A Project Report on

Hospital Management System Project Report

Submitted to

Savitribai Phule Pune University, Pune

In Partial Fulfillment of Master of Computer Application (MCA - I, Sem-I)

Submitted by

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Dattakala Faculty of Management

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DECLARATION

I, the undersigned hereby declare that the project entitle "Hospital Management System" ,being submitted for the award of degree of Master of Computer Application (MCA – I, Sem – I) by me to Dattakala Group of Institutions Faculty of Management, Swami-Chincholi,Tal-Daund Dist-Pune affiliated to Savitribai Phule Pune University, Pune is the result of an independent work carried out under the guidance ofProf. Takale S.B. Is my original work. Further, I declare that this project has not been submitted to this or any institution for the award of any degree.

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DATE: 16 / 12 / 2023

ACKNOWLEDGEMENT

The project developed for the MCA was not possible without the persons and organizations that helped me in completing this. I am deeply grateful to all whose enthusiasm and energy transformed my vision of this study into reality.

I extend my sincere thanks to Prof. Takale S. B. for making it easyto work in the Institute and providing me needed guidance throughout the project keeping it focused and on the track. I am thankful to him/her for the extended knowledge imparted to me during the course of project development.

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1. Introduction

1.1 Abstract

In this technical world, humans are trying to convert manual processes into automation in order to save time and money. The Hospital Management System is a solution for hospitals there are many employees are working with doctors, nurses, staff members. This application is a web platform to handle and manage all the activity and maintain and centralize a database about the information that will be easily available with just one click on the web. Another key part of this application is patient or you can say end-user of the application. So the system provides functionality to manage the end-user as well according to the relation of the work with a patient means Doctors, Staff or Nurse or Admin can manage the patients.

1.2 Existing System & Need for System

Before this, the management of the clinic is done manually. There are some problem arise especially for the data retrieval. Clinic has a problem of loss of patient data. There is also redundant patient data if the patient not sure whether they have come to the clinic before. So the clerk consider the patient as a new patient and add new data. Currently, the inventory for the medicine is done manually. The management of the clinic also have to takes times to check for the medicine inventory. Hospital Management System is developed to support and automate the clinic daily operation.

Hospital Management System is a system that can help the clinic to manage their daily activity. This system will involve all the clinic operation starting from patient registration until billing the patient. Here the patients can register through online and get their appointment. This system help reduce the problems occur when using the manual system. The important thing is it will become easier for the data record and retrieval. This software also stores all the patient details, patients lab reports, bill calculation, billing, monthly reports, daily reports.

The system enables doctors and clinic assistant to manage patient records, medicine stock, and appointment and produce reports. This system will be able to generate report regarding the clinic operation. User can enter the patient details. Whatever treatment he has taken will also be saved in the database. Other than that, the system is user friendly and it can help the clinic to manage their activity.

1.3 Scope of System

The scope of the product is to change from manual system to computerized store management system, which is allowing easy communication between staff, doctors and patient. In clinic system use database system for all information that make the process of work going easily. In the Hospital Management System is easy to add, modify and delete recordsinstead of changing or destroying the whole file. Also the interface of the system is much user friendly. By this software the searching will be easily by simply typing the letters that much them. In the computerized system you can easily keep your data save, for example by creating another copy of whole system and save it as a backup. When any failure happens to your system then you will have another copy of it.

- **Registry:** will help patient to easy register in clinic. Also it will know directly the new patient and old patient
- **Finance:** The patients can payment the money.
- **Staff:** will enter patient information.
- **Patient:** will be rejecter for the system.
- **Medicine:** that will be given for the patient.
- **Supplier:** will provide the medicines.

1.4. Operating Environment - Hardware and Software

The operating environment for a Hospital Management System can vary depending on the specific software and hardware requirements of the system.

Hardware:

1. **Processor:** The desktop computer should have a modern processor that meets the minimum system requirements of the Hospital Management System.
   i3 Processor minimum.

2. **RAM:** The desktop computer should have sufficient RAM to run the Hospital Management System. The minimum RAM requirement can depend on the specific requirements of the system, but typically ranges from 2GB to 8GB.

3. **Hard Disk:** The desktop computer should have enough hard disk space to install and run the Hospital Management System. The minimum hard disk requirement can depend onthe specific requirements of the system, but typically ranges from 500MB to 2GB.

4. **Display:** The desktop computer should have a display with sufficient resolution and size to view the Hospital Management System interface clearly.

Software:

1. **Operating System:** The Hospital Management System can be designed to work with various operating systems, such as Windows, MacOS, or Linux. The system should be compatible with the specific version of the operating system that the desktop computer is running.

2. **Database Management System:** The Hospital Management System typically requires a database management system for storing and managing the data. The database management system used is MySQL. Using MySQL workbench.

3. **Programming Language and Framework:** The Hospital Management System can be developed using a programming language Java.

4. **Other Software:** The Hospital Management System requires additional software components Apache NetBeans IDE and Windows 11 Operating System.

Overall, the hardware and software requirements for a desktop-based Hospital Management System can vary depending on the specific needs and requirements of the application. The system should be designed and developed to be compatible with the existing hardware and software infrastructure of the school, while also meeting the functional and performance requirements of the system

1.5. Brief Description of Technology Used.

1.5.1 Operating System

Project is developed in Windows 10 operation system platform. This is very simple operation system to operate computer system. Its graphical user interface is very powerful.

1.5.2 Technology

I used MySQL RDMBS database tool to store data. It is open source database. We don't need to pay any cost of amount to use it so that.

2. Proposed System

2.1 Feasibility Study

The feasibility study is major factor, which contributes to the analysis and development of the system. The decision of the system analyst whether to design a particular system or not depends on its feasibility study.

2.1.1 Operational Feasibility

Evaluate the operational feasibility of the system by considering how it will integrate with existing business processes, any potential changes in workflows, and

Any potential training needs for employees or users.

2.1.2 Technical Feasibility

Assess the technical feasibility of the system by evaluating the hardware, software, and network requirements, as well as any potential technological limitations or constraints.

2.1.3 Economical Feasibility

Evaluate the economic feasibility of the system by analyzing the costs of development, implementation, and maintenance. Consider the revenue potential, potential return on investment, and any potential risks associated with the system.

2.1.4 Behavioral Feasibility

This includes the following questions:

- Is there sufficient support for the users?
- Will the proposed system cause harm?

The project would be beneficial because it satisfies the objectives when developed and installed. All behavioral aspects are considered carefully and conclude that the project is behaviorally feasible.

2.2. Objective of Proposed System

- The project clinic management is software developed to simplify the communication process between the doctor and the receptionist.
- The software would be operated by two users one is doctor and the other is receptionist.
- Receptionist would be responsible for assigning token numbers to the patient visiting the clinic and save it in the database along with their details. These token numbers along with respective patient details are sent to doctor. The doctor can thus view patient details and after checking up the patient, the recommended medicines for the particular patient are fed into the database by the doctor and are sent to receptionist.
- The receptionist can then generate bill and feed into the database. The system also maintains patient's history so that doctor or receptionist can view them anytime. The system can thus reduce complexity in maintaining patient's records. The project is developed on Net Beans platform and is supported by a SQL database to store user specific details

The aim of the proposed system is to develop a system of improved facilities.

- Security of data.
- Ensure data accuracy.
- Greater efficiency.
- Better services.
- User friendliness and interactive.
- Minimum time required for searching

2.3 Users of System

- DOCTORS
- PATIENTS
- RECEPTIONISTS

3. Analysis and Design

3.1 System Requirement (Functional & Non-Functional Requirement)

3.1.1 Functional Requirements:

- **Login Module:-**
  - The system only can access by the authority user which is an official clinic staff who is registered.
  - The authority user must use username and password to login to the system.
  - Validation on username and password that input is required to deny the invalid user login to the system

- **REGISTER NEW PATIENT:-**
  - System must be able to verify and validate information.
  - The system must encrypt the password of the user

- **Patient Record Module:-**
  - Patient medical history is a confidential data which supposed to view by doctor only. So only doctor can add and update the patient medical history.
  - Staff level user could only add new patient record and update patient record with patient basic information such as contact detail.

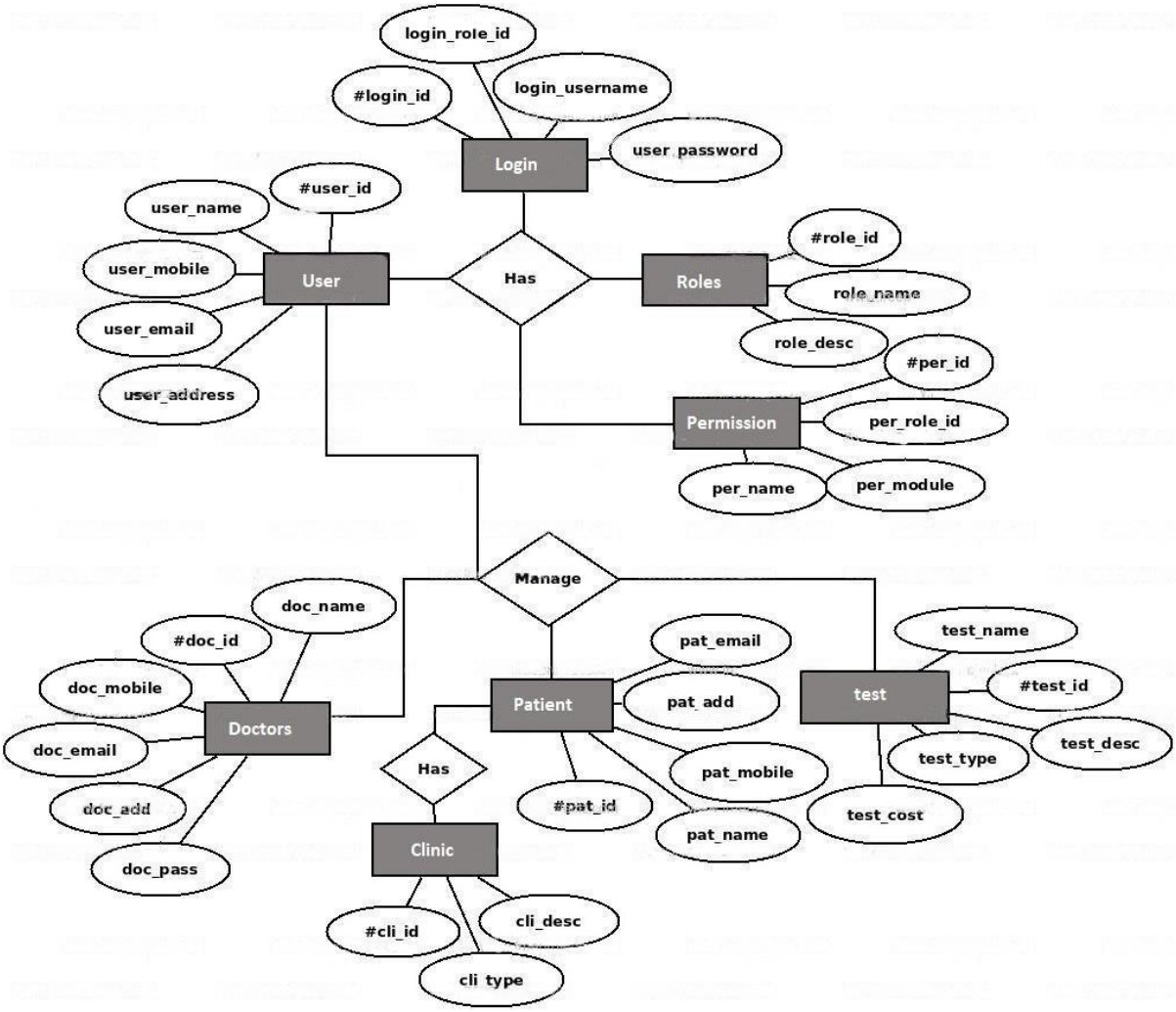
- **Report Module:-**
  - The basic report that usually needed to be carried out during business operation is required to prepare for the staff.
  - The detail that going to display on the report must decide by the user.

3.1.2 Non-functional Requirements:

- **Usability Requirement:-**
  - The system will decrease the amount of text box that input by the user and increase the selection input method such as combo box and radio button.
  - Within this will eliminate the possibility of entry error that made by the user when they enter record into the system.
- **Efficiency Requirement:-**
  - The system must allow the staff to search the patient record in an easy and efficient way from a large amount of data.
  - The system response time must be fast and the system should allow the user to open several task at one time when they using it.
- **Reliability Requirement:-**
  - Make sure there is an additional server to back up the clinic data in case when the server is down, there is still a backup server to support the system to continue running the daily business.

- **Security Requirement:-**
  - The system must provide a highly security on protecting the patient privacy.
  - Some confidential data should restrict to only authorize user to access it.

3.2 Entity Relationship Diagram(ERD)



ER Diagram for Hospital Management System

3.3. Table Structure:

3.3.1. Admin table

Field	Data Type	Constraint
username	varchar(15)	Primary key
Password	varchar(15)	Not Null

3.3.2. Doctor Table

Field	Data Type	Description
count	int(11)	Primary key
Date	Varchar(10)	Not Null
Id	Varchar(10)	Not Null
Name	Varchar(30)	Not Null
Age	Int(5)	Not Null
Gender	Varchar(8)	Not Null
Blood	Varchar(4)	Not Null
Dept	Varchar(20)	Not Null
Phone	Varchar(15)	Not Null
Email	Varchar(30)	Not Null
Status	Varchar(10)	Not Null
Address	Varchar(20)	Not Null
room	int (11)	Not Null

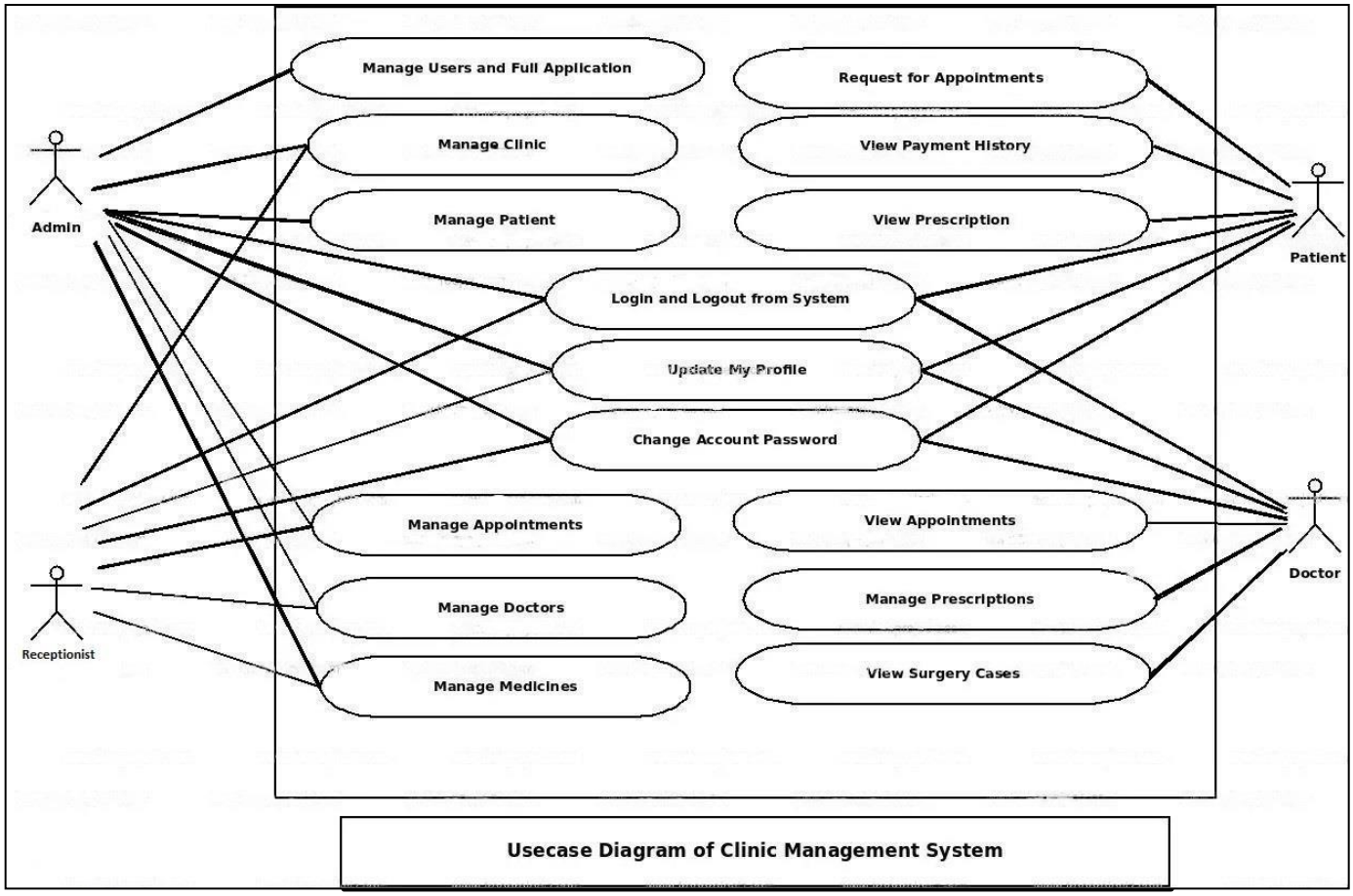
3.3.3. Patient table

Field	Data Type	Description
count	int(11)	Primary key
Date	Varchar(10)	Not Null
Id	Varchar(10)	Not Null
Name	Varchar(30)	Not Null
Age	Int(5)	Not Null
Gender	Varchar(10)	Not Null
Address	Varchar(20)	Not Null
Phone	Varchar(20)	Not Null
Status	Varchar(10)	Not Null
Disease	Varchar(20)	Not Null
Room	int (11)	Not Null

3.3.4. Receptionist table

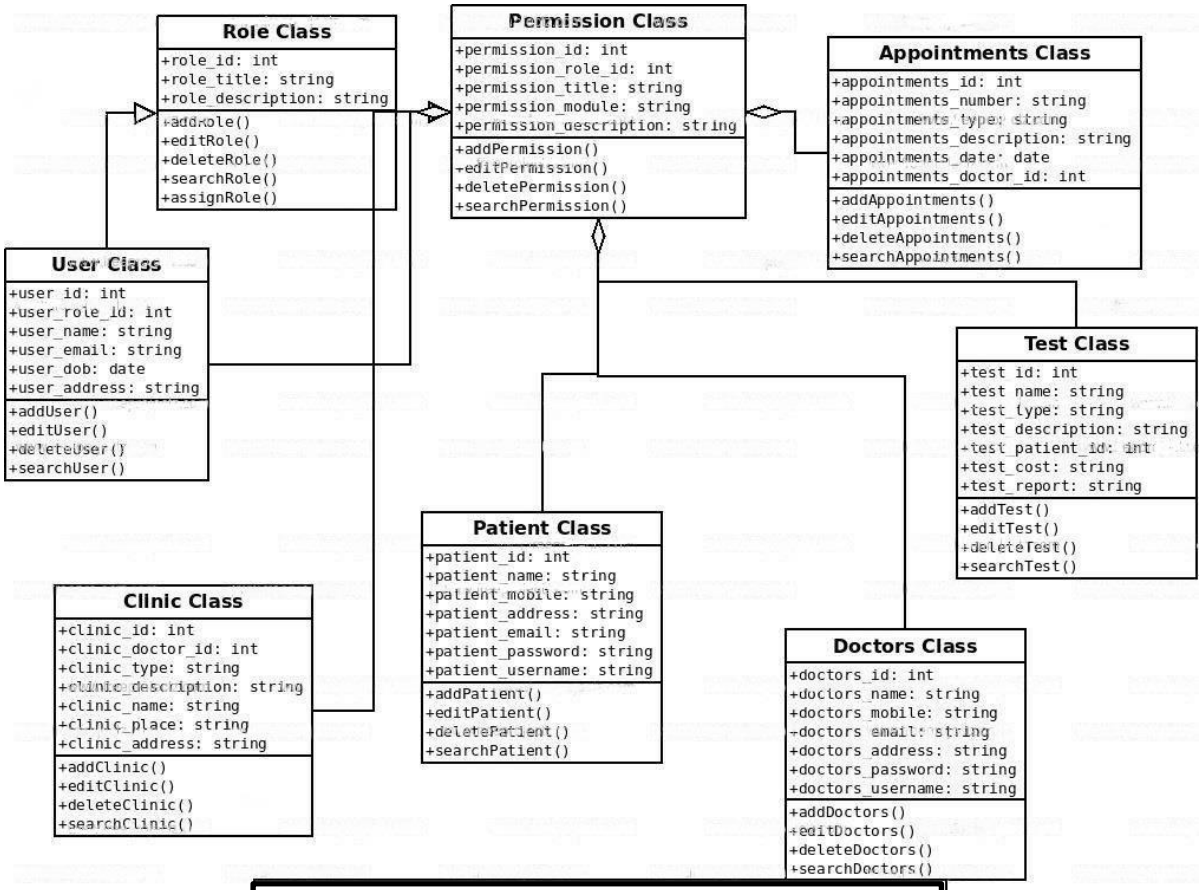
Field	Data Type	Description
count	int(11)	Primary key
Joining	Varchar(15)	Not Null
Id	Varchar(15)	Not Null
Name	Varchar(30)	Not Null
Age	Int(5)	Not Null
Gender	Varchar(10)	Not Null
Blood	Varchar(4)	Not Null
Email	Varchar(40)	Not Null
Phone	Varchar(17)	Not Null
Address	Varchar(30)	Not Null
Status	Varchar(10)	Not Null
Username	Varchar(20)	Not Null
password	Varchar(30)	Not Null

3.4 Use case Diagram



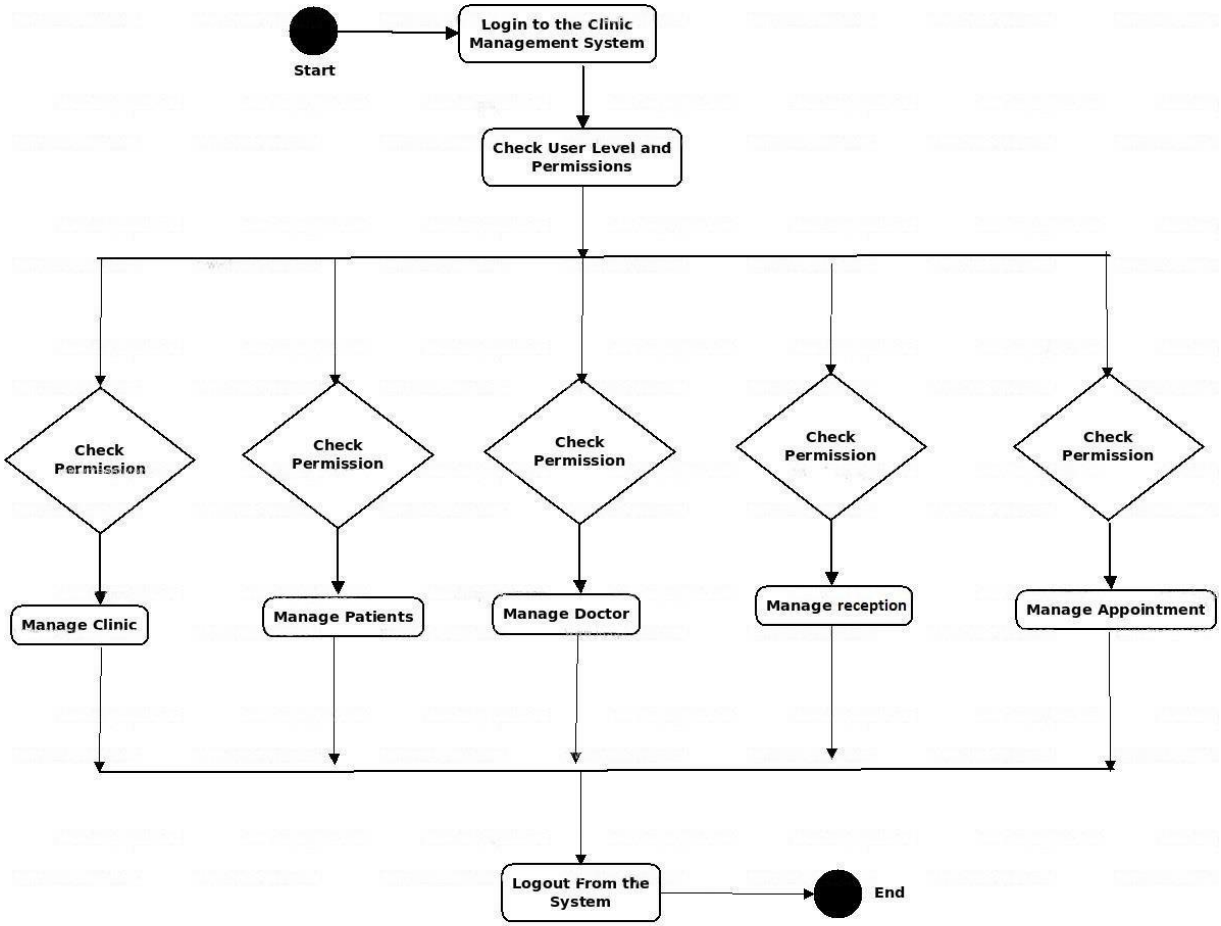
Usecase Diagram of Clinic Management System

3.5 Class Diagram



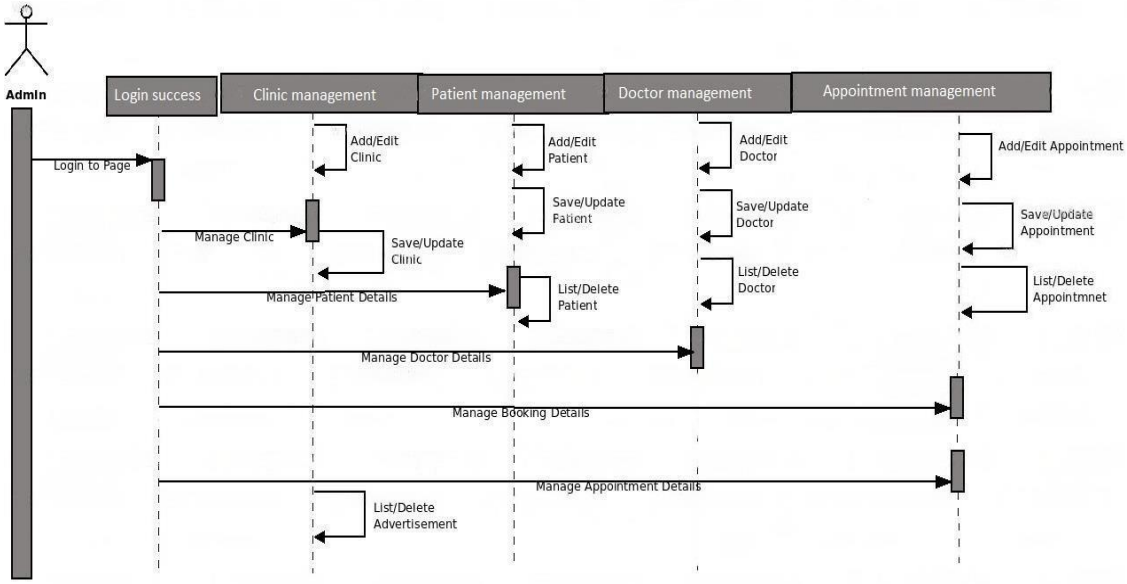
Class Diagram of Hospital Management System

3.6 Activity Diagram



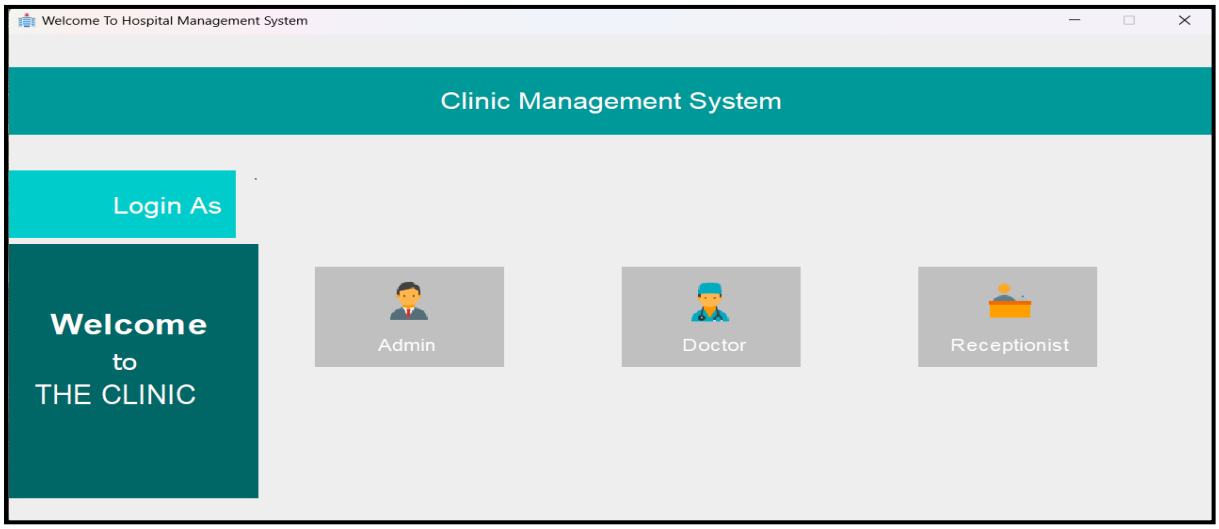
Activity Diagram of Hospital Management System

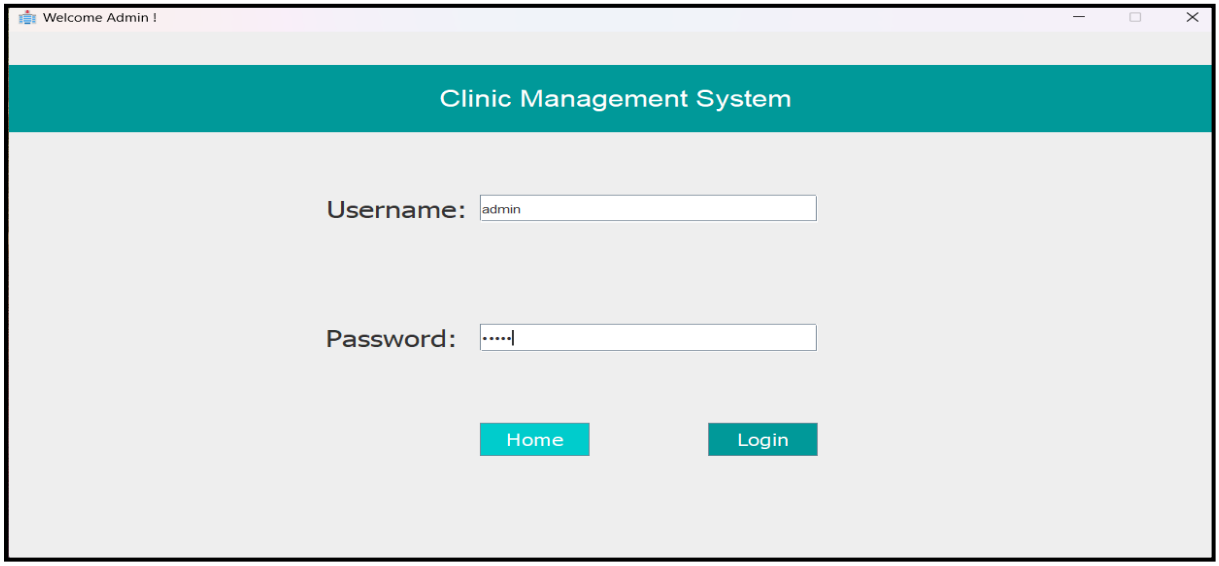
3.7 Sequence Diagram

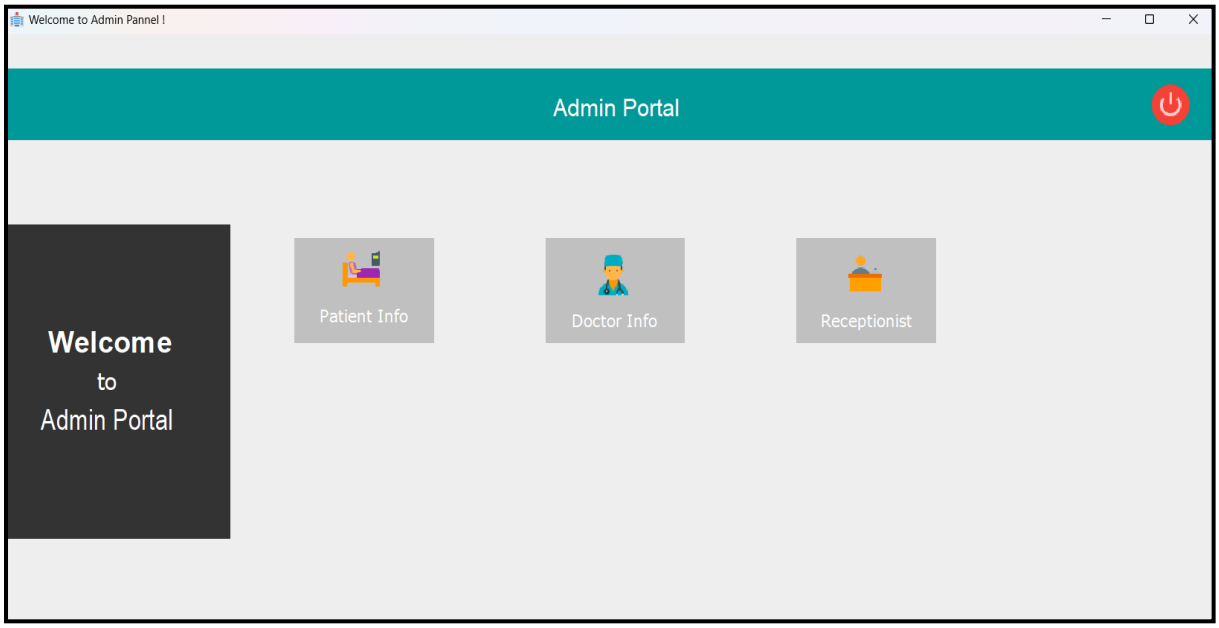


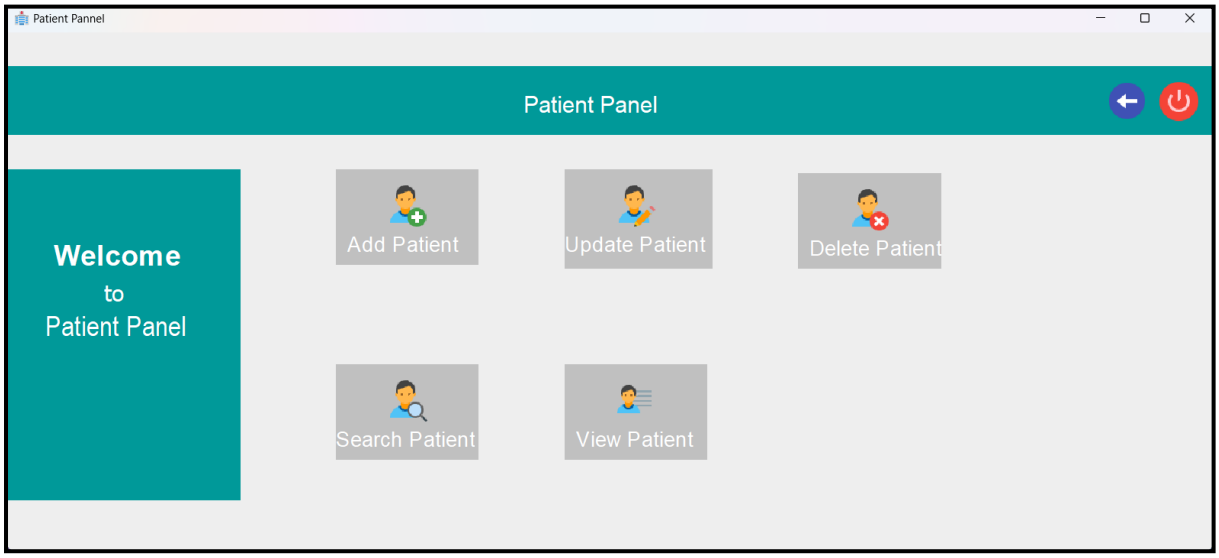
Sequence Diagram of Hospital Management System

4.Sample Input and Output Screens

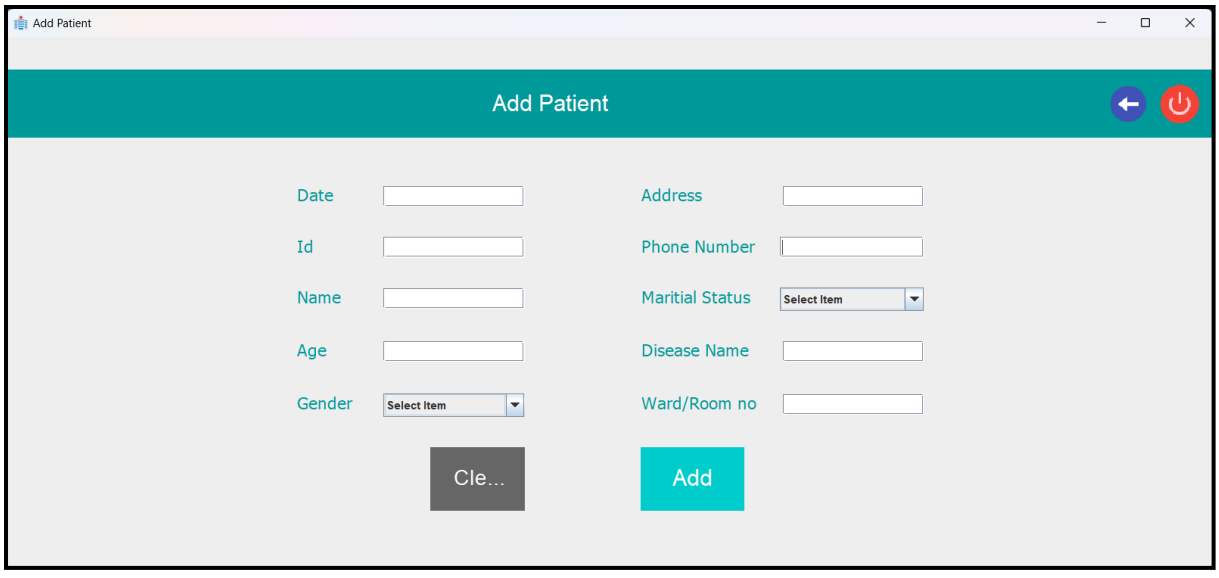








Count	Date	Id	Name	Age	Gender	Address	Phone Number	Status	Disease	Room Number
13	03/4/2222	CMSP1	Rahul	14	Male	Pune,mahrashtra	+880656232	Married	Dental	2
2	08-03-2018	CMSP2	Akshay	20	Male	Dehuroad,maharas...	+8801757009	Single	Fever	504
3	09-06-2018	CMSP3	Shivam	21	Male	Thane,maharashtra	+8801876543	Single	Dengue	102
4	03-05-2017	CMSP4	Ankush	78	Male	Gurgaon,maharasht...	+8801889765	Married	Jaundice	653
5	09-03-2016	CMSP5	Kailash	24	Male	Dadar,maharashtra	+8801765432	Divorced	Malaria	806
6	22-12-2017	CMSP6	Ganesh	27	Male	Kulra,maharashtra	+8801722456	Married	Typhiod	122
8	22-12-2017	CMSP7	Rajesh	22	Male	Shivajinagar,mahara...	+8801754678	Single	Cold,Fever	22



6. Limitations of Proposed System

Limitations & Future

- Excel export has not been developed for Clinic, Doctor due to some criticality.
- The transactions are executed in off-line mode, hence on-line data for Patient. Appointment capture and modification is not possible.
- Off-line reports of Clinic, Tests, and Patient cannot be generated due to batch modeexecution.

Advantages

The system is very simple in design and to implement. The system requiresvery low system resources and will work in almost all configurations. It has got following advantages

- User friendly application.
- Secured database.
- Fast processing.
- Record can be updated easily. • Can stored number of records.
- Any record can be retrieved when required.
- System reduces manual workload.
- Redundancy of data is avoided.
- Records can be searched and sorted easily.

7.Proposed Enhancements

In a nutshell, it can be summarized that the future scope of the project circles around maintaining information regarding:

- We can add printer in future.
- We can give more advance software for Hospital Management System including morefacilities
- We will host the platform on online servers to make it accessible worldwide
- Integrate multiple load balancers to distribute the loads of the system
- Create the master and slave database structure to reduce the overload of the database quenes
- Implement the backup mechanism for taking backup of codebase and database on regular basis on different servers

The above mentioned points are the enhancements which can be done to increase the applicability and usage of this project. Here we can maintain the records of Clinic andDoctor.

8.Conclusion

Finally, in the Clinic management service, the outcome of all the-the hard work done for the Hospital Management System is here. It is software that helps the user to work with the clinics easily. This software reduces the amount of manual data entry and gives greater efficiency. The User Interface of it is very friendly and can be easily used by anyone.

It also decreases the amount of time taken to write patient details and other modules. In the end, we can say that this software is performing all the tasks accurately and is doing the work for which it is made.

The central issuer for controlling and handling the task by the doctor is therefore solved. Before this it was quite hectic for handling the timetable and to keep in touch with day to day agenda. But by creating this software the administrator can now handle the task easily and also save his/her time. The quality time of the doctor is also saved and the manual man poweris also saved, the data can be retrieved timely and also whenever it is required by the user.
The adequate application of the task by distributing it and by allocating the exact outputs. The storage facility will make the task easy of the handler. Therefore the proposed system will be accessible to the doctor by making his/her task easy.

9.Bibliography

The following website were referred during the analysis and execution phase of the project.

- **W3 SCHOOL**
- **YOU TUBE**
- **JAVATPOINT**
- **www.Geeksforgeeks.com**

References

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