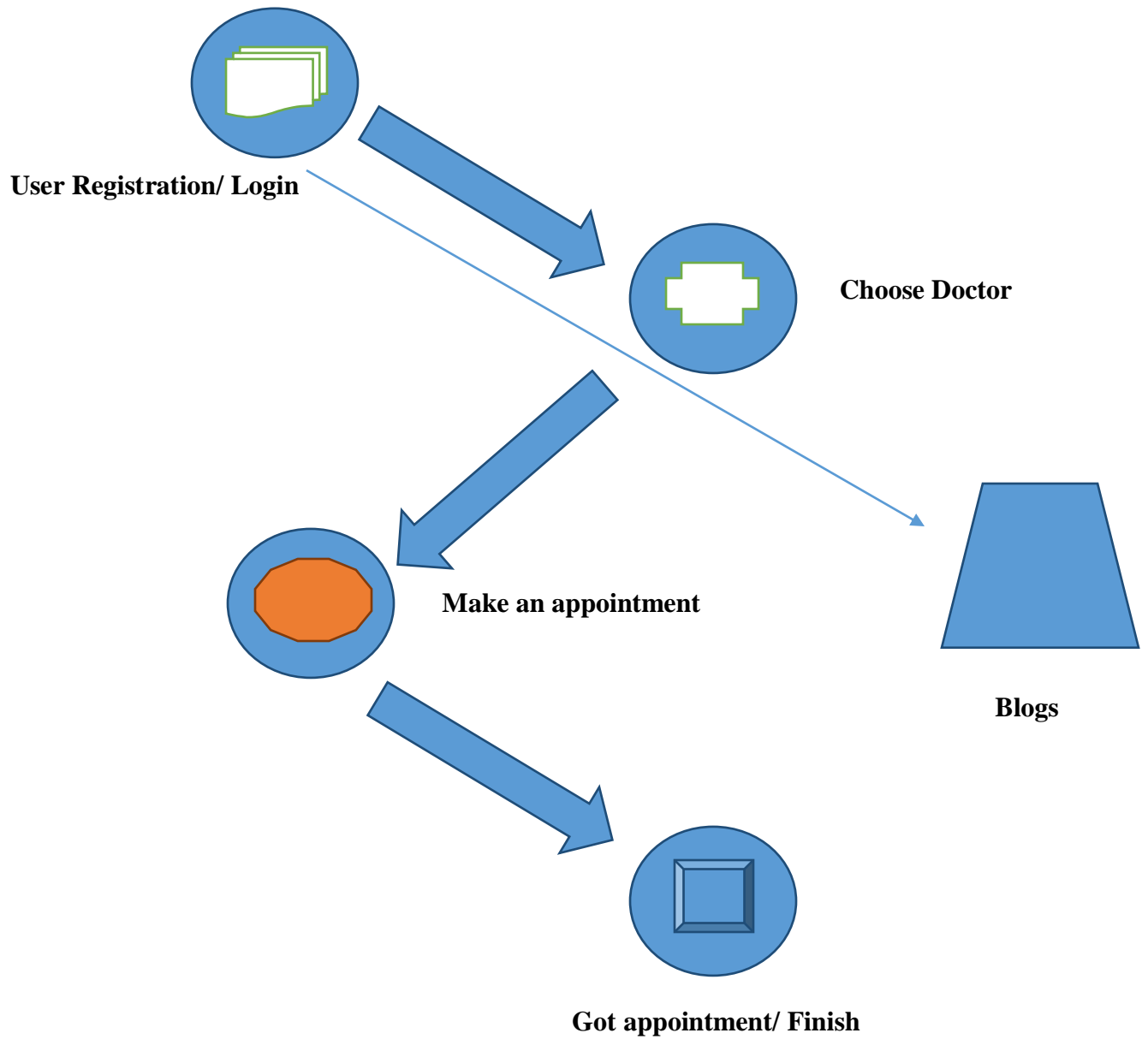
Figure: 2; project flow chart.

CHAPTER4
IMPLEMENTATION& Testing

4.1. Introduction:

Implementation code refers carrying out, execution, or practice of a plan of the codes of a project. Code implementation includes code efficiency, validation and optimization of code.

4.2. Code Efficiency:

The ratio of the average information per symbol to the average code length is the efficacy of a coding system and code efficiency is directly linked with algorithm efficiency. It is the most wanted element to ensuring high performance. Code efficiency is very needy element to enrich this project. [4].

4.3. Optimization of Code:

[7]Code optimization is an informal code analysis technique. Code optimization describes the interactions of elements of the project.

Code generation techniques and transformation that result in a semantically equivalent program that runs more efficiently

 -Faster

 -Uses less memory

 -Or both

Often involves a time-space tradeoff. Techniques that make the code faster often require additional memory and conversely

 -Local versus global optimizations

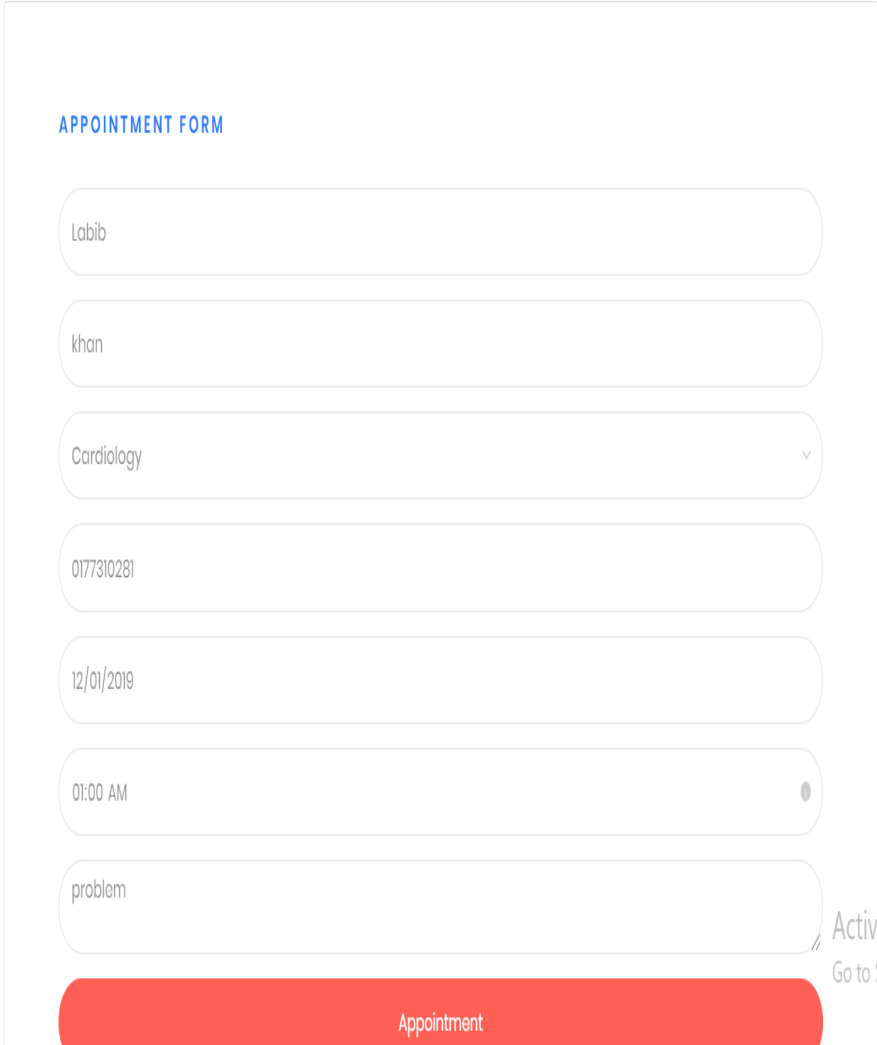-Optimizing compilers.[7]

4.4. Appointment Form:

Figure:3; Appointment form

4.5. Levels of Testing:[6]

- Interface Testing
- Usability Testing
- Functionality Testing
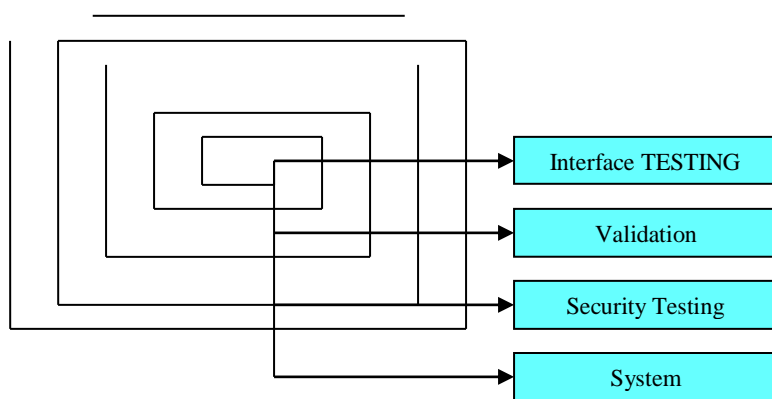- Compatibility Testing
- Performance Testing
- Security Testing

Figure:4;Some Levels Of Testing

4.6. System Testing: System testing consists of the following steps

1. Programs testing.

2. String testing.

3. System testing.

4. System documentation.

5. User acceptance testing.

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4.7. Testing Problem:

Testing is principle to the success of the system. It makes a very proven assumption that if all the parts of the system are correct, the goal will be achieved. Inadequate testing results in two types of problems:

1. Between the cause and the appearance of the problem the time lost.

2. The effect of the project errors on the files and records within the system.

Another cause for system testing is its utility as a user-oriented vehicle before implementation.[6]

CHAPTER 5

Design Specification

5.1. Introduction:

The study which refers whether the project should go ahead or not is called feasibility study. The study about the labor and material cost gives the possibility path likelihood of completing the project successfully. The study shows the result or ensures a project is legally and technically feasible.

5.2. Technical feasibility:

Concerned with specific equipment and software completely satisfy the patients requirement is technical feasibility of this project. Confirm the preferred solutions of the project, determine the technical feasibility. Materials, labor, physical location, transportation and technology refers the technical feasibility. It is important phase to develop a project activities highly. Cost structure can be reduced by this feasibility.

5.3. Economic feasibility:

Demonstrate the net benefit of this project is the economic feasibility. Taking into benefits and costs, consideration electronic funds also refers economic feasibility. This part takes as top management of the project. Other feasibility isn't preferable like economic feasibility. This is not necessarily difficult or expensive. The organization is most satisfied in the system by economic feasibility.

The project costs and revenue calculated by economic feasibility if it is logical or possible to complete. In order to cut unnecessary expenses it often includes a cost.

5.4. Database Management System:

[5]A software package in a database designed to define manipulate retrieve and manage data is a Database Management System. Rules to Validate record structure is also contains in Database Management System. In this project **MySQL** is used to record data and classification distributed in the spreadsheet. A database management system (DBMS) is system software for manufacturing and leading databases. The DBMS shift users and programmers with a methodical way to make, restore, update and manage data. In our application we used MySQL. Database design is the process of producing a detail data model of database. This data model hold all the requirement logical and physical design option and physical storage parameters want to generate a design in a data decision language, which can then be used to made a database. A fully attributed data model holds through attributes for each entity.

A database collects and stores data in such organized way that data requirements are satisfied by the database. The common purpose is to make information entry easy, fast, Cheap and flexible for the user. There are also some specific objectives like controller redundancy from failure, privacy, security and performance. A collection of relative records makes up a table. To graph and store data to the needed forms database tables are made. [5].

5.5. MySQL

MySQL is the most popular open generation relational SQL database management system. MySQL is one of the best RDBMS being used for increasing web-based software applications. We are using MySQL as database in our proposed system. It's cost effective. There is no doubt that Oracle create terrific database but the cost involved will be prohibitive for many MySQL is free. It can be installed and used but pay nothing in the process. That is why we prefer MySQL in our project.
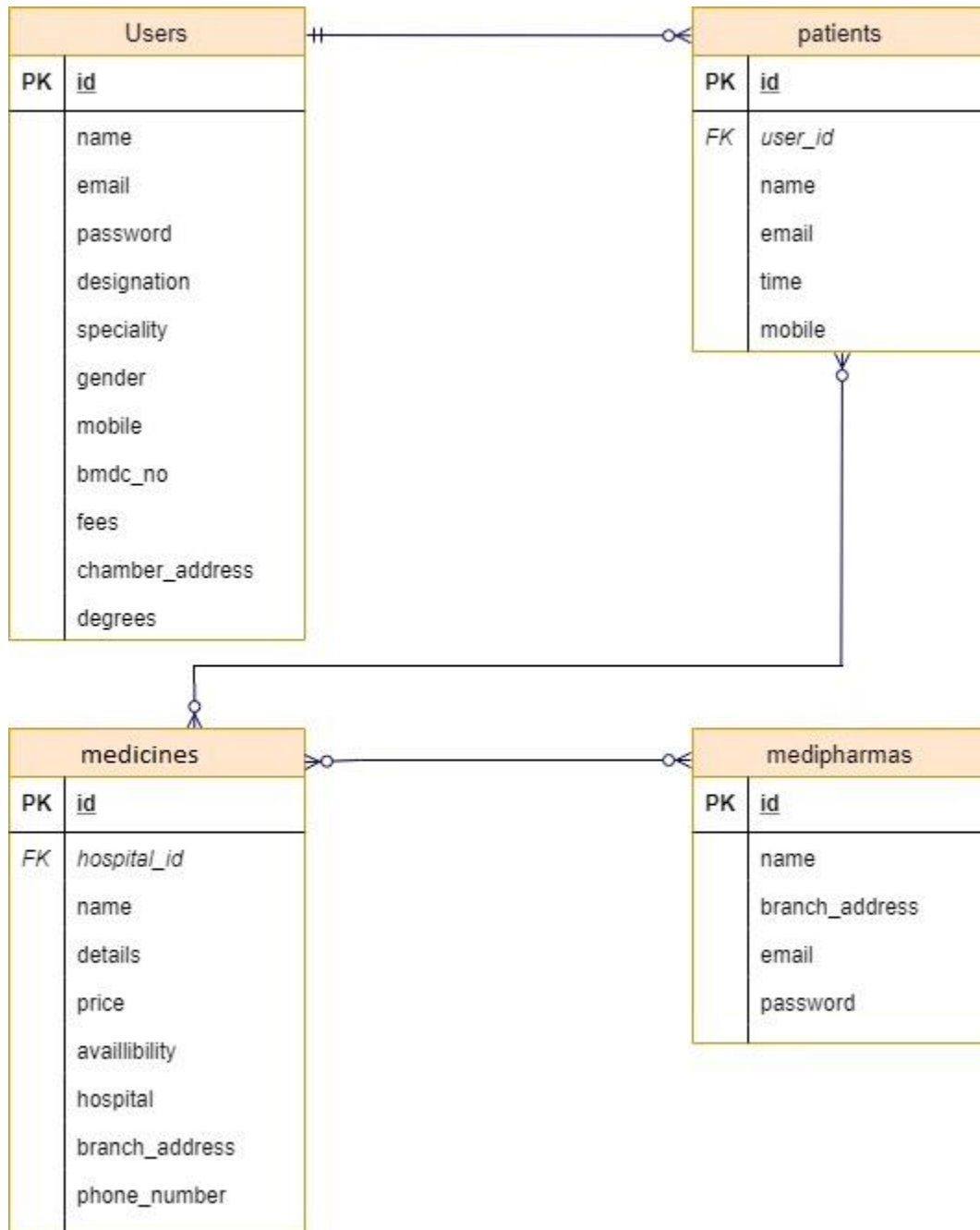
5.6. E-R Model:

Figure:5; E-R Model

5.7. Database Table:

Figure:6; Database table

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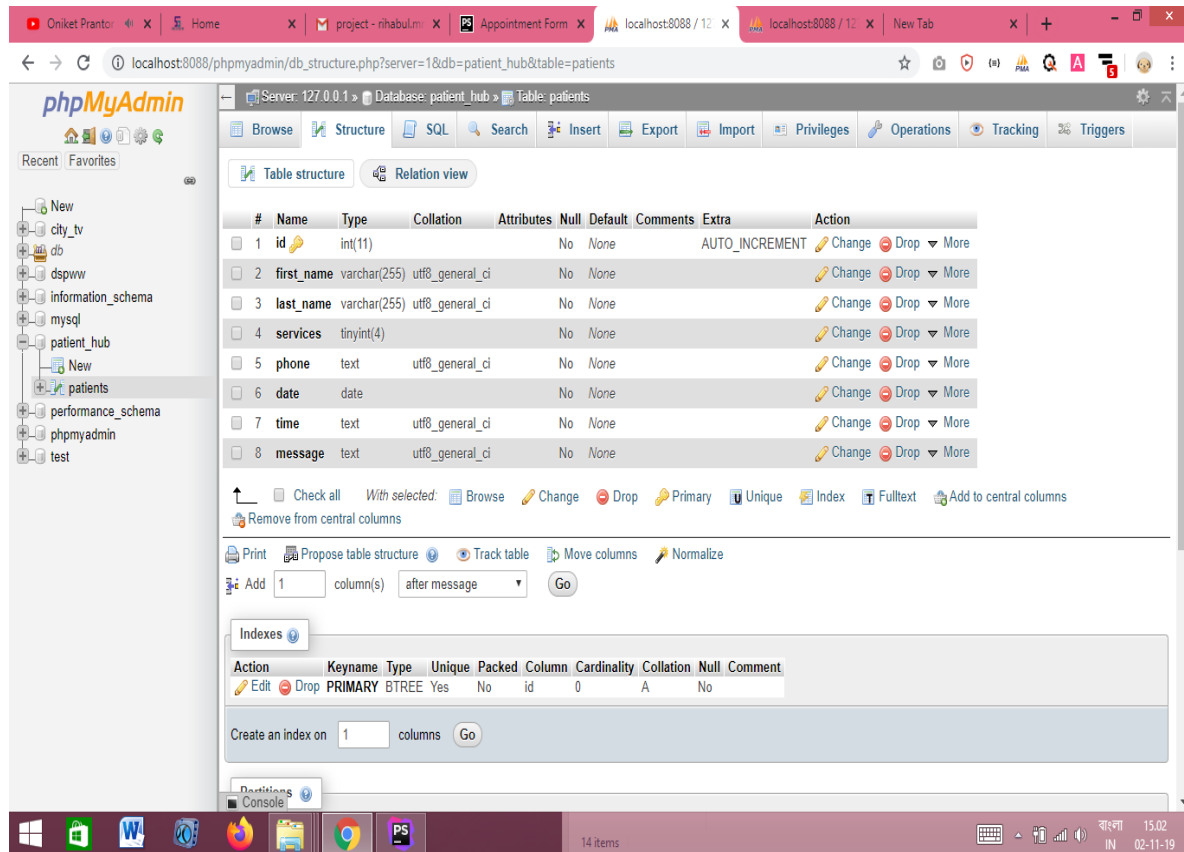
5.8. Database Table:

Figure:7; Database table

5.9. Database Table:

Figure:8; Database table

CHAPTER 6

CONCLUSION& FUTURE SCOPE

6.1. Conclusion:

The web project is complete for the patients whom are looking for an appointment a doctor by an easy way .By using this user can easily find the doctor who is he looking for. It's also save time & money of a patients. Summarize the project, it has been an excellent experience in many ways. The entire project satisfied us in various given areas. We have gained an insight which represents a typical real world situation. In order to generate final year reports of database designing our understanding of database design has been strengthened. Confidence of handling real life project has increased to a great extent. Sense of teamwork has developed in a new scale. A strong sense of time management built by scheduling this project. Initially we have some problem through some issues, but with discussions we have successfully did it.

6.2.Limitations:

In this world everything we created have some limitations. Our application has some limitations. Some of the main limitations are-.

- We develop our application only for web.

- We implemented this application using our own host.

- We use mail trap for email verification. Template selection complexity.

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6.3. Future Scope:

This project has various types of future scopes. This project can be connect with health ministry and central patient database of the country and central research labs. This website can hold patients total data, previous or now and futures too. Patients portal would be enrich and doctors can refers a doctor at a glance by checking patient's condition.

- We wanted to build our application for android, IPhone and for all the operating system.

- Our application's data needs more storage in future, so we will add this with larger database system such as Oracle Database or Microsoft SQL Server.

- We add some feature like online payment and other advance level feature.

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References:

[1] "Rationale of the project" [Online].

Available:https://www.w3schools.com/css/default.asp[Retrievedon09June 2019]

[2] "Background information (partially)" [Online].

Available:https://getbootstrap.com/docs/4.3/components/alerts/[Retrievedon15June 2019]

[3] "Project Process Model" theme. [Online].

Available:https://www.practo.com/[Retrievedon12July 2019]

[4] "Code Efficiency" Code Efficiency [Online].

Available:https://www.tutorialspoint.com/index.htm[Retrievedon28 July 2019]

[5] "Database Management System" [Online].

Available:https://www.techopedia.com/definition/24361/database-management-systems-dbms[Retrievedon09August 2019]

[6]"Testing Phase (partially)" [Online]. Available:https://www.codecademy.com/learn/make-a-website[Retrievedon15 September 2019]

[7]" Code Optimization"[online]

available:https://www.google.com/search?q=code+optimization&oq=code+op&aqs=chrome.1.69i57j0l5.5283j0j8&sourceid=chrome&ie=UTF-8[Retrievedon05 Octobor 2019]

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