# **HOSPITAL APPOINTMENT SYSTEM**

Submitted in partial fulfillment of requirement for the award of the Degree

Bachelor of Computer Science

In the faculty of Computer Science of Bharathiar University, Coimbatore

Submitted by

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(Reg.No.2022K0119)

Under the guidance of

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**Department of Computer Science** 

## L.R.G GOVERNMENT ARTS COLLEGE FOR WOMEN

(Affiliated To Bharathiar University)

TIRUPUR-4

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CERTIFICATE

## **CERTIFICATE**

This is to certify that the project work entitled "HOSPITAL APPOINTMENT
SYSTEM" Submitted to Bharathiar University in partial fulfilled of the requirement for the
award of the Degree of Bachelor of computer science is a record of the original work done by
Ms.R.ARCHANA (Reg.No.2022K0119) Under my supervisor and that project work has not
formed the basis for the any Degree /Diploma /Association /Fellowship or similar title to any
candidate of any university.

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# **DECLARATION**

I hereby declare that the project work submitted to the Department of the Computer			
Science, L.R.G. Government Arts College for Women, Tirupur , affiliated to Bharathiar			
University, Coimbatore in the partial fulfillment of the required for the award of Bachelor of			
Computer Science is an original work done by me during the sixth semester.			
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SYNOPSIS

## **SYNOPSIS**

A Hospital appointment system project is that for communicating between the patients and nurse, the patient can easily find about the hospital details and etc..... In this hospital management system first, the patient should have an entry with by using mobile number, if the patient has to be check first time the patient was called new patient. Every patient record will be maintained by the hospital software. Also, we give an appointment to the doctors with patient needed. Then we can be calculated daily hospital bill by using this software. This is a very long-term project we have to only some basic thing modules.

INTRODUCTION

## 1. INTRODUCTION

## 1.1 OVERVIEW OF THE PROJECT

The "Doctor Appointment System" has been developed to override the problems prevailing in the practicing manual system. This software is supported to eliminate and in some cases reduce the hardships faced by this existing system. Moreover this system is designed for the particular need of the company to carry out operations in a smooth and effective manner.

The application is reduced as much as possible to avoid errors while entering the data. It also provides error message while entering invalid data. No formal knowledge is needed for the user to use this system. Thus by this all it proves it is user-friendly. Doctor Appointment System, as described above, can lead to error free, secure ,reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus it will help organization in better utilization of resources.

Every organization, whether big or small, has challenges to overcome and managing the information of Appointment, Doctor, Booking, Doctor Fees, and Doctor Schedule. Every Doctor Appointment System has different Doctor Needs, therefore we design exclusive employee management systems that are adapted to your managerial requirements. This is designed to assist in strategic planning, and will help you ensure that you organization is equipped with the right level of information and details for your future goals. Also, for those busy executive who are always on the go, our systems come with remote access features, which will allow you to manage your workforce anytime, at all times. These systems will ultimately allow you to better manage resources.

## 1.2 SYSTEM SPECIFICATION

System Requirements Specification also known as Software Requirements

Specification is a document or set of documentation that describes the features and behaviour of a software application.

## 1.2.1 HARDWARE SPECIFICATION

• Processor : P 4 700 GHz.

• Processor Speed : 2.60 GHz

• RAM : 4 GB RAM

• Hard Disk Drive : 180 GB

• Keyboard : Standard 102 keys

## 1.2.2 SOFTWARE SPECIFICATION

• Operating System : Windows 7/8/10

• Web Server : Apache Tomcat 8.5

• Front End : JAVA

• Back End : MYSQL

## 1.2.3 SOFTWARE DESCRIPTION

#### WINDOWS OS

Windows is a graphical operating system developed by Microsoft. It allows users to view and store files, run the software, play games, watch videos, and provides a way to connect to the internet. It was released for both home computing and professional works.

Microsoft introduced the first version as 1.0

It was released for both home computing and professional functions of Windows on 10 November 1983. Later, it was released on many versions of Windows as well as the current version, Windows 10.

In 1993, the first business-oriented version of Windows was released, which is known as Windows NT 3.1. Then it introduced the next versions, Windows 3.5, 4/0, and Windows 2000. When the XP Windows was released by Microsoft in 2001, the company designed its various versions for a personal and business environment. It was designed based on standard x86 hardware, like Intel and AMD processor. Accordingly, it can run on different brands of hardware, such as HP, Dell, and Sony computers, including home-built PCs. Play Video Editions of Windows

Microsoft has produced several editions of Windows, starting with Windows XP. These versions have the same core operating system, but some versions included advance features with an additional cost. There are two most common editions of Windows:

- Windows Home
- Windows Professional

Windows Home is basic edition of Windows. It offers all the fundamental functions of Windows, such as browsing the web, connecting to the Internet, playing video games, using office software, watching videos. Furthermore, it is less expensive and comes pre-installed with many new computers.

## INTRODUCTION TO FRONT END

## **JAVA**

Java is a high-level programming language developed by Sun Microsystems. It was originally designed for developing programs for set-top boxes and handheld devices, but later became a popular choice for creating web applications.

The Java syntax is similar to C++, but is strictly an object-oriented programming language. For example, most Java programs contain classes, which are used to define objects, and methods, which are assigned to individual classes. Java is also known for being stricter than C++, meaning variables and functions must be explicitly defined. This means Java source code may produce errors or "exceptions" more easily than other languages, but it also limits other types of errors that may be caused by undefined variables or unassigned types.

Unlike Windows executable (.EXE files) or Macintosh applications (.APP files), Java programs are not run directly by the operating system. Instead, Java programs are interpreted by the Java Virtual Machine, or JVM, which runs on multiple platforms.

This means all Java programs are multiplatform and can run on different platforms, including Macintosh, Windows, and Unix computers. However, the JVM must be installed for Java applications or applets to run at all. Fortunately, the JVM is included as part of the Java Runtime Environment (JRE).

## INTRODUCTION TO BACKEND

## **MY-SQL 4.0**

MySQL is a full-featured relational database management system. It is very stable and has proven itself over time. MySQL has been in production for over 10 years. MySQL is a multithreaded server. *Multithreaded* means that every time someone establishes a connection with the server, the server program creates a thread or process to handle that client's requests. This makes for an extremely fast server. In effect, every client who connects to a MySQL server gets his or her own thread.

Yet another feature of MySQL is its portability it has been ported to almost every platform. This means that you don't have to change your main platform to take advantage of MySQL. And if you do want to switch, there is probably a MySQL port for your new platform.

MySQL also has many different application programming interfaces (APIs). They include APIs for Perl, TCL, Python, C/C++, Java (JDBC), and ODBC. So no matter what your company's expertise is, MySQL has a way for you to access it.

MySQL is also very cheap. For an unlicensed, full version of MySQL, the cost is nothing. To license your copy will currently cost you \$200. This is an incredible deal, considering what you are getting for your money.

Database systems that provide half the features that MySQL has can cost tens of thousands of dollars. MySQL can do what they do better and for less.

MySQL is a relational database. It uses tables and columns to hold data that can be related by keys. It is well suited for this role. It is also very well suited for various architectures. It can be used in a strictly client/server architecture or as a standalone database.

## THE MySQL SUPPORTED TYPES

MySQL has various data types that support different functions. A data type is the type of data a column will store. There can be many different data types inside a table, but each column will store its own specific type of information. You can think of a data type as a kind of definition for a column.

A column defined as an integer column will only hold numeric information, whereas a column defined as a CHAR (10) will hold up to 10 alphanumeric characters. These definitions are the key to a quick and efficient database. There are basically three groups of data formats. The first is obviously numeric. Numeric data is data that is a positive or negative number such as 4 or -50.

Numeric data can also be in hexadecimal format (2ee250cc), scientific notation (2X10^23), or a decimal. The second type is character or string format. This format can consist of letters and numbers, whole words, addresses, phone numbers, and generally anything you have to put quotations around.

It consists of everything that doesn't quite fit into either of the other two categories. Some, like dates and times, could be alphanumeric but are stored like numbers. As well as data types, MySQL also provides column modifiers. These modifiers further help define a column's attributes.

They are AUTO\_INCREMENT, UNSIGNED, PRIMARY KEY, NULL, NOT NULL, and BINARY. A more detailed discussion of column modifiers takes place following the coverage of the basic data types.

MySQL runs on many platforms, and binaries are available for most of them. Binaries are the result of compiling the source code. This is by far the easiest way of acquiring MySQL. The alternative is downloading the source code for your platform and then compiling it.

MySQL has many utilities to import as well as export data. It shares some of the common options, but this utility does a little more. It takes the entire database and dumps it into a single text file.

This file contains all the SQL commands needed to recreate your database. It takes the schema and converts it to the proper DDL syntax (**CREATE** statements), and it takes all the data and creates **INSERT** statements out of them. This utility reverse engineers your database.

SYSTEM STUDY

## 2. SYSTEM STUDY

## 2.1 EXISTING SYSTEM

The existing System provides basic functionality needed to be handled in a hospital management environment. There is no intelligence of a software in such cases. In the existing system all the patient details, Doctor availability details and medicines prescribed by the doctor is maintained by the receptionist. If a patient has to be admitted, we need to check the availability of that particular doctor which consumes a lot of time if done manually

## 2.1.1 DRAWBACKS

- It is very difficult task to maintain all the details regarding the patient as far as existing system is considered
- There are also many loop holes when we look at the security of the systems and also there is no proper search technique to check person's information.

## 2.2 PROPOSED SYSTEM

In our proposed system, we are going to provide solutions to all the above mentioned problems. The System includes a web application accompanied by a microcontroller based hardware model. The web application serves patients with following facilities online appointment booking.

## **2.2.1 FEATURES**

- Our system ensures retention of patient's data and its security
- All the process has been handling into the single application.
- This system save the time and money.
- It improves the customer or patient's satisfaction.

# SYSTEM DESIGN & DEVELOPMENT

## 3. SYSTEM DESIGN AND DEVELOPMENT

## 3.1 FILE DESIGN

The selection of the file system design approach is done according to the needs of the developers what are the needed requirements and specifications for the new design. It allowed us to identify where our proposal fitted in with relation to current and past file system development. Our experience with file system development is limited so the research served to identify the different techniques that can be used.

The variety of file systems encountered show what an active area of research file system development is. The file systems may be from one of the two fundamental categories. In one category, the file system is developed in user space and runs as a user process. Another file system may be developed in the kernel space and runs as a privileged process. Another one is the mixed approach in which we can take the advantages of both aforesaid approaches. Each development option has its own pros and cons. In this article, these design approaches are discussed.

A file system is the data structure designed to support the abstraction of the data blocks as an archive and collection of files. This data structure is unique because it is stored on secondary storage (usually the disk), which is a very slow device.

The file system structure is the most basic level of organization in an operating system. Almost all of the ways an operating system interacts with its users, applications, and security model are dependent upon the way it organizes files on storage devices.

File Design Information systems in business are file and database oriented. Data are accumulated into files that are processed or maintained by the system. The systems analyst is responsible for designing files, determining their contents and selecting a method for organizing the data.

The most important purpose of a file system is to manage user data. This includes storing, retrieving and updating data. Some file systems accept data for storage as a stream of bytes which are collected and stored in a manner efficient for the media.

## 3.2 INPUT DESIGN

The input design is the link between the information system and the user. It comprises the developing specification and procedures for data preparation and those steps are necessary to put transaction data in to a usable form for processing can be achieved by inspecting the computer to read data from a written or printed document or it can occur by having people keying the data directly into the system. The design of input focuses on controlling the amount of input required, controlling the errors, avoiding delay, avoiding extra steps and keeping the process simple. The input is designed in such a way so that it provides security and ease of use with retaining the privacy. Input Design considered the following things:'

- What data should be given as input?
- How the data should be arranged or coded?
- The dialog to guide the operating personnel in providing input.
- Methods for preparing input validations and steps to follow when error occur.

## **OBJECTIVES**

- Input Design is the process of converting a user-oriented description of the input into a computer-based system. This design is important to avoid errors in the data input process and show the correct direction to the management for getting correct information from the computerized system.
- It is achieved by creating user-friendly screens for the data entry to handle large volume of data. The goal of designing input is to make data entry easier and to be free from errors. The data entry screen is designed in such a way that all the data manipulates can be performed. It also provides record viewing facilities.
- When the data is entered it will check for its validity. Data can be entered with the help of screens. Appropriate messages are provided as when needed so that the user
- It will not be in maize of instant. Thus the objective of input design is to create an input layout that is easy to follow

## 3.3 OUTPUT DESIGN

The design of output is the most important task of any system. During output design, developers identify the type of outputs needed, and consider the necessary output controls and prototype report layouts.

## **External Outputs**

Manufacturers create and design external outputs for printers. External outputs enable the system to leave the trigger actions on the part of their recipients or confirm actions to their recipients.

Some of the external outputs are designed as turnaround outputs, which are implemented as a form and re-enter the system as an input.

## **Internal outputs**

Internal outputs are present inside the system, and used by end-users and managers.

They support the management in decision making and reporting.

## **Output Integrity Controls**

Output integrity controls include routing codes to identify the receiving system, and verification messages to confirm successful receipt of messages that are handled by network protocol.

Printed or screen-format reports should include a date/time for report printing and the data. Multipage reports contain report title or description, and pagination. Pre-printed forms usually include a version number and effective date.

## 3.4 DATABASE DESIGN

Today's businesses depend on their databases to provide information essential for day to-day operations, especially in case of electronic commerce businesses who has a definite advantage with up-to-date database access. Good design forms the foundation of any database, and experienced hands are required in the automation process to design for optimum and stable performance.

Software Solutions have been constantly working on these platforms and have attained a level of expertise. We apply proven methodologies to design, develop, integrate and implement database systems to attain its optimum level of performance and maximize security to meet the client's business model.

#### **Business needs addressed:**

- Determine the basic objects about which the information is stored
- Determine the relationships between these groups of information and the objects
- Effectively manage data and create intelligent information
- Remote database administration or on site administrative support
- Database creation, management, and maintenance
- Information retrieval efficiency, remove data redundancy and ensure data security

The most important consideration in designing the database is how the information will be used. The main objective of designing a database is Data Integration, Data Integrity and Data Independence.

## **Data Integration**

In a database, information from several files is coordinated, accessed and operated upon as through it is in a single file. Logically, the information is centralized, physically; the data may be located on different devices, connected through data communication facilities.

## **Data Integrity**

Data integrity means storing all data in one place only and how each application accesses it. This approach results in more consistent information, one update being sufficient to achieve a new record status for all applications. This leads to less data redundancy that is data items need not be duplicated.

## **Data Independence**

Data in dependence is the insulation of application programs from changing aspects of physical data organization. This objective seeks to allow changes in the content and organization of physical data without reprogramming of application and allow modifications to application programs without reorganizing the physical data.

## 3.5 SYSTEM DEVELOPMENT

Systems development is the process of defining, designing, testing, and implementing a new software application or program. It could include the internal development of customized systems, the creation of database systems, or the acquisition of third party developed software.

Systems development life cycle phases include planning, system analysis, system design, development, implementation, integration and testing, and operations and maintenance.

## 3.5.1 DESCRIPTION OF MODULES

There are four modules in this project, they are

- Patient Registration
- Doctor Registration
- Doctor Appointment
- Appointment Patient Details

## **Patient Registration**

In this module is used to the hospital receptionist enters the login and collect the information from the patient details and save it. After the patient registration only the patient having an appointment for doctors.

## **Doctor Registration**

In this module is used to the hospital receptionist enter the doctors details and give the username and password to the doctors. Doctors are using this username and password to login and know about his/her appointments.

## **Doctor Appointment**

This module is used to the hospital receptionist have to give an appointment to a patient based on doctors. The user selects the doctor and give an appointment, finally the doctor will check what are the patients are admitted by them self.

## **Appointment Patient details**

In this module have to clarify the appointment patient details, every doctors has been enter the login and view their admitted patient who are all admitted and view their patient details also.

# TESTING & IMPLEMENTATION

## 4.TESTING AND IMPLEMENTATION

## **TESTING METHODOLOGIES:**

System testing is state of implementation, which is aimed at ensuring that the system works accurately and efficiently as expect before live operation commences. It certifies that the whole set of programs hang together.

System testing requires a test plan that consists of several key activities and step for run program, string, system and user acceptance testing. The implementation of newly designed package is important in adopting a successful new system

Testing is the important stage in software development, the system test in implementation stage in software development process. The system testing implementation should be confirmation that all is correct and an opportunity to show the users that the system works as expected. It accounts the largest percentage of technical effort in the software development process.

Testing phase in the development cycle validates the code against the functional specification testing is vital to achievement of the system goals. The objective of the testing is to discover errors to fulfil this objective a series of test step unit, integration.

Validation and system tests were planned and executed the test steps are

## **SYSTEM TESTING:**

Testing is an integral part of any system development life cycle. Insufficient and untested applications may tend to crash and the result is loss of economic and manpower investment besides user's dissatisfaction and downfall of reputation. Software testing can be looked upon as one among many processes, an organization performs, and that provides the lost opportunity to correct any flaws in the developed system. Software testing includes selecting test data that have more probability of giving errors.

The first step in system testing is to develop a plan that tests all aspects of the system. Completeness, correctness, reliability and maintainability of the software are to be tested for the best quality assurance that the system meets the specification and requirements for its

intended use and performance. System testing is the most useful practical process of executing a program with the implicit intention of finding errors that make the program fails.

System testing is done in three phases.

- Unit Testing
- Integration Testing
- Validation Testing

## **UNIT TESTING:**

Unit testing focuses verification effort on the smallest unit of software the module. Using the detailed design and the process specification testing is done to registration by the user with in the boundary of the Login module. The login form receives the username and password details and validates the value with the database. If valid, the home page is displayed.

## **INTEGRATION TESTING:**

Integration Testing is the process of this activity can be considered as testing the design and hence module interaction. The primary objective of integration testing is to discover errors in the interfaces between the components. Login form and registration form are integrated and tested together. If the user is newly registered, the received details will be stored in the registration table. While logging in, the application will check for valid user name and password in the registration table and if valid the user is prompted for submitting complaints.

Data can be lost across an interface, one module can have adverse effect on another sub function when combined it may not produce the desired major functions. Integration testing is a systematic testing for constructing test to uncover errors associated within an interface.

The objectives taken from unit tested modules and a program structure is built for integrated testing. All the modules are combined and the test is made.

A correction made in this testing is difficult because the vast expenses of the entire program complicated the isolation of causes. In this integration testing step, all the errors are corrected for next testing process.

## **VALIDATION TESTING:**

Validation are independent procedures that are used together for checking that a product, service, or system meets requirements and specifications and that it fulfills its in purpose the actual result from the expected result for the complaint process. Select the complaint category of the complaint by user. The input given to various forms fields are validated effectively. Each module is tested independently. It is tested that the complaint module fields receive the correct input for the necessary details such as complaint category, complaint id, reference name, complaint description, and email for further process.

After the completion of the integrated testing, software is completely assembled as a package; interfacing error has been uncovered and corrected and a final series of software test validation begins.

Validation testing can be defined in many ways but a simple definition is that validation succeeds when the software function in a manner that can be reasonably expected by the customer. After validation test has been conducted, one of two possible conditions exists.

## **OUTPUT TESTING:**

The next process of validation testing, is output testing of the proposed system, since no system could be successful if it does not produce the required output in the specified format. Asking the user about the format required, list the output to be generated or displayed by the system under considerations.

Output testing is a different test whose primary purpose is to fully exercise the computer based system although each test has a different purpose all the work should verify that all system elements have been properly integrated and perform allocated functions.

The output format on the screen is found to be corrected as the format was designed in the system design phase according to the user needs for the hard copy also; the output testing has not resulted in any correction in the system.

#### **SYSTEM IMPLEMENTATION:**

When the initial design was done for the system, the client was consulted for the acceptance of the design so that further proceedings of the system development can be carried on. After the development of the system a demonstration was given to them about the working of the system. The aim of the system illustration was to identify any malfunction of the system.

After the management of the system was approved the system implemented in the concern, initially the system was run parallel with existing manual system. The system has been tested with live data and has proved to be error free and user friendly.

Implementation is the process of converting a new or revised system design into an operational one when the initial design was done by the system; a demonstration was given to the end user about the working system.

This process is uses to verify and identify any logical mess working of the system by feeding various combinations of test data. After the approval of the system by both end user and management the system was implemented.

System implementation is made up of many activities. The six major activities are as follows.

## **CODING:**

Coding is the process of whereby the physical design specifications created by the analysis team turned into working computer code by the programming team. A design code may be a tool which helps ensure that the aspiration for quality and quantity for customers and their requirements, particularly for large scale projects, sought by the water agency Design pattern are documented tried and tested solutions for recurring problems in a given context. So basically you have a problem context and the proposed solution for the same.

## **INSTALLATION:**

Installation is the process during which the current system is replaced by the new system. This includes conversion of existing data, software, and documentation and work procedures to those consistent with the new system.

## **DOCUMENTATION:**

Documentation is descriptive information that describes the use and operation of the system. The user guide is provided to the end user as the student and administrator. The documentation part contains the details as follows,

User requirement and water agency details administration has been made online. Any customer can request their water requirement details through online and also use of documentation, they can view the purpose of each purpose, The admin could verify the authentication of the users, users requirements and need to take delivery process, thus the documentation is made of full view of project thus it gives the guideline to study the project and how to execute also.

## **USER TRAINING AND SUPPORT:**

The software is installed at the deployment environment, the developer will give training to the end user of the regional transport officer and police admin officer in that software. The goal of an end user training program is to produce a motivated user who has the skills needed to apply what has been to apply what has been learned to perform the job related task. The following are the instruction which is specified the handling and unhandling events in the application

- The authenticated user of admin and office workers only login in the application with authorized username and password.
- Don't make user waste their time to come straight to the water agency or make a phone call.
- It can easily track through online by the user.
- Very user friendliness software

## **IMPLEMENTATION PROCEDURES:**

Implementation includes all the activities that take place to convert the old system to the new one. Proper implementation is essential to provide a reliable system to meet the organization requirements. Implementation is the stage in the project where the theoretical design is turned into a working system. The most crucial stage is achieving a successful new system & giving the user confidence in that the new system will work efficiently & effectively in the implementation state.

## IMPLEMENTATION PROCEDURES

## **PILOT RUNNING:**

Processing the current data by only one user at a time called the pilot running process. When one user is accessing the data at one system, the system is sets to be engaged and connected in network. This process is useful only in system where more than one user is restricted.

## **PARALLEL RUNNING:**

Processing the current data by more than one user at a time simultaneously is said to be parallel running process. This same system can be viewed and accessed by more than one user at the time. Hence the implementation method used in the system is a pilot type of implementation.

Implementation is the stage in the project where the theoretical design is turned into a working system. The most crucial stage is achieving a successful new system & giving the user confidence in that the new system will work efficiently & effectively in the implementation state.

The stage consists of,

• Testing the developed program with sample data.

- Detection's and correction of error.
- Creating whether the system meets user requirements.
- Making necessary changes as desired by the user.
- Training user personnel.

## **USER TRAINING:**

User Training is designed to prepare the user for testing &consenting the system. .

- User Manual.
- Help Screens.
- Training Demonstration.

## **USER MANUAL:**

The summary of important functions about the system and software can be provided as a document to the user.

## **HELP SCREENS:**

This features now available in every software package, especially when it is used with a menu. The user selects the "Help" option from the menu. The system accesses the necessary description or information for user reference.

## TRAINING DEMONSTRATION:

Another User Training element is a Training Demonstration. Live demonstrations with personal contact are extremely effective for Training Users.

## **SYSTEM MAINTENANCE:**

Maintenance is actually the implementation of the review plan. As important as it is, many programmers and analysts are to perform or identify themselves with the maintenance effort. There are psychological, personality and professional reasons for this. Analysts and programmers spend far more time maintaining programs than they do writing them. Maintenance accounts for 50-80 percent of total system development

Maintenance is expensive. One way to reduce the maintenance costs are through maintenance management and software modification audits.

- Maintenance is not as rewarding as exciting as developing systems. It is perceived as requiring neither skill not experience.
- Users are not fully cognizant of the maintenance problem or its high cost.
- Few tools and techniques are available for maintenance.
- A good test plan is lacking.
- Standards, procedures, and guidelines are poorly defined and enforced.
- Programs are often maintained without care for structure and documentation.
- There are minimal standards for maintenance.
- Programmers expect that they will not be in their current commitment by time their programs go into the maintenance cycle.

#### **Corrective Maintenance:**

It means repairing, processing or performance failure or making changes of previously uncovered problems or false assumptions. Task performed to identify, isolate, and rectify a fault so that the failed equipment, machine, or system can be restored to an operational condition within the tolerances or limits established for in-service operations.

Corrective maintenance can be subdivided into "immediate corrective maintenance" (in which work starts immediately after a failure) and "deferred corrective maintenance" (in which work is delayed in conformance to a given set of maintenance rules).

### **Perfective Maintenance:**

It means changes made to a system to add new features or to improve performance. Preventive maintenance is predetermined work performed to a schedule with the aim of preventing the wear and tear or sudden failure of equipment components, process or control equipment failure can have adverse results in both human and economic terms. In addition to down time and the costs involved to repair and/or replace equipment parts or components, there is the risk of injury to operators, and of acute exposures to chemical and/or physical agents.

Time-based or run-based Periodically inspecting, servicing, cleaning, or replacing parts to prevent sudden failure .On-line monitoring of equipment in order to use important/expensive parts to the limit of their serviceable life. Preventive maintenance involves changes made to a system to reduce the chance of future system failure.

An example of preventive maintenance might be to increase the number of records that a system can process far beyond what is currently needed or to generalize how a system sends report information to a printer so that so that the system can adapt to changes in printer technology.

### **Preventive Maintenance:**

During system operation, changes in user activity or data pattern can cause a decline in efficiency, and perfective maintenance might be needed to restore performance. Usually, the perfective maintenance work is initiated by the IT department, while the corrective and adaptive maintenance work is normally requested by users.

CONCLUSION

# 5. CONCLUSION

Hospital appointment systems are essential tools for managing and organizing hospital operations, especially in the outpatient department. These systems help to automate various aspects of hospital appointments, including scheduling, registration, and follow-up.

Hospital appointment systems offer several benefits, including increased efficiency, reduced waiting times, and enhanced patient satisfaction. By automating various aspects of appointment management, hospital staff can focus on providing better patient care and improving the patient experience.

Moreover, hospital appointment systems provide real-time data and analytics, enabling hospital administrators to monitor patient flow, identify bottlenecks, and make informed decisions to optimize hospital operations. This leads to better resource allocation, improved staff productivity, and enhanced patient safety.

These systems also improve communication and collaboration between different departments and staff members, allowing for seamless coordination of efforts. This leads to better patient outcomes, improved patient satisfaction, and enhanced hospital reputation.

In conclusion, hospital appointment systems are powerful tools that help hospital administrators manage and organize their outpatient operations. These systems provide several benefits, including increased efficiency, reduced waiting times, enhanced patient satisfaction, and real-time data insights. Hospital administrators can leverage these benefits to improve patient care, optimize hospital operations, and enhance hospital reputation.

# FUTURE ENHANCEMENT & BIBLIOGRAPY

## **FUTURE ENHANCEMENT**

The scope of the project includes that what all future enhancements can be done in this system to make it more feasible to us:-

- Databases for different products range and storage can be provided.
- Multilingual support can be provided so that it can be understandable by the person of any language.
- More graphics can be added to make it more user-friendly and understandable.
- Manage & backup versions of documents online.

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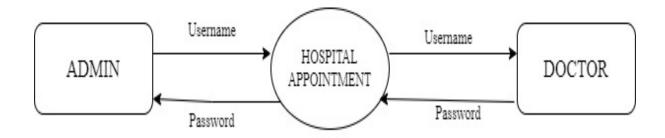
APPENDICES

# **APPENDICES**

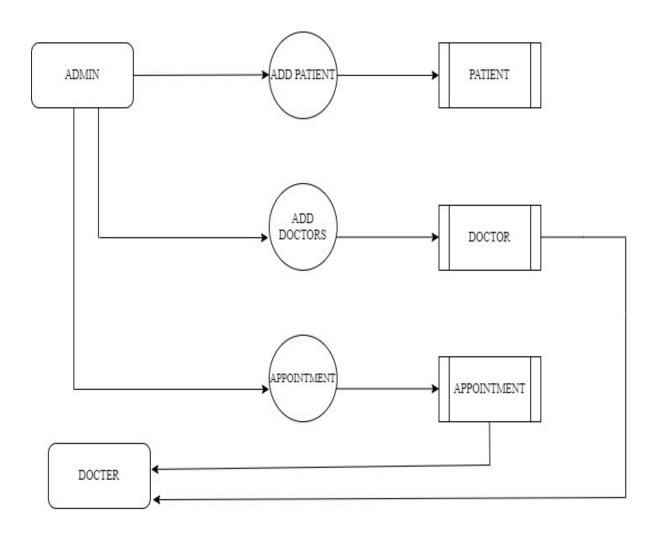
## A. DATA FLOW DIAGRAM

A data-flow diagram (DFD) is a way of representing a flow of a data of a process or system. The DFD also provides information about the outputs and inputs of each entity and process itself. A data-flow diagram is a part of structured-analysis modeling tools

# LEVEL 0:



# LEVEL 1:



# **B. TABLE STRUCTURE**

The table needed for each module was designed and the specification of each and every column was given based on the records and details collected during record specification of the system study.

# **TABLE NAME: ADMIN**

FIELD	DATA TYPE	SIZE	CONSTRAINT
Adminid	INT	10	Primary key
Username	Varchar	20	Not null
password	Varchar	20	Not null

# **TABLE NAME: PATIENT**

FIELD	DATA TYPE	SIZE	CONSTRAINT
patient id	Int	10	Primary key
firstname	Varchar	20	Not null
last name	Varchar	10	Not null
Mobile	Number	10	Not null
Email	Varchar	30	Not null
Attender	Varchar	20	Not null
Emergency Number		10	Not null

# **TABLE NAME: DOCTOR**

FIELD	DATA TYPE	SIZE	CONSTRAINT
Doctor Id	Int	10	Primary key
doctor name	Varchar	20	Not null
Speciality	Varchar	20	Not null
qualification	Varchar	10	Not null
username	Varchar	10	Not null
password	Varchar	10	Not null

# TABLE NAME: APPOINTMENT

FIELD	DATA TYPE	SIZE	CONSTRAINT
Appointment id	Int	10	Primary key
doctor id	Int	10	Foreign Key
Patient Id	Int	10	Foreign Key
Appointment Date	Date	10	Not null
Token	Int	10	Not null

### C.SAMPLE CODEING

package com.example.demo.controller;

```
import java.util.List;
importorg.springframework.beans.factory.annotation.Autow;
import org.springframework.http.ResponseEntity;
importorg.springframework.web.bind.annotation.GetMappig;
importorg.springframework.web.bind.annotation.PathVariae;
importorg.springframework.web.bind.annotation.PostMappi;
importorg.springframework.web.bind.annotation.RequestMg;
importor g. spring framework. we b. bind. annotation. Rest Contre;\\
importcom.example.demo.response.GetAppointmentDetailsRe;
import com.example.demo.response.GetBillingResponse;
import com.example.demo.response.GetCustomerResponse;
import com.example.demo.response.GetDoctorListResponse;
import com.example.demo.response.GetEmployeeResponse;
import com.example.demo.response.GetPatientResponse;
import com.example.demo.response.GetProductResponse;
import com.example.demo.response.GetStockResponse; import
com.example.demo.service.ApiService;
@RestController
@RequestMapping(value = { "/api" })
public class ApiController {
      @Autowired
      ApiService service;
      @GetMapping("/login/{username}/{password}") public Integer
login(@PathVariable String username,@PathVariable String password) {
```

```
List<Object[]> res = service.login(username,password);
      if(res.size()==0) {
                     return 0;
              }else {
                    return (Integer)res.get(0)[0];
              }
       }
@PostMapping("/add_patient/{firstname}/{lastname}/{mobile}/{email}/{attendar}/{emerge
ncy}") public String add_patient(@PathVariable String firstname,
                    @PathVariable String lastname,
                    @PathVariable String mobile,
                    @PathVariable String email,
                    @PathVariable String attendar,
                    @PathVariable String emergency) {
      service.add_patient(firstname,lastname,mobile,email,attendar,emergency);
              return "Patient Saved Sucessfully";
       }
@PostMapping("/adddoctor/{doctorname}/{qualification}/{speciality}/{username}/{passwo
r d}") public String adddoctor(@PathVariable String doctorname,
                    @PathVariable String qualification,
                    @PathVariable String speciality,
                     @PathVariable String username,
              @PathVariable String password) {
      service.adddoctor(doctorname, qualification, speciality, username, password);
      return "Doctor Saved Sucessfully";
```

```
}
       @GetMapping("/get_patient/{mobile}")
                                                 public
ResponseEntity<GetPatientResponse> get_mobile(@PathVariable String mobile) {
      return ResponseEntity.ok().body(service.get_patient(mobile));
       }
@PostMapping("/book_appointment/{doctor_id}/{patient_id}/{amount}/{appointment_date}
")
     public String book_appointment(
                    @PathVariable Integer doctor_id,
                    @PathVariable Integer patient_id,
                    @PathVariable Integer amount,
                   @PathVariable String appointment_date) {
      service.book_appointment(doctor_id,patient_id,amount,appointment_date);
      return "Appointment Booked Sucessfully";
       }
       @GetMapping("/get_doctorlist")
                                          public
ResponseEntity<List<GetDoctorListResponse>> get_doctorlist() {
      return ResponseEntity.ok().body(service.get_doctorlist());
       }
    @GetMapping("/get_appointment_details_doctor/{id}/{date}")
      public
                                 ResponseEntity<List<GetAppointmentDetailsResponse>>
get_appointment_details_doctor(@PathVariable Integer id,@PathVariable String date) {
             return
ResponseEntity.ok().body(service.get_appointment_details_doctor(id,date));
       }
} package
com.example.demo.configuration;
import java.util.Properties;
```

```
import javax.sql.DataSource;
import org.springframework.beans.factory.annotation.Value; import
org.springframework.context.annotation.Bean; import
org.springframework.context.annotation.Configuration; import
org.springframework.jdbc.datasource.DriverManagerDataSource; import
org.springframework.orm.hibernate5.HibernateTransactionManager; import
org.springframework.orm.hibernate5.LocalSessionFactoryBean; import
org.springframework.transaction.annotation.EnableTransactionManagement
@Configuration
@EnableTransactionManagement
public class HibernateConfiguration
  @Value("${db.driver}")
private String DB_DRIVER;
@Value("${db.password}")
private String
DB_PASSWORD;
@Value("${db.url}")
                     private String DB_URL;
  @Value("${db.username}")
private String DB_USERNAME;
  @Value("${hibernate.dialect}")
private String
HIBERNATE_DIALECT;
   @Value("${hibernate.show_sql}") private String HIBERNATE_SHOW_SQL;
  @Value("${hibernate.hbm2ddl.auto}")
private String
HIBERNATE_HBM2DDL_AUTO;
  @Value("${entitymanager.packagesToScan}")
String ENTITYMANAGER_PACKAGES_TO_SCAN;
  public LocalSessionFactoryBean sessionFactory() {
```

```
LocalSessionFactoryBean sessionFactory = new LocalSessionFactoryBean();
sessionFactory.setDataSource(dataSource());
    sessionFactory.setPackagesToScan(ENTITYMANAGER_PACKAGES_TO_SCAN);
    Properties hibernateProperties = new Properties();
hibernateProperties.put("hibernate.dialect", HIBERNATE_DIALECT);
hibernateProperties.put("hibernate.show_sql", HIBERNATE_SHOW_SQL);
hibernateProperties.put("hibernate.hbm2ddl.auto",
HIBERNATE_HBM2DDL_AUTO);
sessionFactory.setHibernateProperties(hibernateProperties);
return sessionFactory;
  }
  public DataSource dataSource() {
    DriverManagerDataSource dataSource = new
DriverManagerDataSource();
dataSource.setDriverClassName(DB_DRIVER);
dataSource.setUrl(DB_URL);
dataSource.setUsername(DB_USERNAME);
dataSource.setPassword(DB_PASSWORD);
                                             return dataSource;
  }
  public HibernateTransactionManager transactionManager() {
    HibernateTransactionManager txManager = new
HibernateTransactionManager();
txManager.setSessionFactory(sessionFactory().getObject());
                                                           return
txManager;
  }
}
var patient_id;
var final_id;
```

```
$(document).ready(function(){
                                     var
url_string = window.location.href;
                                     var
url = new URL(url_string); final_id =
url.searchParams.get("id");
       $("#searchmobile").change(functio
n(){
              patient_id=";
               $.ajax({
                type: "GET",
                url: "http://localhost:8080/hospital/api/get_patient/"+$("#searchmobile").val(),
                success: function(datas) {
                       patient_id=datas.id;
                       $("#firstname").val(datas.firstname);
                       $("#lastname").val(datas.lastname);
                },
              });
       });
       $.ajax({
                type: "GET",
                url: "http://localhost:8080/hospital/api/get_doctorlist",
                success: function(datas) {
                        var html = ``;
                       for (var i in datas) {
                               var data = datas[i];
                             html += `<option id=`+data.id+`>`+data.name+`</option>`;
                        }
                       $("#doctornameList").html(html)
                        //var doctor_id=$("#doctornameList").children(":selected").attr("id");
                      },
               });
}); function search(){
                              var
date = $("#add_date").val();
```

```
$.ajax({
                   type: "GET",
 url: "http://localhost:8080/hospital/api/get_appointment_details_doctor/"+final_id+"/"+date,
                   success: function(datas) {
                          var html = ``;
                          for (var i in datas) {
                          var data = datas[i];
                          html += ` 
              `+(++i)+`
              `+data.firstname+`
              `+data.lastname+`
              `+data.mobile+`
             `+data.appointmentdate+`
              `+data.tokenno+``;
                          }
                         $("#app_body").html(html)
                    },
             });
} function patientregister(){ var firstname =
$("#firstname").val();
      var lastname = $("#lastname").val();
var mobile = $("#mobile").val();
                                 var email
= $("#email").val();
var attendar = $("#attendarname").val();
var emergency = $("#emergencyno").val();
      $.ajax({
                   type: "POST",
```

```
url: "http://localhost:8080/hospital/api/add_patient/"+firstname+"/"+lastname+"/"+mobile+"/"
+email+"/"+attendar+"/"+emergency,
                     success: function(datas) {
                             alert(datas);
                             $("#firstname").val("");
                             $("#lastname").val("");
                             $("#mobile").val("");
                             $("#email").val("");
                            $("#attendarname").val("");
                            $("#emergencyno").val("");
                      },
               });
} function bookappointment(){
                                     var
doctor_id=$("#doctornameList").children(":selected").attr("id");
       var appointment_date = $("#appointment_date").val();
       var amount = $("#amount").val();
       $.ajax({
                      type: "POST",
url: "http://localhost:8080/hospital/api/book_appointment/"+doctor_id+"/"+patient_id+"/"+am
ount+"/"+appointment_date,
                     success: function(datas) {
                             alert(datas);
                            $("#searchmobile").val("");
                             $("#firstname").val("");
                             $("#lastname").val("");
                             $("#amount").val("");
                            $("#appointment_date").val("");
```

```
},
               });
} function adddoctor(){
                             var doctorname =
$("#doctorname").val();
                             var qualification
= $("#qualification").val();
                             var speciality =
$("#speciality").val();
                             var username =
$("#username").val(); var password =
$("#password").val();
       $.ajax({
                      type:"POST",
url: "http://localhost:8080/hospital/api/adddoctor/"+doctorname+"/"+qualification+"/"+specia
                                                          1 ity+"/"+username+"/"+password,
                     success: function(datas) {
                             alert(datas);
                             $("#doctorname").val("");
                             $("#qualification").val("");
                             $("#speciality").val("");
                             $("#username").val("");
                             $("#password").val("");
                      },
               });
} function login(){
                      var username =
$("#username").val();
                             var
password = $("#password").val();
       $.ajax({
                      type: "GET",
```

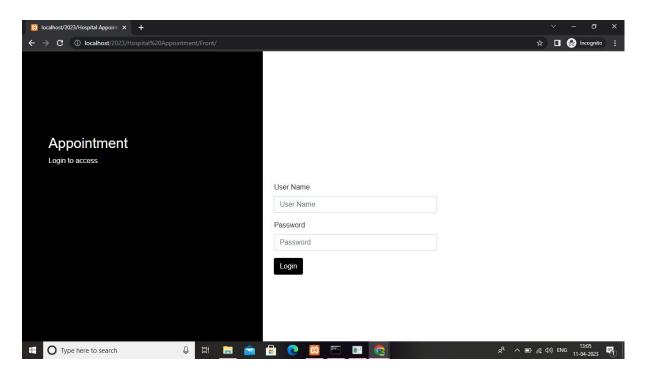
```
url: "http://localhost:8080/hospital/api/login/"+username+"/"+password,
       success: function(datas) {
                             if(datas){
                                   window.location="/mobile/customer-registration.html";
                             }else{
                            alert('Invalid username and password')
                             }
                      },
              });
} function addCustomer(){
name = $("#name").val();
                             var
mobile = $("#mobile").val();
       var address =
$("#address").val(); var gender =
$("#gender").val();
                     var email =
$("#email").val();
       $.ajax({
                     type:"POST",
url: "http://localhost:8080/hospital/api/add_customer/"+name+"/"+mobile+"/"+address+"/"+g
e nder+"/"+email,
                     success: function(datas) {
                             alert(datas);
                             $("#name").val("");
                             $("#mobile").val("");
                             $("#address").val("");
                             $("#gender").val("");
```

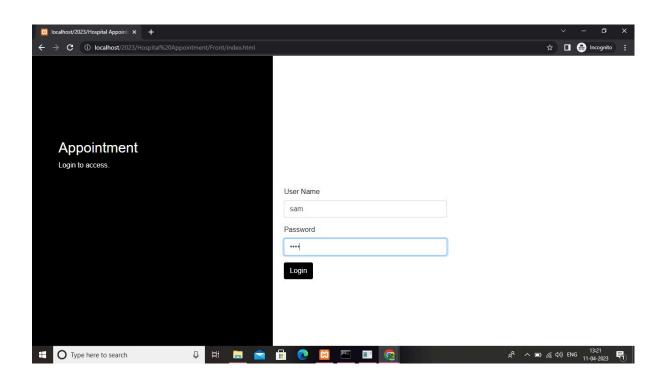
```
$("#email").val("");
                         load();
                   },
             });
} function (){
      $.ajax({
                  type: "GET",
                   url: "http://localhost:8080/hospital/api/get_customer",
                   success: function(datas) {
                         var html = ``;
                         for (var i in datas) {
                         var data = datas[i];
                         html += ` 
              getCustomer
                            `+(++i)+`
                          `+data.name+`
                           `+data.mobile+`
                           `+data.address+`
                           `+data.gender+`
                           `+data.email+` ';
                          }
                         $("#table_body").html(html)
                   },
             });
} function addEmployee(){
name = $("#name").val();
                         var
mobile = $("#mobile").val();
      var address =
```

```
$("#address").val(); var gender =
$("#gender").val();
                     var salary =
$("#salary").val(); var age =
$("#age").val();
       $.ajax({
                     type:"POST",
       url: "http://localhost:8080/hospital/api/add_employee/"+name+"/"+mobile+"/"+addres
       s+"/"+g ender+"/"+salary+"/"+age,
                     success: function(datas) {
                             alert(datas);
                             $("#name").val("");
                             $("#mobile").val("");
                             $("#address").val("");
                             $("#gender").val("");
                             $("#salary").val("");
                             $("#age").val("");
                             load();
                      },
               });
} function
getEmployee(){
       $.ajax({
                     type: "GET",
                     url: "http://localhost:8080/hospital/api/get_employee",
                      success: function(datas) {
                             var html = ``;
```

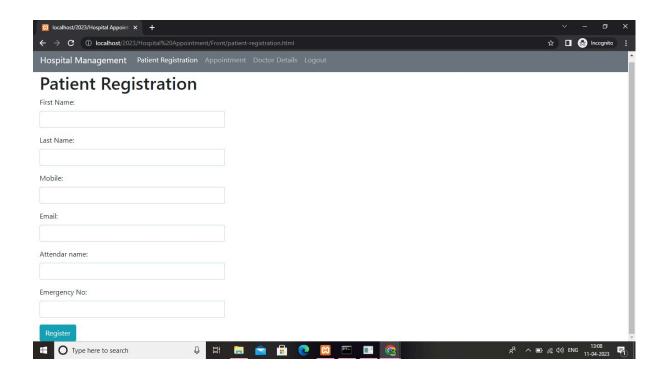
# D.SAMPLE INPUT AND OUTPUT DESIGN:

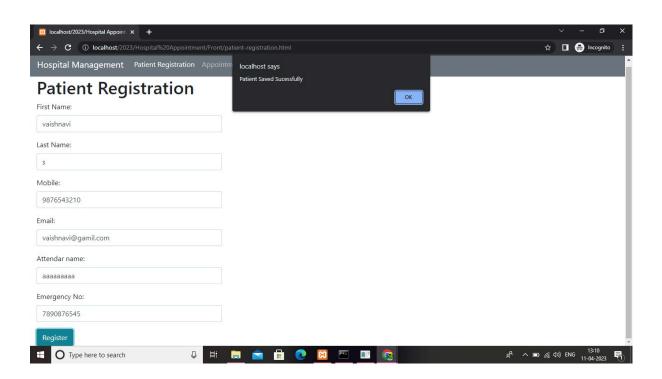
# **LOGIN PAGE:**



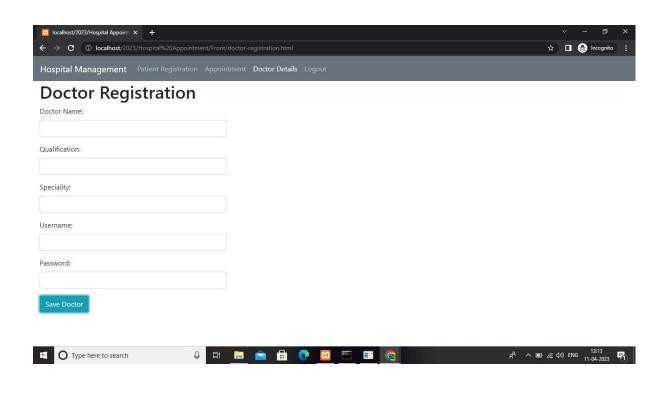


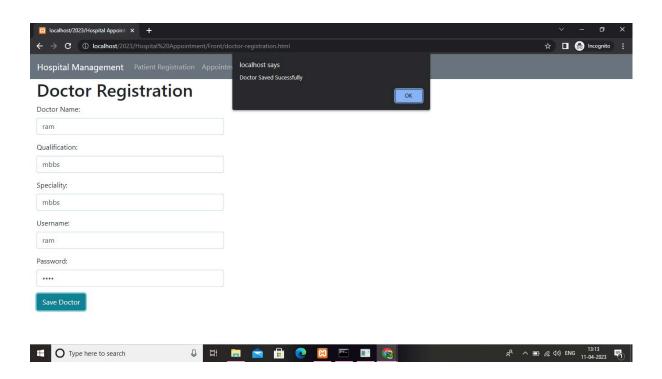
# **PATIENT REGISRATION:**



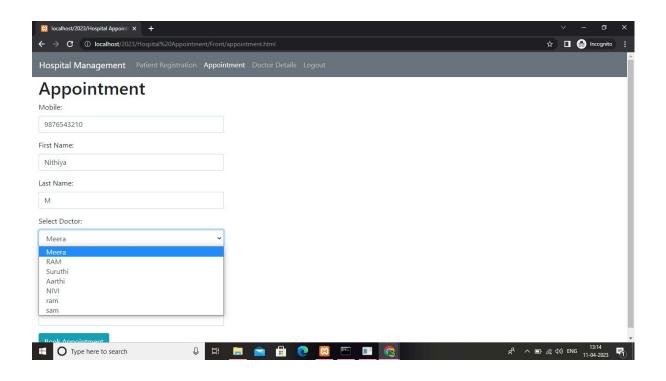


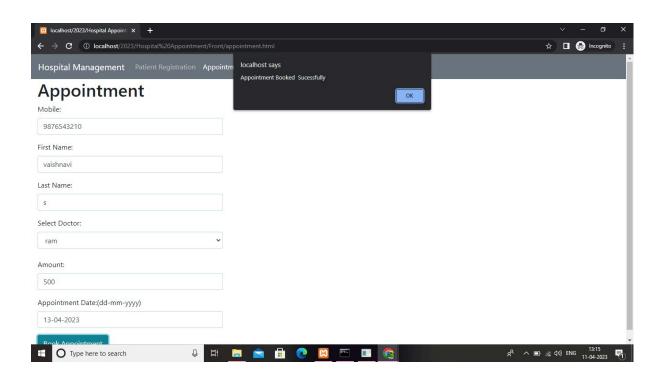
# **DOCTOR REGISTRATION:**



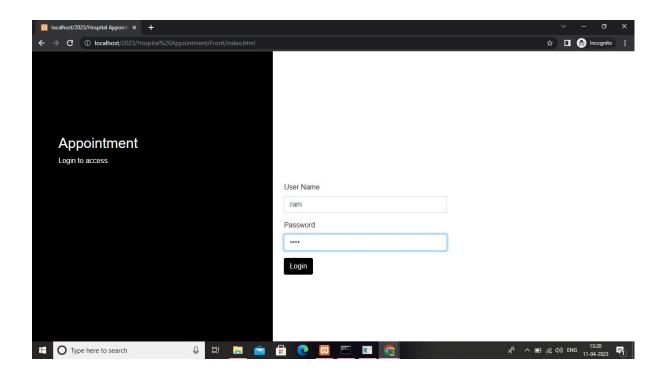


# **PATIENT APPOINTMENT:**

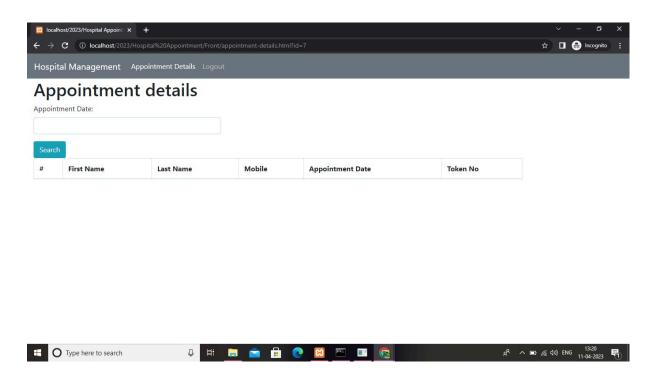




# **DOCTOR LOGIN:**



# **APPOINTMENT DETAILS:**





Searc	ch				
#	First Name	Last Name	Mobile	Appointment Date	Token No
1	Nithiya	М	9876543210	13-04-2023	1
2	Nithiya	М	9876543210	13-04-2023	2
3	Akila	S	7502529750	13-04-2023	3
4	Danu	R	9345383217	13-04-2023	4
5	mano	r	7890654324	13-04-2023	5



