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Department of Computer Science and Engineering

CERTIFICATE

This is to certify that project work entitled "**MEDICAL CARE MANAGEMENT SYSTEM"** is a bonafied work carried out by **Mr. V MANIKANTA SANJAY (1JS17CS113) and Mr.SUYOG P (1JS17CS107)** in partial fulfillment for the DBMS Laboratory with Mini Project (17CSL58) of 5th – semester **Bachelor of Engineering in Computer Science and Engineering** of the **Visvesvaraya Technological University, Belagavi** during the academic year 2019 – 2020. It is certified that all corrections and suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

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Name of the Examiners	**Signature with Date**
1)……………………………….	**………………………..**
2)……………………………….	**………………………..**

ABSTRACT

The purpose of the project entitled as “MEDICAL CARE MANAGEMENT SYSTEM” is to computerize the Front Office Management of Hospital to develop software which is user friendly simple, fast, and cost – effective. It deals with the collection of patient’s information, diagnosis details, etc. Traditionally, it was done manually. The main function of the system is register and store patient details and doctor details and retrieve these details as and when required, and also to manipulate these details meaningfully System input contains patient details, diagnosis details, while system output is to get these details on to the screen. The Hospital Management System can be entered using a username and password. It is accessible either by an administrator or receptionist. Only they can add data into the database. The data can be retrieved easily. The data are well protected for personal use and makes the data processing very fast.

ACKNOWLEDGEMENTS

We express our humble pranamams to his holiness **Jagadguru Sri Sri Sri Shivarathri Deshikendra Mahaswamiji** who has showered their blessings on us for framing our career successfully.

The completion of any project involves the efforts of many people. We have been lucky enough to have received a lot of help and support from all quarters during the making of this project, so with gratitude, we take this opportunity to acknowledge all those whose guidance and encouragement helped us emerge successful.

We are thankful to the resourceful guidance, timely assistance and graceful gesture of our guide **Mr. Rohitaksha K**, Assistant Professor, Department of Computer Science and Engineering who has helped us in every aspect of our project work.

We are also indebted to **Dr Naveen N C,** Head of Department of Computer Science and Engineering for the facilities and support extended towards us.

We express our sincere thanks to our beloved principal**, Dr. Mrityunjaya V Latte** for having supported us in our academic endeavors.

And last but not the least, we would be very pleased to express our heart full thanks to all the teaching and non-teaching staff of CSE department and our friends who have rendered their help, motivation and support.

V MANIKANTA SANJAY

SUYOG P

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Chapter 1

Preamble

1.1 INTRODUCTION

Medical Care Information management system is a web application developed for hospitals to manage staff data and patients data effectively. the main aim of developing "MEDICAL CARE INFORMATION MANAGEMENT SYSTEM" is to computerize the Front Office Management of Hospital. Medical Care Information Management System is designed for multi-specialty hospitals, to cover a wide range of hospital administration and management processes. The project Medical Care Information system includes registration of patients, storing their details into the system, and also computerized billing in the pharmacy, and labs. Medical care is a field in which accurate record keeping and communication are critical. The software has the facility to give a unique id for every patient and stores the details of every patient and the staff automatically. With the increase of demand in hospitals, we need effective data management system for handling patient's data, staff data and treatment details in an effective way. It would also help in the complexity of maintaining the records manually and thus less time is wasted on rework. The system is used to enter the patient details and to enter the details about the medical center and the details about the in-patient and out-patient in detail and about the reports of the patients . User can login into the The Medical Care Information Management System using a username and password. To develop a Medical Care Information Management system, we take care of patient registration, drug information and concerns such as drug inquiries and complaints.

1.1.1 History of Database Management System

Following the technology progress in the areas of processors, computer memory, computer storage, and computer networks, the sizes, capabilities, and performance of databases and their respective DBMSs have grown in orders of magnitude. The development of database technology can be divided into three eras based on data model or structure: navigational, SQL/relational, and post-relational. The two main early navigational data models were the hierarchical model, epitomized by IBM's IMS system, and the CODASYL model (network model), implemented in a number of products such as IDMS.

The relational model employs sets of ledger-style tables, each used for a different type of entity. Only in the mid-1980s did computing hardware become powerful enough to allow the wide deployment of relational systems (DBMSs plus applications). By the early 1990s, however, relational systems dominated in all large-scale data processing applications, and as of 2015 they remain dominant: IBM DB2, Oracle, MySQL, and Microsoft SQL Server are the top DBMS. The dominant database language, standardized SQL for the relational model, has influenced database languages for other data models.

1.1.2 MySQL

MySQL is an open-source relational database management system (RDBMS). MySQL is written in C and C++. Its SQL parser is written in yacc, but it uses a home-brewed lexical analyzer. MySQL works on many system platforms, including Linux, macOS, Microsoft Windows, NetBSD. MySQL is offered under two different editions: the open source MySQL Community Server and the proprietary Enterprise Server. MySQL Enterprise Server is differentiated by a series of proprietary extensions which install as server plugins, but otherwise shares the version numbering system and is built from the same code base.

Major features that are available in MySQL are a broad subset of ANSI SQL 99,as well as extensions, Cross-platform support, Stored procedures, using a procedural language that closely adheres to SQL/PSM, Triggers, Cursors, Updatable views, Online DDL when using the

InnoDB Storage Engine. Many programming languages with language-specific APIs include libraries for accessing MySQL databases. These include MySQL Connector/Net for integration with Microsoft's Visual Studio and the JDBC driver for Java. In addition, an ODBC interface called MySQL Connector/ODBC allows additional programming languages that support the ODBC interface to communicate with a MySQL database, such as ASP or ColdFusion.

1.1.3 HTML,CSS

Hypertext Markup Language (**HTML**) is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript.

Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are delineated by *tags*, written using angle brackets.

1.1.4 JSP

JavaServer Pages (JSP) is a technology for developing Webpages that supports dynamic content. This helps developers insert java code in HTML pages by making use of special JSP tags, most of which start with <% and end with %>.

A JavaServer Pages component is a type of Java servlet that is designed to fulfill the role of a user interface for a Java web application. Web developers write JSPs as text files that combine HTML or XHTML code, XML elements, and embedded JSP actions and commands.

Using JSP, you can collect input from users through Webpage forms, present records from a database or another source, and create Webpages dynamically.

JSP tags can be used for a variety of purposes, such as retrieving information from a database or registering user preferences, accessing JavaBeans components, passing control between pages, and sharing information between requests, pages etc.

JavaServer Pages often serve the same purpose as programs implemented using the **Common Gateway Interface (CGI)**. But JSP offers several advantages in comparison with the CGI.

- Performance is significantly better because JSP allows embedding Dynamic Elements in HTML Pages itself instead of having separate CGI files.
- JSP are always compiled before they are processed by the server unlike CGI/Perl which requires the server to load an interpreter and the target script each time the page is requested.
- JavaServer Pages are built on top of the Java Servlets API, so like Servlets, JSP also has access to all the powerful Enterprise Java APIs, including **JDBC, JNDI, EJB, JAXP,** etc.

1.1.5 Normalization

Normalization is a process of organizing the data in database to avoid data redundancy, insertion anomaly, update anomaly & deletion anomaly. To overcome these anomalies we need to normalize the data. There are 4 basic types of normalizations. They are:

- First normal form(1NF)
- Second normal form(2NF)
- Third normal form(3NF
- Boyce & Codd normal form (BCNF)

A relation is in first normal form if and only if the domain of each attribute contains only atomic (indivisible) values, and the value of each attribute contains only a single value from that domain

A table is said to be in 2NF if the two conditions stated are satisfied. The table is in First normal form and all the non-prime attribute are dependent on the proper subset of any candidate key of table. The attribute that is not part of any candidate key are known as non-prime attribute.

A table design is said to be in 3NF if the table is in 2NF and Transitive functional dependency of non-prime attribute on any super key are removed.

A database table is in BCNF if and only if there are no non-trivial functional dependencies of attributes on anything other than a superset of a candidate key.

BCNF is also sometimes referred to as 3.5NF, or 3.5 Normal Form.

1.3 Existing System:

Hospitals currently use a manual system for the management and maintenance of critical information. The current system requires numerous paper forms, with data stores spread through out the hospital management infrastructure. Often information is incomplete or does not follow management standards. Forms are often lost in transit between departments requiring a comprehensive auditing process to ensure that no vital information is lost. Multiple copies of the same information exist in the hospital and may lead to inconsistencies in data in various data stores.

Drawback:

- Paperback records are hard to maintain.
- Searching for a doctor can be gruesome task.
- Doesn’t provide Security.
- Difficulty in updating the records.
- More manual hours is needed to maintain the records.

One way to overcome all these difficulties is so store all the information in database. The computerization helps mitigate a lot of drawback and streamlines the process.

Proposed System:

Performance management system is to replace the existing manual system with a software solution. It allows all the employees in different sections of the company to work together and manage a single record.
Different areas of the medication can be managed in different areas by different people.

Other Computerized System advantages:

- Faster processing
- Centralized database helps in avoiding conflicts.
- Easy to use GUI that does not require specific training.

1.3 OBJECTIVES

Healthcare management has huge demand these days as it really helps in managing a hospital or a medical office. The scope of Healthcare Management systems is increasing by each day and it is true for the entire world. Healthcare Management solutions are more than one factor that contributes to the increasing demand in the healthcare sector. Some of these solutions include improved awareness about Healthcare Management services, health policies and enhancement in the demand for world class health care facilities in Hospital management Asia. In an ever-changing world, healthcare management is essential to compete in the industry in providing better care to patients.The main objectives of this system can be summarized as follows:

- Design of a GUI for Medical management.
- Insertion of patients
- Computerized management.

Easy management of databases of various sections covering key aspects

.

1.4 Summary

The chapter discussed before is an overview about the JSP Application and MySQL DBMS and its history. The scope of study and objectives of the project are mentioned clearly. The organization of the report is been pictured to increase the readability. Further, coming up chapters depicts the use of various queries to implement various changes like insert, update, delete and also triggers and stored procedures to perform various functions.

Chapter 2

Requirements Specifications

2.1 SOFTWARE SPECIFICATION

- Operating System: Windows 2000/XP/Vista
- Front End : Html,CSS
- Database : MySQL Workbench
- Server: Tomcat
- Back End : JSP

2.2 HARDWARE SPECIFICATION

- Processor: x86 compatible processor with 1.7 GHz Clock Speed
- RAM: 512 MB or greater
- Hard Disk: 20 GB or grater
- Monitor: VGA/SVGA
- Keyboard: 104 keys standard
- Mouse: 2/3 button. Optical/Mechanical.

2.3 USER CHARACTERISTICS

Every user:

- Should be comfortable with basic working of the computer
- Must have been knowledge of English
- Must carry a login ID and password used for authentication
- The GUI is restricted to English
- Login ID and password used for identification of administrator. There is no facility for a guest login.

Chapter 3

System Design and Implementation

3.1 Introduction

Systems design is the process or art of defining the architecture, components, modules, interfaces, and data for a system to satisfy specified requirements. One could see it as the application of systems theory to product development.

This Project is implemented using MYSQL, which is proven to be a very efficient tool in the field of programming. It is done under Windows10 platform. . JSP programming language is used to implement the entire code. Interface to the program is provided with the help of MySQL.

Medical Care Information management system is a web application developed for hospitals to manage staff data and patients data effectively. The main aim of developing "MEDICAL CARE INFORMATION MANAGEMENT SYSTEM" is to computerize the Front Office Management of Hospital. Medical Care Information Management System is designed for multi-specialty hospitals, to cover a wide range of hospital administration and management processes. The project Medical Care Information system includes registration of patients, storing their details into the system, and also computerized billing in the pharmacy, and labs. Medical care is a field in which accurate record keeping and communication are critical. The software has the facility to give a unique id for every patient and stores the details of every patient and the staff automatically. With the increase of demand in hospitals, we need effective data management system for handling patient's data, staff data and treatment details in an effective way. It deals with the collection of patient's information, diagnosis details, etc

3.2 ER Diagram.

An entity–relationship model (ER model) describes inter-related things of interest in a specific domain of knowledge. An ER model is composed of entity types (which classify the things of interest) and specifies relationships that can exist between instances of those entity types.

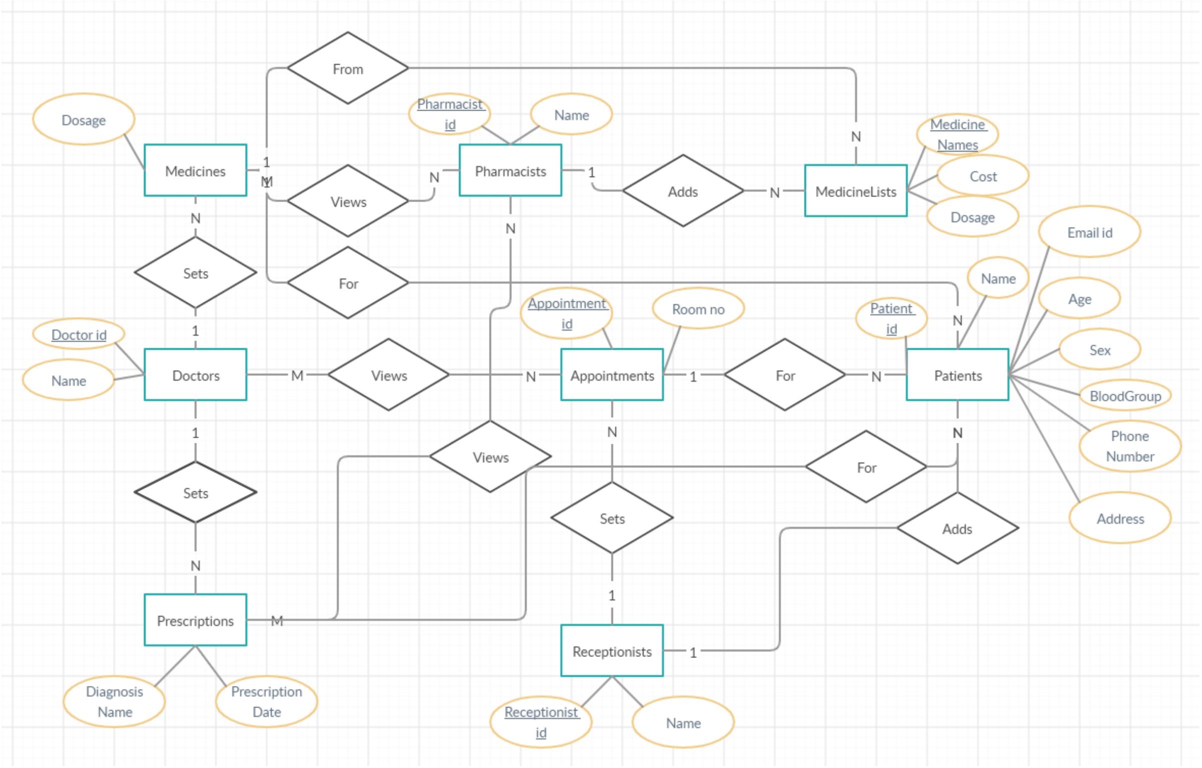


Figure 3.1: **Entity Relationship Diagram**

Figure 3.1 refers to the Entity Relationship diagram utilized in our project

3.3 Schema Diagram.

The database schema of a database system is its structure described in a formal language supported by the database management system (DBMS). The term "schema" refers to the organization of data as a blueprint of how the database is constructed (divided into database tables in the case of relational databases). The formal definition of a database schema is a set of formulas (sentences) called integrity constraints imposed on a database.

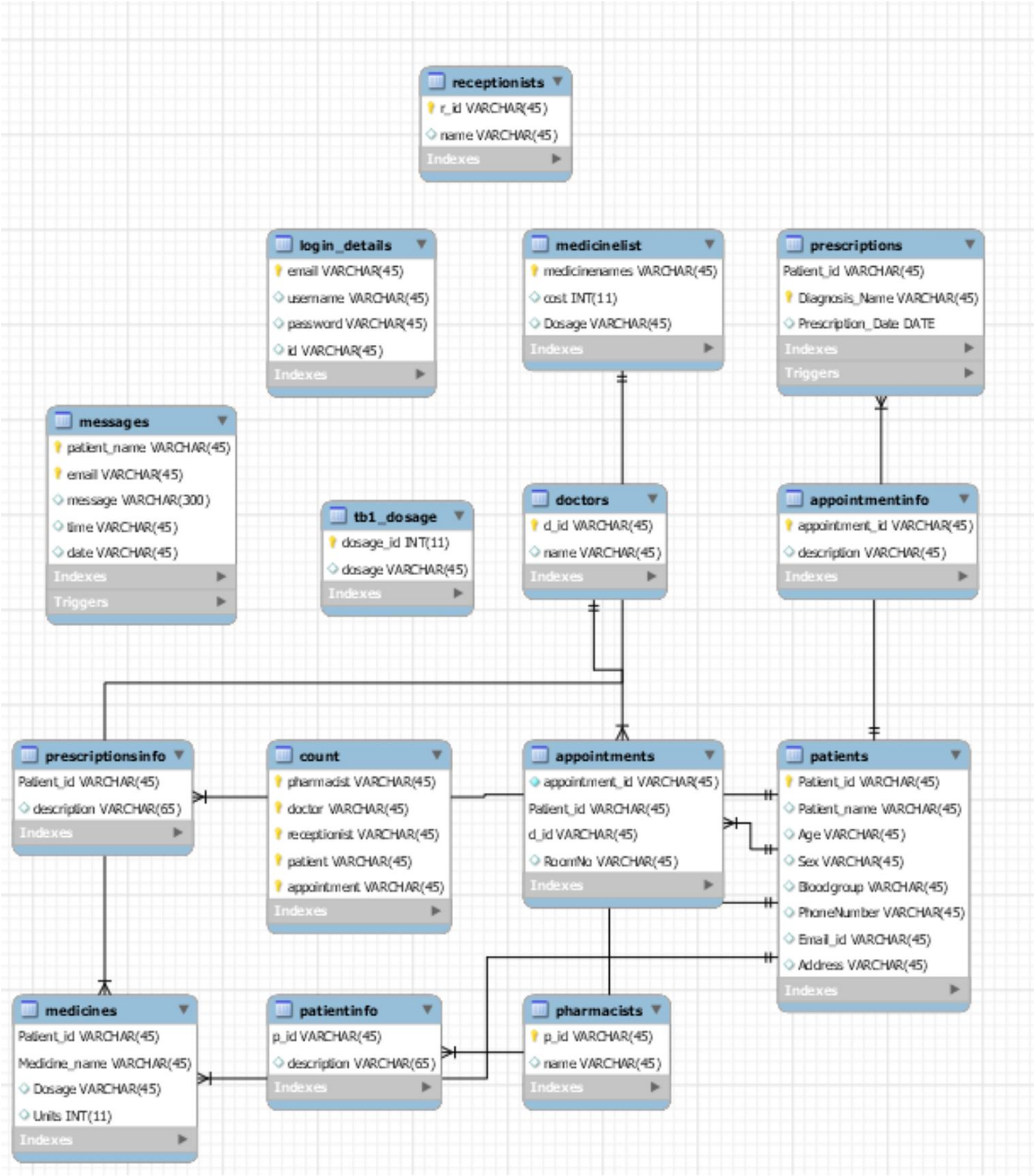


Figure 3.2: **Schema Diagram**

3.4 SQL tables implemented in database

The below mentioned are all the queries used to perform various tasks in MySQL such as insert, delete, update. A short description of the query is also provided.

CREATE STATEMENTS

Query: CREATE TABLE `count` (

`pharmacist` varchar(45) NOT NULL,

`doctor` varchar(45) NOT NULL,

`receptionist` varchar(45) NOT NULL,

`patient` varchar(45) NOT NULL, `appointment` varchar(45) NOT NULL,

PRIMARY KEY (`pharmacist`,`doctor`,`receptionist`,`patient`,`appointment`)

Description: This query is used to create a table called to create unique id's for pharmacist`,`doctor`,`receptionist`,`patient`,`appointment.

Query: CREATE TABLE `login_details` (

`email` varchar(45) NOT NULL,

`username` varchar(45) DEFAULT NULL,

`password` varchar(45) DEFAULT NULL,

`id` varchar(45) DEFAULT NULL,

PRIMARY KEY (`email`))

Description: This query is used to create login credentials.

Query :CREATE TABLE `doctors` (

`d_id` varchar(45) NOT NULL,

`name` varchar(45) DEFAULT NULL,

PRIMARY KEY (`d_id`))

Description: This query is used to create a table that provides doctor details.

Query: CREATE TABLE `pharmacists` (

`p_id` varchar(45) NOT NULL,

`name` varchar(45) DEFAULT NULL,

PRIMARY KEY (`p_id`)) ;

Description: This query is used to create a table that provides pharmacist details.

Query: CREATE TABLE `receptionists`(

`r_id` varchar(45) NOT NULL,

‘name` varchar(45) DEFAULT NULL,

PRIMARY KEY (`r_id`))

Description: This query is used to create a table that provides receptionist details.

Query: CREATE TABLE `patients` (

`Patient_id` varchar(45) NOT NULL,

`Patient_name` varchar(45) DEFAULT NULL,

`Age` varchar(45) DEFAULT NULL,

`Sex` varchar(45) DEFAULT NULL,

`Bloodgroup` varchar(45) DEFAULT NULL,

`PhoneNumber` varchar(45) DEFAULT NULL,

`Email_id` varchar(45) DEFAULT NULL,

`Address` varchar(45) DEFAULT NULL,

PRIMARY KEY (`Patient_id`))

Description: This query is used to create a table which is used by receptionist to add patient credentials.

Query: 'CREATE TABLE `patientinfo` (

`p_id` varchar(45) NOT NULL,

`description` varchar(65) DEFAULT NULL,

PRIMARY KEY (`p_id`))

Description: This query is used to create a table that provides additional description about patients.

Query: CREATE TABLE `appointments` (

`appointment_id` varchar(45) NOT NULL,

`Patient_id` varchar(45) NOT NULL,

`d_id` varchar(45) NOT NULL,

`RoomNo` varchar(45) DEFAULT NULL,

PRIMARY KEY (`Patient_id`,`d_id`),

UNIQUE KEY `RoomNo_UNIQUE` (`RoomNo`),

KEY `d_id_idx` (`d_id`),

CONSTRAINT `Patient_id` FOREIGN KEY (`Patient_id`) REFERENCES `patients` (`Patient_id`) ON DELETE CASCADE,

CONSTRAINT `d_id` FOREIGN KEY (`d_id`) REFERENCES `doctors` (`d_id`) ON DELETE CASCADE)

Description: This query is used to create a table which adds appointments for the patients.

Query: CREATE TABLE `appointmentinfo` (

`appointment_id` varchar(45) NOT NULL,

`description` varchar(45) DEFAULT NULL,

PRIMARY KEY (`appointment_id`))

Description: This query is used to create a table that gives additional information about the Appointments.

Query: CREATE TABLE `prescriptions` (

`Patient_id` varchar(45) NOT NULL,

`Diagnosis_Name` varchar(45) NOT NULL,

`Prescription_Date` date DEFAULT NULL,

PRIMARY KEY (`Patient_id`,`Diagnosis_Name`),

CONSTRAINT `patient_13` FOREIGN KEY (`Patient_id`) REFERENCES `patients` (`Patient_id`) ON DELETE CASCADE)

Description: This query is used to create a table that provides prescriptions for the patients.

Query: CREATE TABLE `prescriptionsinfo` (

`Patient_id` varchar(45) NOT NULL,

`description` varchar(65) DEFAULT NULL,

PRIMARY KEY (`Patient_id`),

CONSTRAINT `patient12` FOREIGN KEY (`Patient_id`) REFERENCES `patients` (`Patient_id`) ON DELETE CASCADE)

Description: This query is used to create a table that provides additional information about the prescriptions.

Query: CREATE TABLE `medicinelist` (

`medicinenames` varchar(45) NOT NULL,

`cost` int(11) DEFAULT NULL,

`Dosage` varchar(45) DEFAULT NULL,

PRIMARY KEY (`medicinenames`))

Description: This query is used to create a table that provides information about the various medicines,their cost and dosage.

Query:
```
CREATE TABLE `medicines` (
 `Patient_id` varchar(45) NOT NULL,
 `Medicine_name` varchar(45) NOT NULL,
 `Dosage` varchar(45) DEFAULT NULL,
 `Units` int(11) DEFAULT NULL,
  PRIMARY KEY (`Patient_id`,`Medicine_name`),
  KEY `med_2_idx` (`Medicine_name`),
CONSTRAINT `Patient_id1` FOREIGN KEY (`Patient_id`) REFERENCES `patients` (`Patient_id`) ON DELETE CASCADE ON UPDATE RESTRICT,
 CONSTRAINT `med_2` FOREIGN KEY (`Medicine_name`) REFERENCES `medicinelist` (`medicinenames`) ON DELETE CASCADE )
```

Description: This query is used to create a table that provides medication for the prescription created.

Query:
```
CREATE TABLE `messages` (
 `patient_name` varchar(45) NOT NULL,
`email` varchar(45) NOT NULL,
 `message` varchar(300) DEFAULT NULL,
 `time` varchar(45) DEFAULT NULL,
 `date` varchar(45) DEFAULT NULL,   PRIMARY KEY (`patient_name`,`email`) )
```

Description: This query is used to create a table that provides notifications to be viewed by the receptionist.

ALTER STATEMENTS

These alter table queries are being used to add foreign key references from one table to another. Also, the on delete constraints(set null/cascade) are used to update these foreign key values if their respective parent key values are deleted.

```
Alter table Medicines CONSTRAINT `med_2` FOREIGN KEY (`Medicine_name`)
REFERENCES `medicinelist` (`medicinenames`) ON DELETE CASCADE )
```

Description : This alter table query adds a foreign key in Medicines referencing medicine list.

3.4.1 TRIGGERS

The MySQL trigger is a database object that is associated with a table. It will be activated when a defined action is executed for the table. The trigger can be executed when you run one of the following MySQL statements on the table: INSERT, UPDATE and DELETE and it can be invoked before or after the event**.**

Trigger:

```
CREATE DEFINER=`root`@`localhost` TRIGGER
`prescriptions_BEFORE_INSERT` BEFORE INSERT ON `prescriptions`
FOR EACH ROW
BEGIN
SET NEW.Prescription_Date = now();
END
```

Description: This trigger is used to set the prescription date before insertion into the prescription table.

Trigger:

```
CREATE DEFINER=`root`@`localhost` TRIGGER
`messages_BEFORE_INSERT` BEFORE INSERT ON `messages`
FOR EACH ROW
BEGIN
SET NEW.time=current_time();
SET NEW. date=current_date();
END
```

Description: This trigger is used to set the date and time for the notification message before insertion into the messages table.

3.4.2 STORED PROCEDURES

A procedure (often called a stored procedure) is a subroutine like a subprogram in a regular computing language, stored in database. A procedure has a name, a parameter list, and SQL statement(s).

```
CREATE DEFINER=`root`@`localhost`

PROCEDURE `complete_proc`(INOUT email1 varchar(45),OUT message1 varchar(300))

BEGIN

select message into message1 from messages where email = email1;

END
```

Description: This procedure will display all the notification message to the receptionist.

3.5 Pseudo codes for Insurance Management

3.5.1 Algorithm for login

```
Step 1: BEGIN

Step 2: Enter username and password

Step 3: Verify the credentials entered

Step 4: If Credentials match, then proceed to the next

            Else show login failed

Step 5: End if

Step 6: END
```

3.5.2 Algorithm to Insert

Step1: BEGIN

Step 2: Get all the necessary values required for insertion into variable defined in the method.

Step 3: Define the query for insertion.

Step 4: Execute the query by explicitly calling the stored procedure.

Step 5:END

3.5.3 Algorithm to Delete

Step 1: BEGIN

Step 2: Get the patient details which is to be deleted in the method.

Step 3: Define the query for deleting as stated above.

Step 4: Execute the query.

Step 5: END

3.5.4 Algorithm to update

Step 1: BEGIN

Step 2: Get the necessary values required for updating the values into the variables defined in the method.

Step 3: Define the query for updating.

Step 4: Execute the query.

Step 5: END

3.5.5 Algorithm for Display

Step 1: BEGIN

Step 2: Establish the connection with the database using the username and password.

Step 3: Define the Arraylist to return all values from the method passed.

Step 4: Define the selected query.

Step 5: Define the DefaultTableModel for the table and use the arraylist created created to display all the values stored in the table.

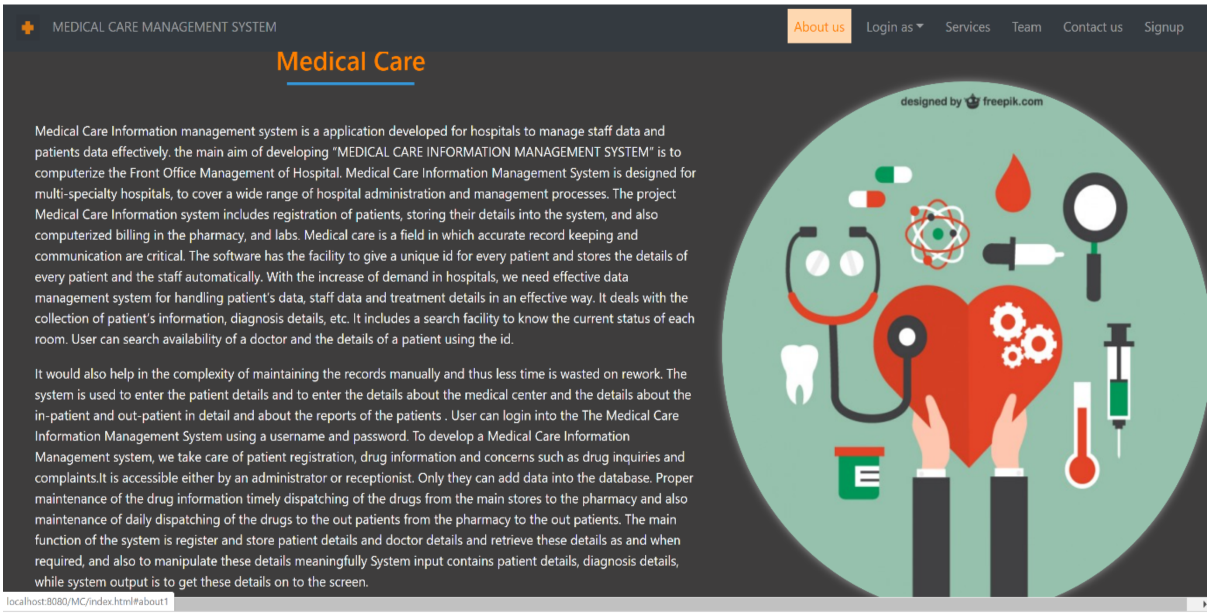
Step 5: END

Chapter 4

Results and Discussions

The project is compiled and executed on chrome. Some screen shots are present here to show the working of the application.

ScreenShots:



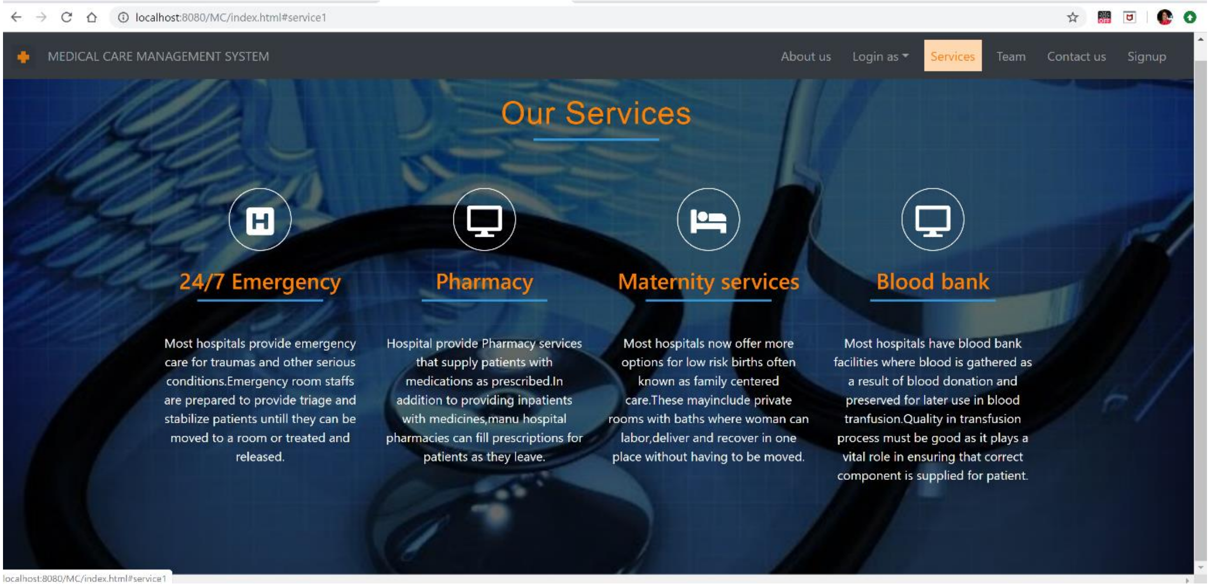
Medical Care

Medical Care Information management system is a application developed for hospitals to manage staff data and patients data effectively. the main aim of developing "MEDICAL CARE INFORMATION MANAGEMENT SYSTEM" is to computerize the Front Office Management of Hospital. Medical Care Information Management System is designed for multi-specialty hospitals, to cover a wide range of hospital administration and management processes. The project Medical Care Information system includes registration of patients, storing their details into the system, and also computerized billing in the pharmacy, and labs. Medical care is a field in which accurate record keeping and communication are critical. The software has the facility to give a unique id for every patient and stores the details of every patient and the staff automatically. With the increase of demand in hospitals, we need effective data management system for handling patient's data, staff data and treatment details in an effective way. It deals with the collection of patient's information, diagnosis details, etc. It includes a search facility to know the current status of each room. User can search availability of a doctor and the details of a patient using the id.

It would also help in the complexity of maintaining the records manually and thus less time is wasted on rework. The system is used to enter the patient details and to enter the details about the medical center and the details about the in-patient and out-patient in detail and about the reports of the patients . User can login into the The Medical Care Information Management System using a username and password. To develop a Medical Care Information Management system, we take care of patient registration, drug information and concerns such as drug inquiries and complaints.It is accessible either by an administrator or receptionist. Only they can add data into the database. Proper maintenance of the drug information timely dispatching of the drugs from the main stores to the pharmacy and also maintenance of daily dispatching of the drugs to the out patients from the pharmacy to the out patients. The main function of the system is register and store patient details and doctor details and retrieve these details as and when required, and also to manipulate these details meaningfully System input contains patient details, diagnosis details, while system output is to get these details on to the screen.

Figure 4.1 About us page

The above figure refers to about us page which gives a brief description of the project.


localhost:8080/MC/index.html#service1
MEDICAL CARE MANAGEMENT SYSTEM
About us
Login as
Services
Team
Contact us
Signup
localhost:8080/MC/index.html#service1

Our Services

24/7 Emergency

Most hospitals provide emergency care for traumas and other serious conditions.Emergency room staffs are prepared to provide triage and stabilize patients untill they can be moved to a room or treated and released.

Pharmacy

Hospital provide Pharmacy services that supply patients with medications as prescribed.In addition to providing inpatients with medicines,manu hospital pharmacies can fill prescriptions for patients as they leave.

Maternity services

Most hospitals now offer more options for low risk births often known as family centered care.These mayinclude private rooms with baths where woman can labor,deliver and recover in one place without having to be moved.

Blood bank

Most hospitals have blood bank facilities where blood is gathered as a result of blood donation and preserved for later use in blood tranfusion.Quality in transfusion process must be good as it plays a vital role in ensuring that correct component is supplied for patient.

Figure 4.2 Services

The above figure refers to the services provided by the system.

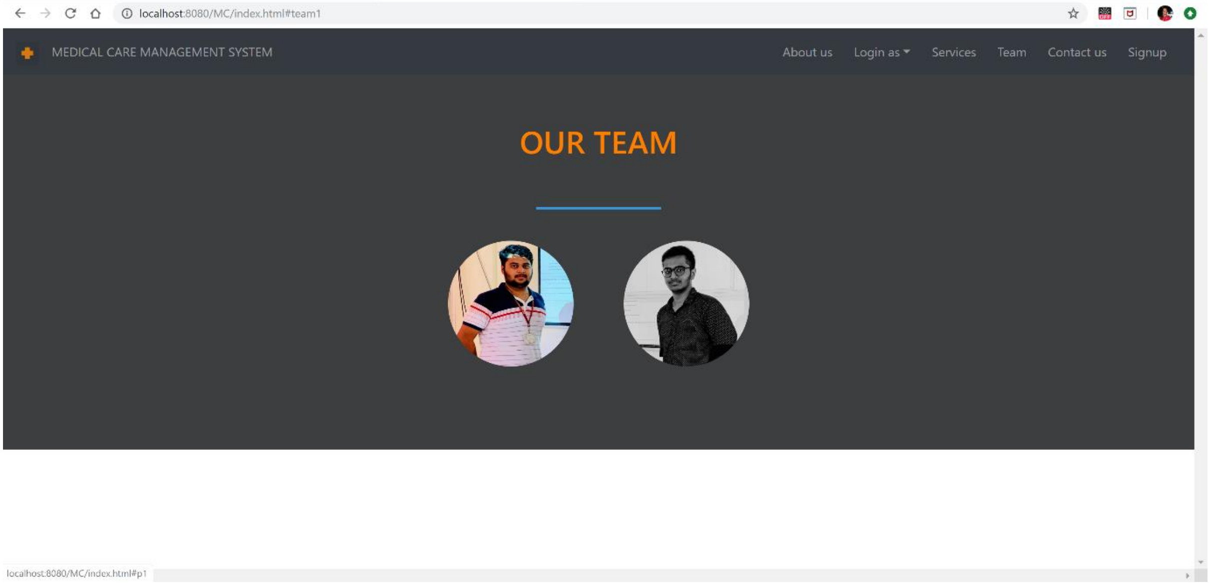
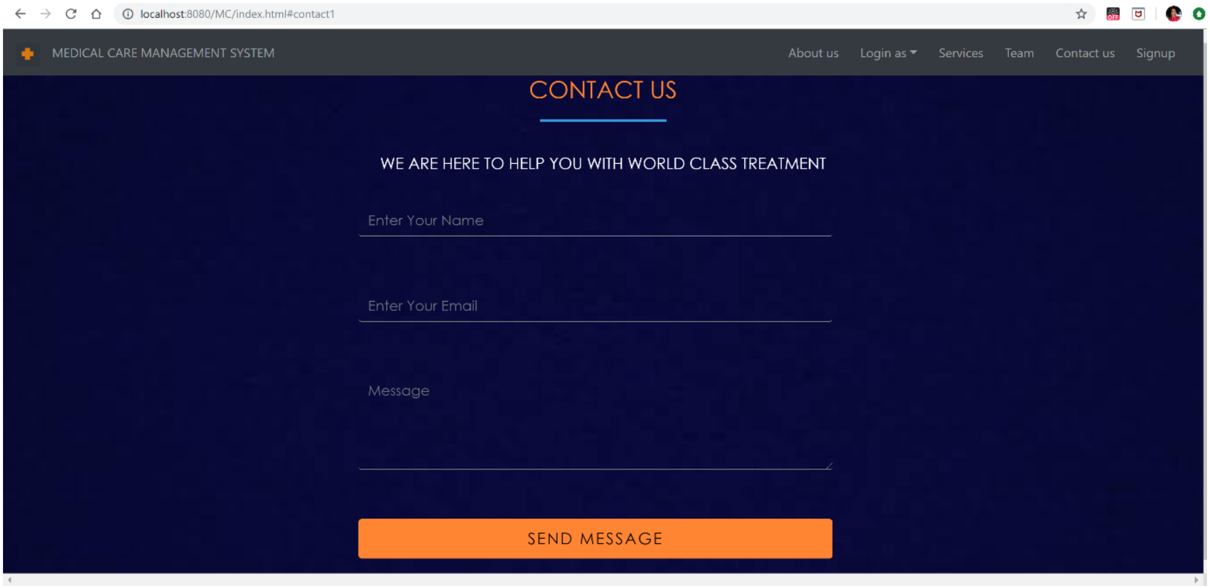

localhost:8080/MC/index.html#team1
MEDICAL CARE MANAGEMENT SYSTEM
About us
Login as
Services
Team
Contact us
Signup
OUR TEAM
localhost:8080/MC/index.html#p1

Figure 4.3 Our Team

The above figure refers to the details of the team.



WE ARE HERE TO HELP YOU WITH WORLD CLASS TREATMENT

Figure 4.4 Contact us page

The figure above refers to the visitor contact page.

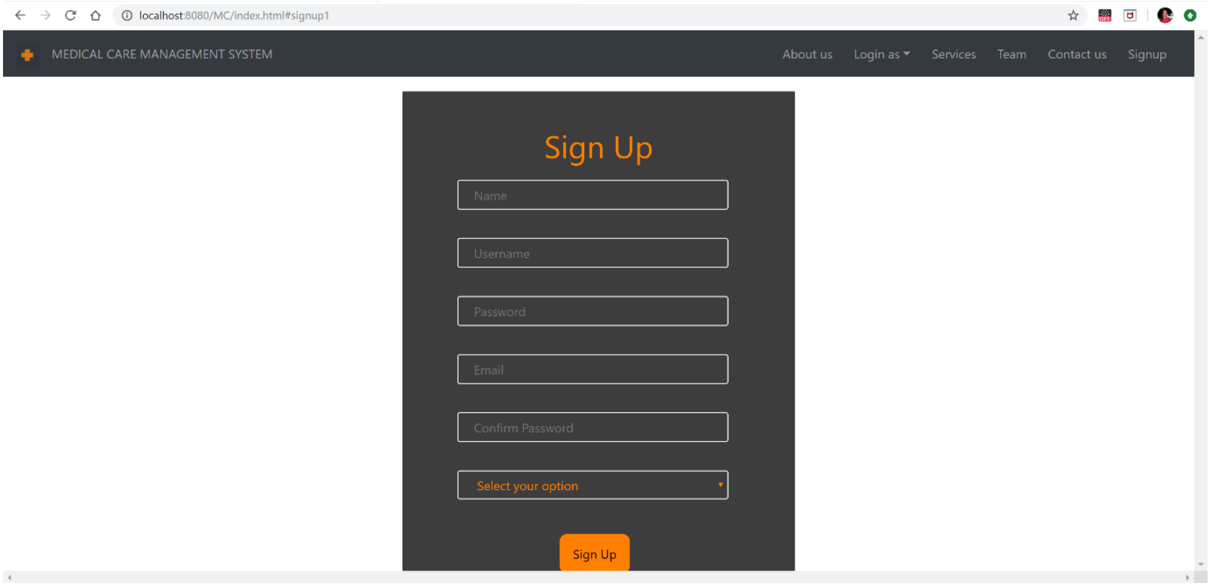


Figure 4.5 Sign up page

The figure above refers to sign up page for doctor, pharmacist and receptionist.

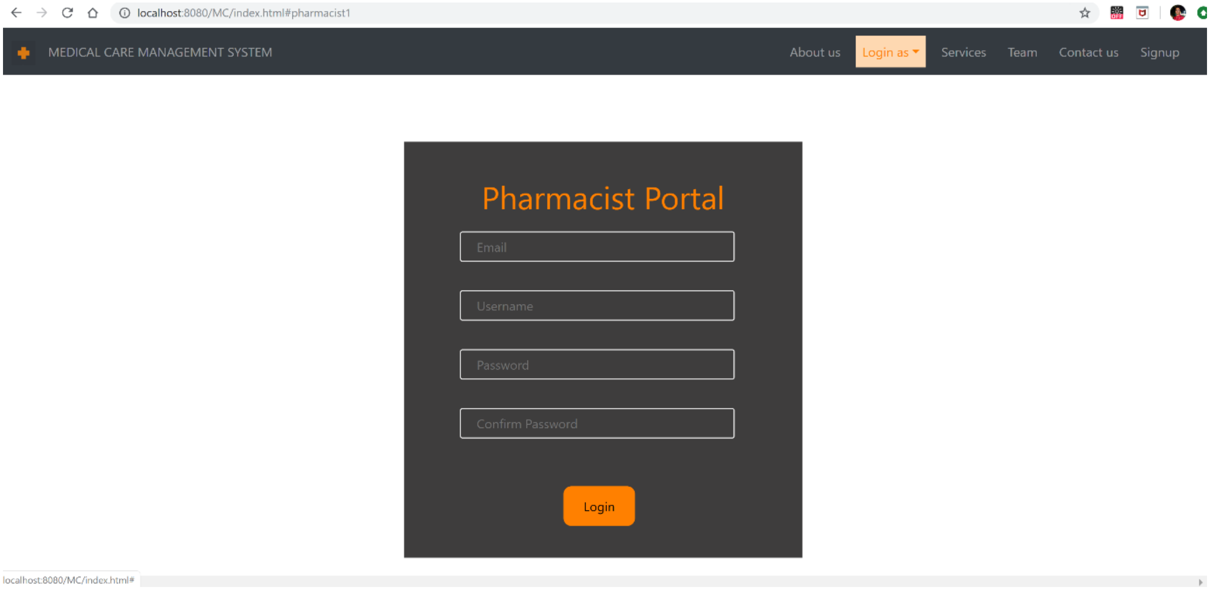


Figure 4.6 Pharmacist login page

The figure above refers to login page for pharmacist.

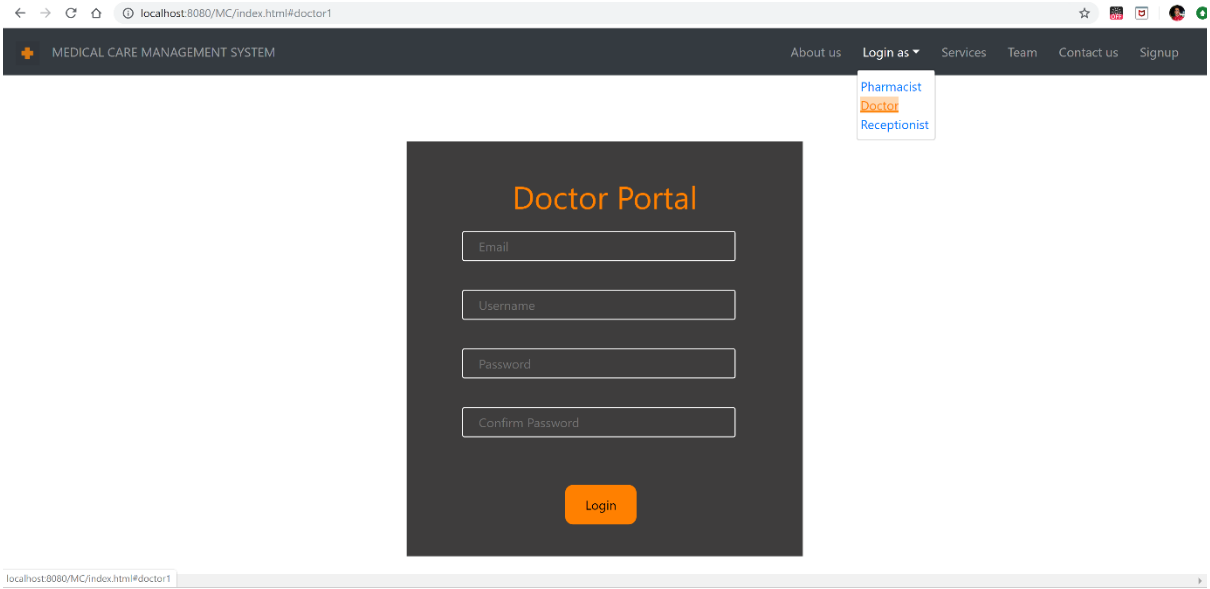


Figure 4.7 Doctor login page

The figure above refers to login page for doctor.

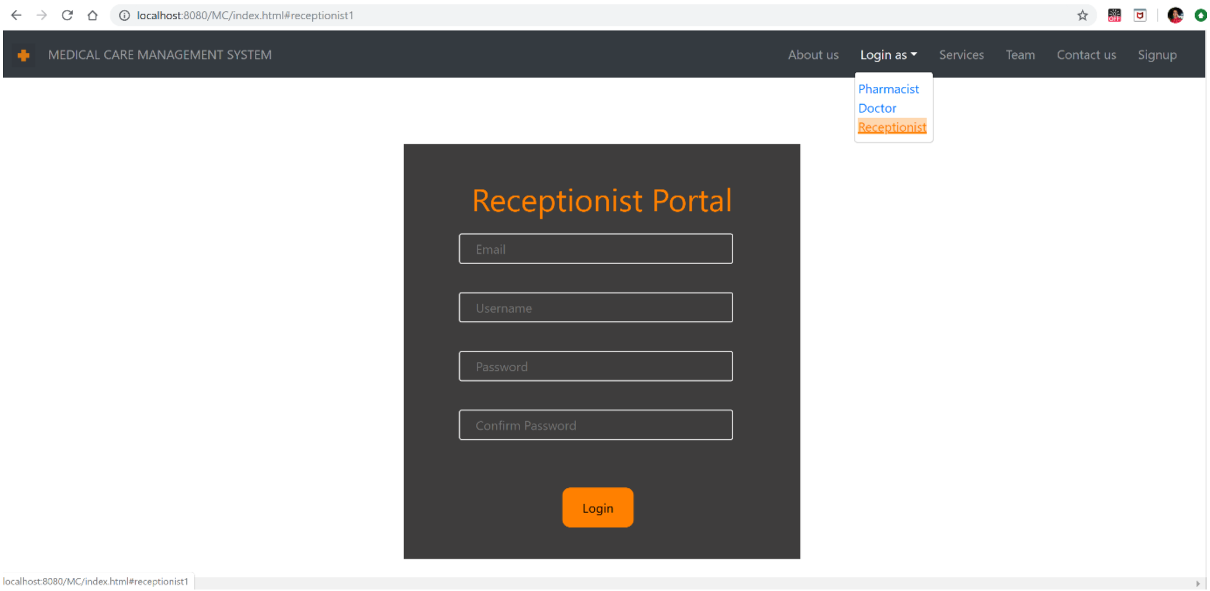
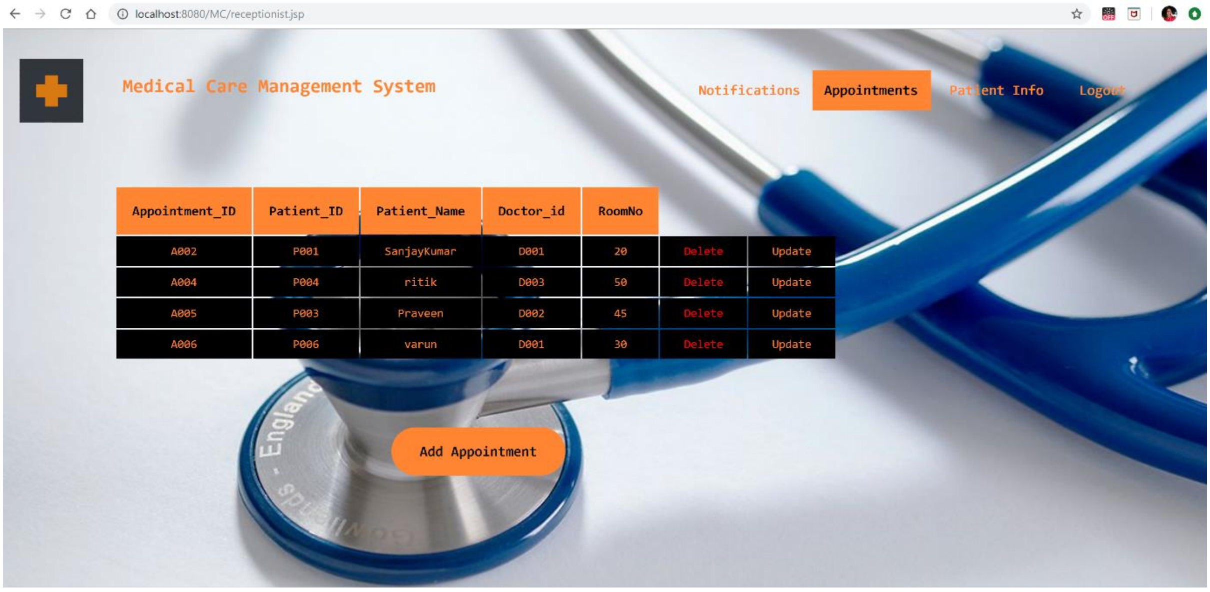


Figure 4.8 Receptionist login page

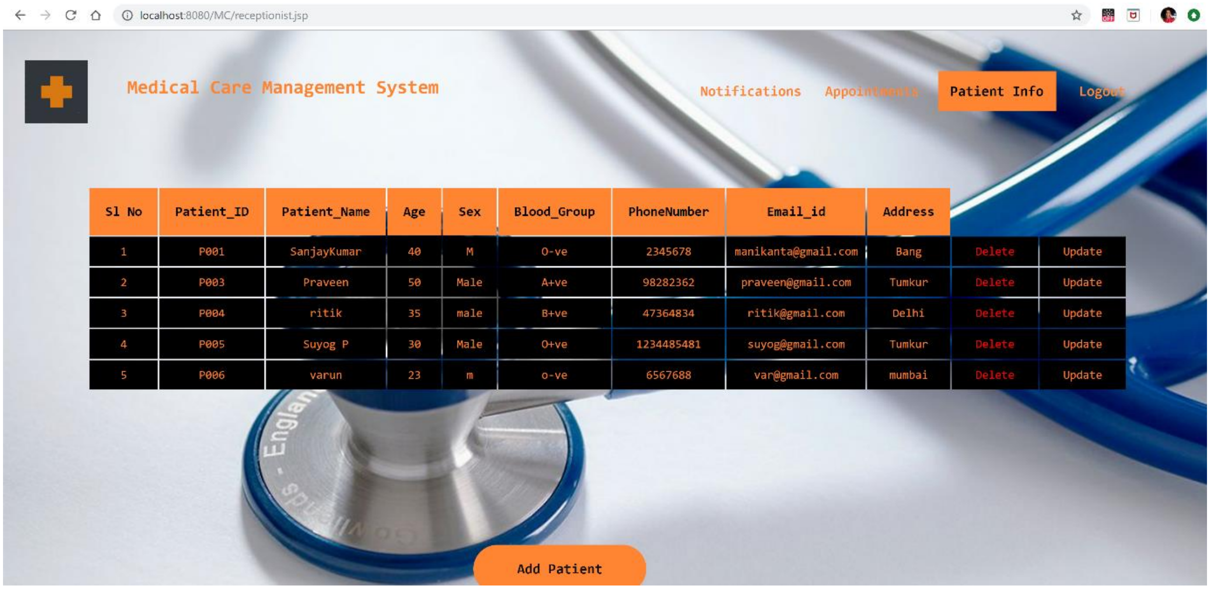
The above figure refers to login page for Receptionist.


localhost:8080/MC/receptionist.jsp
Medical Care Management System
Notifications
Appointments
Patient Info
Logout
Add Appointment

Appointment_ID	Patient_ID	Patient_Name	Doctor_id	RoomNo		
A002	P001	SanjayKumar	D001	20	Delete	Update
A004	P004	ritik	D003	50	Delete	Update
A005	P003	Praveen	D002	45	Delete	Update
A006	P006	varun	D001	30	Delete	Update

Figure 4.9 Appointment page

The above figure refers to management of appointments.

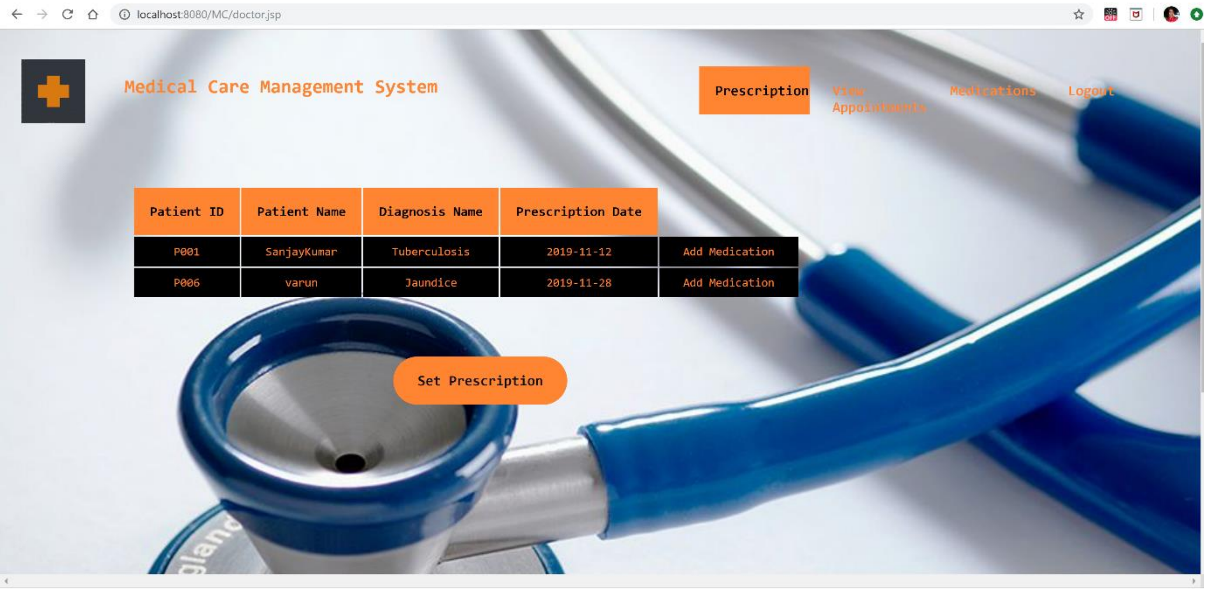


localhost:8080/MC/receptionist.jsp
Medical Care Management System
Notifications
Appointments
Patient Info
Logout
Add Patient

Sl No	Patient_ID	Patient_Name	Age	Sex	Blood_Group	PhoneNumber	Email_id	Address		
1	P001	SanjayKumar	40	M	O-ve	2345678	manikanta@gmail.com	Bang	Delete	Update
2	P003	Praveen	50	Male	A+ve	98282362	praveen@gmail.com	Tumkur	Delete	Update
3	P004	ritik	35	male	B+ve	47364834	ritik@gmail.com	Delhi	Delete	Update
4	P005	Suyog P	30	Male	O+ve	1234485481	suyog@gmail.com	Tumkur	Delete	Update
5	P006	varun	23	m	o-ve	6567688	var@gmail.com	mumbai	Delete	Update

Fig 4.10 Patient Info page

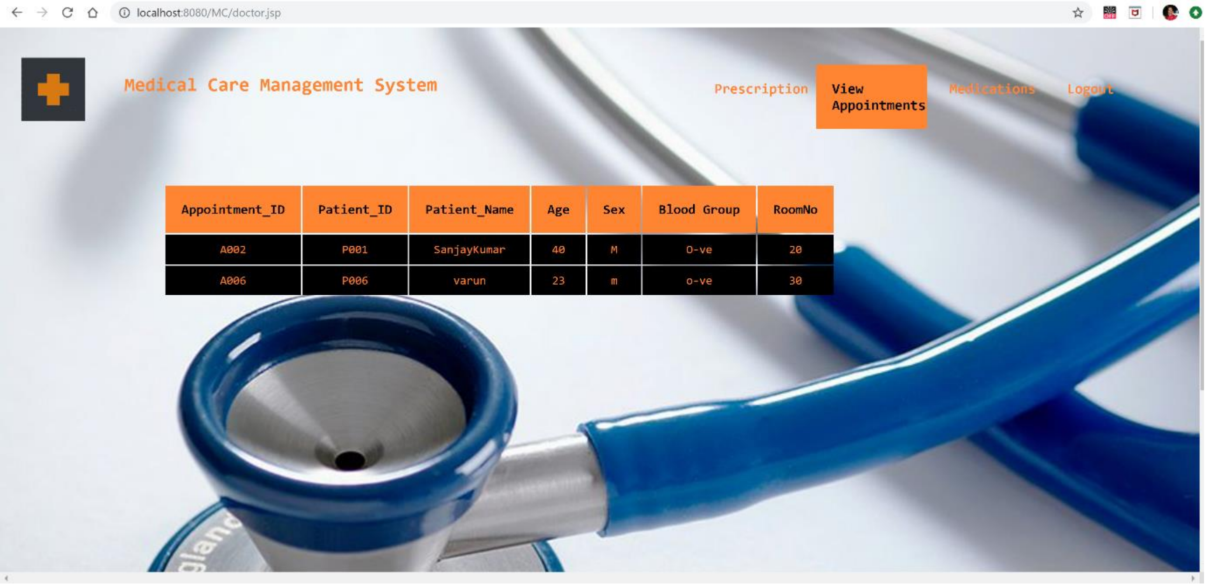
The above figure refers to information about the patients.



Patient ID	Patient Name	Diagnosis Name	Prescription Date	
P001	SanjayKumar	Tuberculosis	2019-11-12	Add Medication
P006	varun	Jaundice	2019-11-28	Add Medication

Fig 4.11 Prescription page

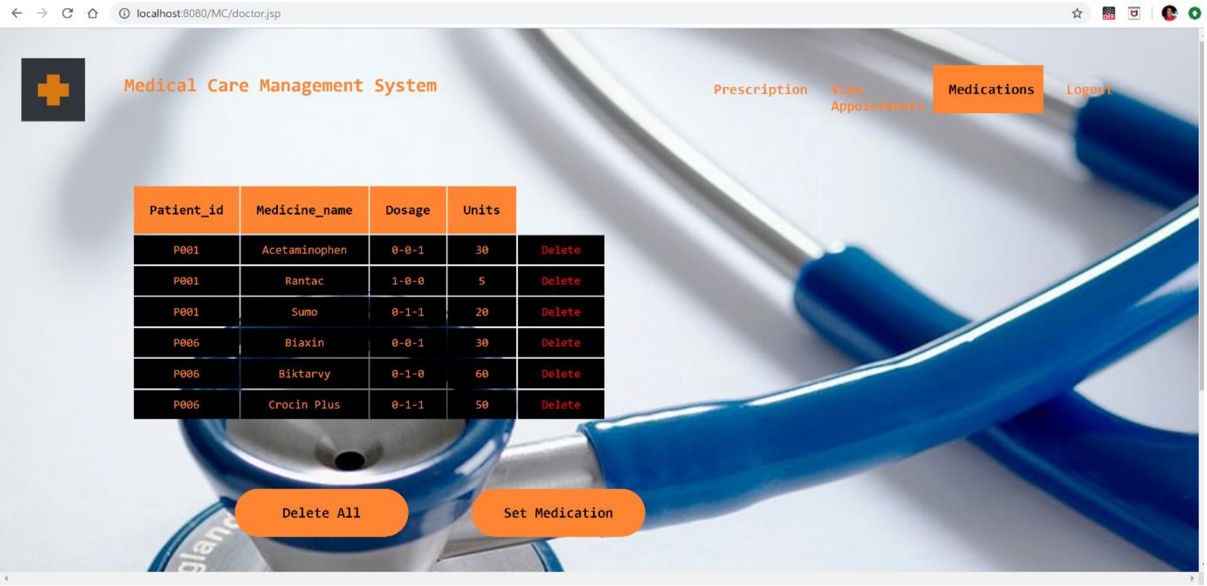
The above figure refers to prescriptions set by the doctor.



Appointment_ID	Patient_ID	Patient_Name	Age	Sex	Blood Group	RoomNo
A002	P001	SanjayKumar	40	M	O-ve	20
A006	P006	varun	23	m	o-ve	30

Figure 4.12 Doctor Appointments page

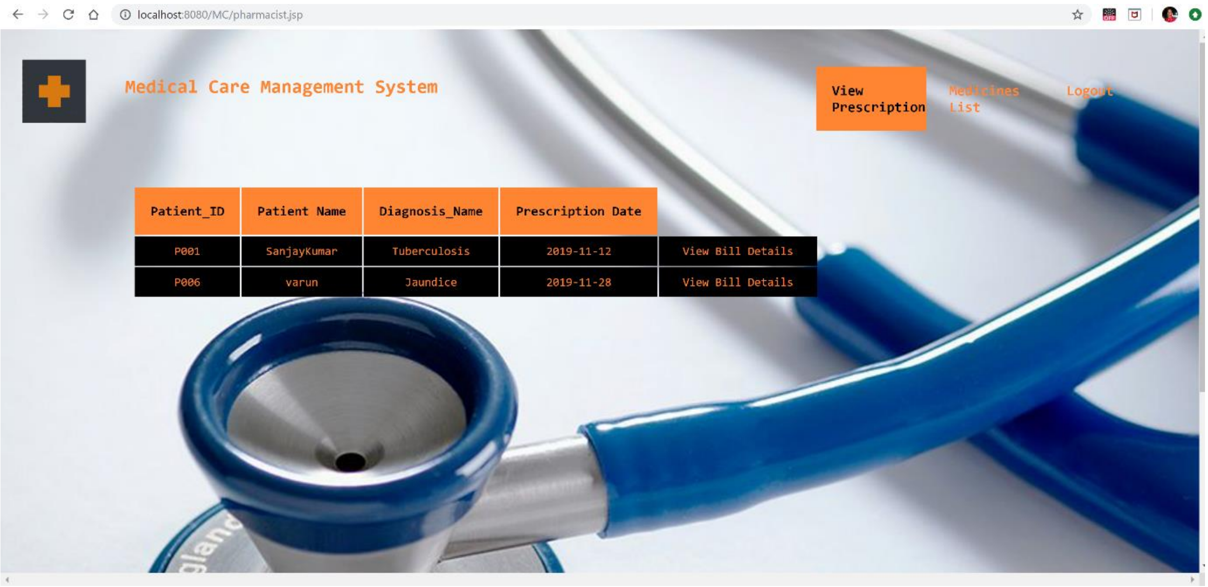
The above figure refers to appointments viewed by the doctor.



Patient_id	Medicine_name	Dosage	Units	
P001	Acetaminophen	0-0-1	30	Delete
P001	Rantac	1-0-0	5	Delete
P001	Sumo	0-1-1	20	Delete
P006	Biaxin	0-0-1	30	Delete
P006	Biktarvy	0-1-0	60	Delete
P006	Crocin Plus	0-1-1	50	Delete

Figure 4.13 Medication page

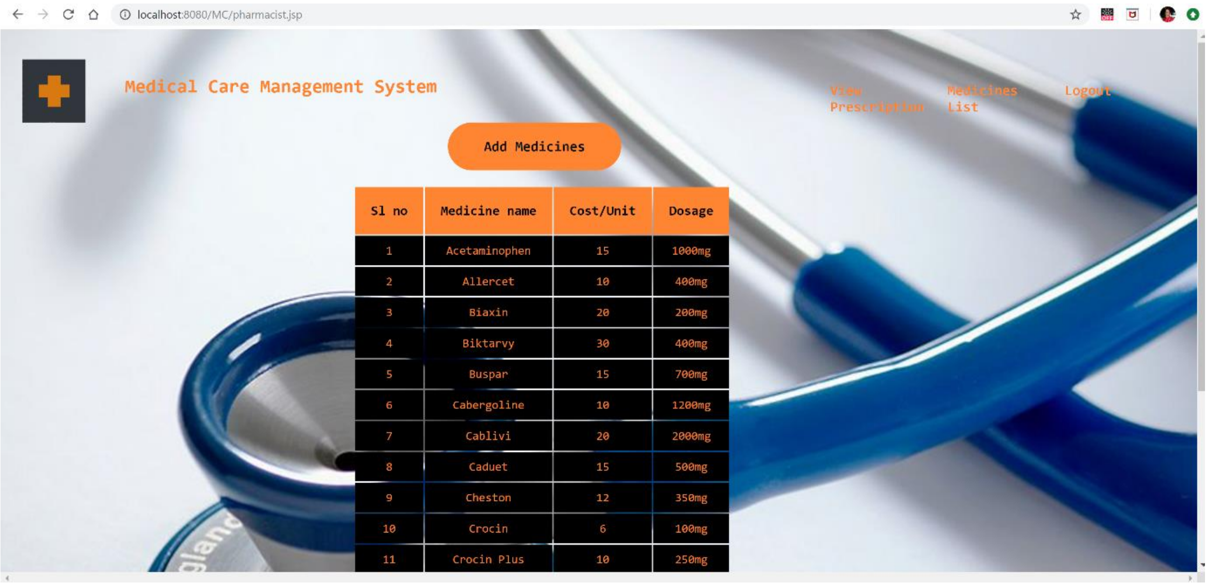
The above figure refers to medications set by the doctor and the features include delete and set medications.


localhost:8080/MC/pharmacist.jsp
Medical Care Management System
View Prescription
Medicines List
Logout

Patient_ID	Patient Name	Diagnosis_Name	Prescription Date	
P001	SanjayKumar	Tuberculosis	2019-11-12	View Bill Details
P006	varun	Jaundice	2019-11-28	View Bill Details

Figure 4.14 View Prescription page

The above figure refers to prescriptions set by the doctor and also to view bill details.


localhost:8080/MC/pharmacist.jsp
Medical Care Management System
View Prescription
Medicines List
Logout
Add Medicines

Sl no	Medicine name	Cost/Unit	Dosage
1	Acetaminophen	15	1000mg
2	Allercet	10	400mg
3	Biaxin	20	200mg
4	Biktarvy	30	400mg
5	Buspar	15	700mg
6	Cabergoline	10	1200mg
7	Cablivi	20	2000mg
8	Caduet	15	500mg
9	Cheston	12	350mg
10	Crocin	6	100mg
11	Crocin Plus	10	250mg

Figure 4.15 Add medicines page

The above figure refers to medicines available in the stock.

Chapter 5

Conclusion and Future Enhancement

5.1 Conclusion

Planned approach toward working: The maintenance of medical facilities have been well planned and organized. The data will be stored efficiency with optimal disk space consumption in data stores which will help in retrieval of information as well as its storage under resource constraints.

Accuracy: The level of accuracy in the proposed system will be higher. All operations would conform to integrity constraints and correctness and it will be ensured that whatever information is received at or sent from the centre is accurate.

Reliability: The reliability of the proposed system will be high due to the above mentioned reasons. This comes from the fact that only the data which conforms accuracy clause would be allowed to commit back to the disk. Other properties like transaction management and rollback during system or power failure etc get automatically taken care of by the SQL systems, which is undoubtedly an excellent choice of the DBMS system. Properties of atomicity, consistency, isolation and data security are intrinsically maintained.

5.2 Future Enhancement

No redundancy: In the proposed system it will be ensured that no repetition of information occurs; neither on a physical storage nor on a logical implementation level. This economizes on resource utilization in terms of storage space. Also even in case of concurrent access no anomalies occur and consistency is maintained. In addition to all this, principles of normalization have been endeavoured to be followed.

Immediate retrieval of information: The main objective of the proposed system is to provide a quick and efficient platform for retrieval of information.queries allowed by the database.

References

[1] https://www.w3schools.com.asp

[2] Fundamentals of Database Systems, seventh edition, Elamasri Navathe.

[3] https://stackoverflow.com/questions

[4] https://www.tutorialspoint.com

[5] www.youtube.com

[6] www.geeksforgeeks.com/jsp