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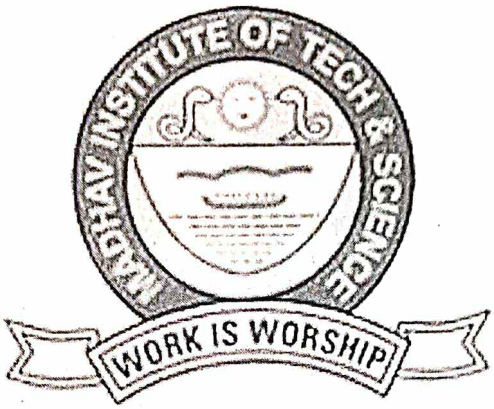

Project Report

on

COVID Bed Slot Booking System

Submitted By:

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0901CS191002

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Assistant Professor

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MAY-JUNE 2022

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CERTIFICATE

This is certified that **Aayushi Gupta 0901CS191002** has submitted the project report titled Covid Bed Slot Booking System under the mentorship of Prof. Mir Shahnawaz in partial fulfilment of the requirement for the award of degree of Bachelor of Technology in Computer Science and Engineering from Madhav Institute of Technology and Science, Gwalior.

09/05/22

Mr. Mir Shahnawaz
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Computer Science and Engineering

Dr. Manish Dixit
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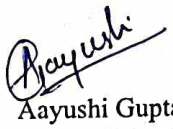
DECLARATION

I hereby declare that the work being presented in this project report, for the partial fulfilment of requirement for the award of the degree of Bachelor of Technology in Computer Science and Engineering at Madhav Institute of Technology & Science, Gwalior is an authenticated and original record of my work under the mentorship of Mr. Mir Shahnawaz ,Assistant Professor,Computer Science Department.

I declare that I have not submitted the matter embodied in this report for the award of any degree or diploma anywhere else.



Aayushi Gupta
0901CS191002
3rd year
Computer Science and Engineering

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

ACKNOWLEDGEMENT

The full semester project has proved to be pivotal to my career. I am thankful to my institute, **Madhav Institute of Technology and Science** to allow me to continue my disciplinary/interdisciplinary project as a curriculum requirement, under the provisions of the Flexible Curriculum Scheme (based on the AICTE Model Curriculum 2018), approved by the Academic Council of the institute. I extend my gratitude to the Director of the institute, **Dr. R. K. Pandit** and Dean Academics, **Dr. Manjaree Pandit** for this.

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I am sincerely thankful to my faculty mentors. I am grateful to the guidance of **Mr. Mir Shahnawaz ,Assistant Professor,** CSE Department ,for his continued support and guidance throughout the project. I am also very thankful to the faculty and staff of the department.

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ABSTRACT

Covid Bed Slot Booking System is software which is helpful for patients as well as the hospital authorities. In the current system all the activities are done manually. Its time saving and scalable. Our Covid Bed Slot Booking System deals with the number of beds available in various hospitals and book if available among various hospital as per patient need. In the software we can register as a user and user has three types patient,hospital and administrator. Administrator has the power to add new user and can edit the hospital details entered. A admin can add hospital record ,authenticate hospital so that hospital can update vacancies time to time. Patients can search for hospital and check for availablity of beds nearby them.

Keywords- Hospital, booking slot, sqlalchemy, patient, unique login

सार:

को वड बेड स्लॉट बु कंग सस्टम एक ऐसा सॉफ्टवेयर है जो मरीजों के साथ-साथ अस्पताल के अ धकारियों के लए भी मददगार है।

मौजूदा व्यवस्था में सभी गति व धयां मैनुअली की जाती हैं। इसका समय बचाने वाला और स्केलेबल। हमारा को वड बेड स्लॉट बु कंग सस्टम व भन्न अस्पतालों में उपलब्ध बिस्तरों की संख्या से संबं धत है और रोगी की आवश्यकता के अनुसार व भन्न अस्पतालों में उपलब्ध होने पर बुक करता है। सॉफ्टवेयर में हम एक उपयोगकर्ता के रूप में पंजीकरण कर सकते हैं और उपयोगकर्ता के पास तीन प्रकार के रोगी, अस्पताल और प्रशासक होते हैं। व्यवस्थापक के पास नया उपयोगकर्ता जोड़ने की शक्ति है और वह दर्ज कए गए अस्पताल के ववरण को संपादित कर सकता है। एक व्यवस्थापक अस्पताल रिकॉर्ड जोड़ सकता है, अस्पताल को प्रमा णत कर सकता है ता क अस्पताल समय-समय पर रिक्तियों को अपडेट कर सके। मरीज अस्पताल की तलाश कर सकते हैं और अपने आस-पास बिस्तरों की उपलब्धता की जांच कर सकते हैं।

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INTRODUCTION

1.1 OBJECTIVES:

 The main objective of the project is to design and develop system that help user to search and book slot in hospital .

 Easy to use and an efficient computerized system.

 To develop an accurate and flexible system, it will eliminate data redundancy.

 To study the functioning of booking system..

 To make a software fast in processing, with good user interface.

 To make software with good user interface so that user can change it and it should be used

for a long time without error and maintenance.

 To provide synchronized and centralized farmer and seller database.

 Computerization can be helpful as a means of saving time and money.

 To provide better Graphical User Interface (GUI).

 Less chances of information leakage.

 Provides Security to the data by using login and password method.

 To provide immediate storage and retrieval of data and information.

 Improving arrangements for patients.

 Reducing paperwork.

1.2 Motivation to Work

 Time consumption in search for available bed in hospitals.

 Delay in treatment of patients.

 Less Reliable use of papers for storing valuable data information is not at all reliable.

 Aadhar linkage with the official aadhar database has not been done

CHAPTER-2

STUDY OF EXISTING SYSTEM

2.1 CASE STUDY

The success of any organization such as Health Sector hinges on its ability to acquire accurate and timely data about its operations, to manage this data effectively, and to use it to analyze and guide its activities. Integrated hospital database system offer users (Patients, hospital) with a unified view of data from multiple sources. To provide a single consistent result for every object represented in these data sources, data fusion is concerned with resolving data inconsistency present in the heterogeneous sources of data. The main objective of this project is to build a rigid and robust integrated hospital database system that will track and store the availability of beds in hospital during covid pandemic so that patients can easily book ventilated bed for their easiy treatment. This easy-to-use, integrated database application is geared towards reducing time spent looking for treatment and ventilator. The system is intended to accept process and generate report accurately and any user can access the system at any point in time provided internet facility is available. The system is also intended to provide better services to users, provide meaningful, consistent, and timely data and information and finally promotes efficiency by converting paper processes to electronic form. The system was developed using technologies such as, HTML, CSS ,JS and MySQL. PYTHON- FLASK, HTML and CSS are used to build the user interface and database was built using MySQL. The system is free of errors and very efficient and less time consuming due to the care taken to develop it. All the phases of software development cycle are employed and it is worthwhile to state that the system is very robust. Provision is made for future development in the system.

2.2 PROPOSED SYSTEM

While there has been no consensus on the definition of Hospital Management in the literature, they have proposed that researchers adopt the below definition to allow for the coherent development of required number of beds. In order to have a successful hospital management, we need to make many decisions related to the number of ICU beds available, and data. Each records should be added in a way to increase the scalability. Covid Bed Slot Booking system is more complex during early pandemic rise because of the impact on people's number requiring adequate and accurate information of patients need.

CHAPTER 3

3. DATABASE DESIGN

3.1 Software Requirement Specifications

3.1.1 SOFTWARE REQUIREMENTS:

Frontend- HTML, CSS, Java Script, Bootstrap

Backend-Python flask (Python 3.7) , SQLAlchemy,

- Operating System: Windows 10
- Google Chrome/Internet Explorer
- XAMPP (Version-3.7)
- Python main editor (user interface): PyCharm Community
- workspace editor: Sublime text 3

3.1.2 HARDWARE REQUIREMENTS:

- Computer with a 1.1 GHz or faster processor
- Minimum 2GB of RAM or more
- 2.5 GB of available hard-disk space
- 5400 RPM hard drive
- 1366 × 768 or higher-resolution display
- DVD-ROM drive

3.2 CONCEPTUAL DESIGN:

3.2.1 E-R DIAGRAM:

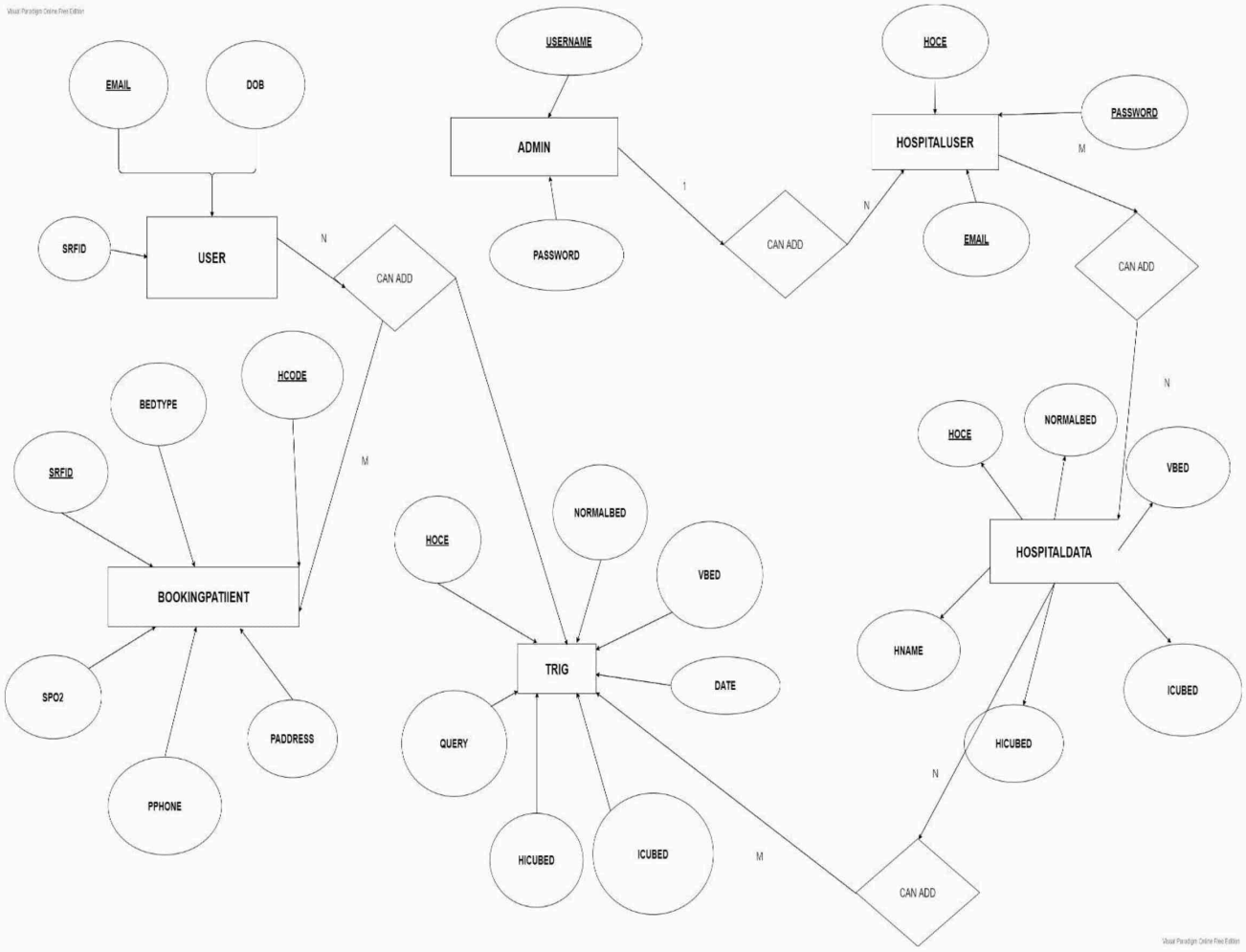


Fig.1 E-R DIAGRAM

3.2.2 SCHEMA DIAGRAM

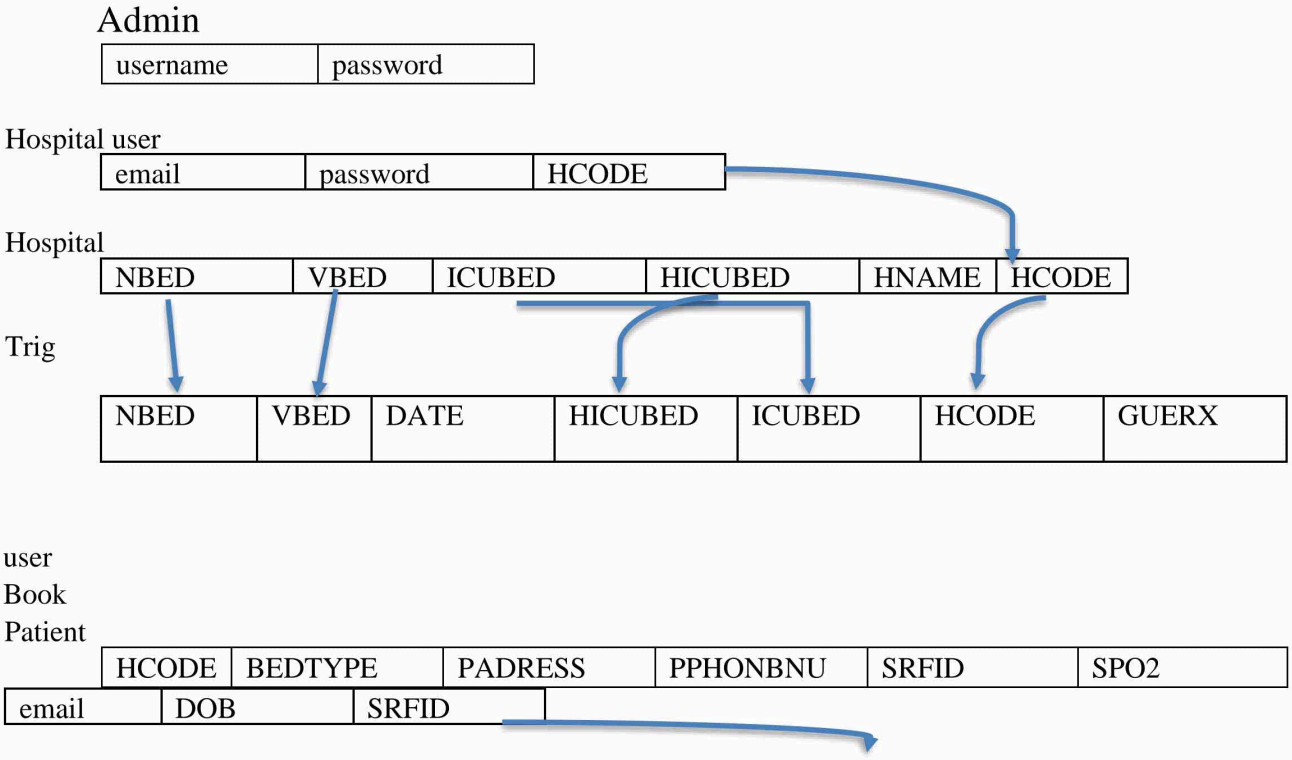


Fig. 2 SCHEMA DIAGRAM

3.3 Tools & Technologies

3.3.1 Python

Python is a high-level , interpreted, general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation.

Python is dynamically-typed and garbage-collected. It supports multiple programming paradigms, including structured (particularly procedural), object-oriented and functional programming. It is often described as a "batteries included" language due to its comprehensive standard library.

3.3.2 MySQL

MySQL is a relational database management system based on the Structured Query Language, which is the popular language for accessing and managing the records in the database. MySQL is open-source and free software under the GNU license. It is supported by **Oracle Company**. MySQL is the most popular Open Source Relational SQL database management system. MySQL is one of the best RDBMS being used for developing web-based software applications.

3.3.3 Visual Code Studio

Visual Studio Code, also commonly referred to as **VS Code**,[9] is a source-code editor made by Microsoft for Windows, Linux and macOS.[10] Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git. Users can change the theme, keyboard shortcuts, preferences, and install extensions that add additional functionality.

3.3.4 Xampp Server

XAMPP helps a local host or server to test its website and clients via computers and laptops before releasing it to the main server. It is a platform that furnishes a suitable environment to test and verify the working of projects based on Apache, Perl, MySQL database, and PHP through the system of the host itself.

3.3.5 Libraries & Modules Used

3.3.5.1 Flask

Flask is a small and lightweight Python web framework that provides useful tools and features that make creating web applications in Python easier. It is based on the Werkzeg Web Server Gateway Interface (WSGI) toolkit and the Jinja2 template engine. It uses the Jinja template engine to dynamically build HTML pages using familiar Python concepts such as variables, loops, lists, and so on.

3.3.5.2 Flask SQLAlchemy

Flask-SQLAlchemy is an extension for Flask that adds support for SQLAlchemy to your application. It aims to simplify using SQLAlchemy with Flask by providing useful defaults and extra helpers that make it easier to accomplish common tasks .SQLAlchemy is the Python SQL toolkit and Object Relational Mapper that gives application developers the full power and flexibility of SQL.

3.3.5.3 Flask Login

Flask-Login provides user session management for Flask. It handles the common tasks of logging in, logging out, and remembering your users' sessions over extended periods of time.

3.3.5.4 Flask Mail

The **Flask-Mail** extension provides a simple interface to set up SMTP with your Flask application and to send messages from your views and scripts.

3.3 IMPLEMENTATION:

An "implementation" of Python should be taken to mean a program or environment which provides support for the execution of programs written in the Python language, as represented by the CPython reference implementation.

There have been and are several distinct software packages providing of what we all recognize as Python, although some of those are more like distributions or variants of some existing implementation than a completely new implementation of the language.

3.3.1.Back End (MySQL) Database:

A Database Management System (DBMS) is computer software designed for the purpose of managing databases, a large set of structured data, and run operations on the data requested by numerous users. Typical examples of DBMSs include Oracle, DB2, Microsoft Access, Microsoft SQL Server, Firebird, PostgreSQL, MySQL, SQLite, FileMaker and Sybase Adaptive Server Enterprise. DBMSs are typically used by Database administrators in the creation of Database systems. Typical examples of DBMS use include accounting, human resources and customer support systems. Originally found only in large companies with the computer hardware needed to support large data sets, DBMSs have more recently emerged as a fairly standard part of any company back office.

A DBMS is a complex set of software programs that controls the organization, storage, management, and retrieval of data in a database.

A DBMS includes:

- A modeling language to define the schema of each database hosted in the DBMS,according to the DBMS data model.
- The dominant model in use today is the ad hoc one embedded in SQL, despite the objections of purists who believe this model is a corruption of the relational model, since it violates several of its fundamental principles for the sake of practicality and performance. Many DBMSs also support the Open Database Connectivity API that supports a standard way for programmers to access the DBMS.

- Data structures (fields, records, files and objects) optimized to deal with very large amounts of data stored on a permanent data storage device (which implies relatively slow access compared to volatile main memory).A database query language and report writer to allow users to interactively interrogate the database, analyze its data and update it according to the users privileges on data.
- Data security prevents unauthorized users from viewing or updating the database. Using passwords, users are allowed access to the entire database or subsets of it called sub schemas. For example, an employee database can contain all the data about an individual employee, but one group of users may be authorized to view only payroll data, while others are allowed access to only work history and student data.
- If the DBMS provides a way to interactively enter and update the database, as well as interrogate it, this capability allows for managing personal databases. However, it may not leave an audit trail of actions or provide the kinds of controls necessary in a multi-user organization. These controls are only available when a set of application programs are customized for each data entry and updating function.
- A transaction mechanism, that ideally would guarantee the ACID properties, in order to ensure data integrity, despite concurrent user accesses (concurrency control), and faults (fault tolerance).
- It also maintains the integrity of the data in the database.
- The DBMS can maintain the integrity of the database by not allowing more than one user to update the same record at the same time. The DBMS can help prevent duplicate records via unique index constraints; for example, no two customers with the same customer numbers (key fields) can be entered into the database. See ACID properties for more information (Redundancy avoidance).

When a DBMS is used, information systems can be changed much more easily as the organization's information requirements change. to the Organizations may use one kind of DBMS for daily transaction processing and then move the detail onto another computer that uses another DBMS better suited for random inquiries and analysis. Overall systems design decisions are performed by data administrators and systems analysts. Detailed database design is performed by database administrators.

SQL:

Structured Query Language (SQL) is the language used to manipulate relational databases.

SQL is tied very closely with the relational model.

In the relational model, data is stored in structures called relations or tables.

SQL statements are issued for the purpose of:

- Data definition: Defining tables and structures in the database (DDL used to create, alter and drop schema objects such as tables and indexes).

4.2 : Stored Procedure

Routine name: proc

Type: procedure

Definition: Select * from register;

4.3: Triggers

It is the special kind of stored procedure that automatically executes when an event occurs in the database.

Triggers used :

1: Trigger name: on insert

Table: register

Time: after

Event: insert

INSERT INTO trig VALUES(null,NEW.rid,'Farmer Inserted',NOW())

2: Trigger name: on delete

Table: register

Time: after

Event: delete

Definition: INSERT INTO trig VALUES(null,OLD.rid,'FARMER DELETED',NOW())

3: Trigger name: on update

Table: register

Time: after

Event: update

Definition: INSERT INTO trig VALUES(null,NEW.rid,'FARMER UPDATED',NOW())

USER INTERFACE

4.1 SCREEN SHOTS

LOGIN PAGE:

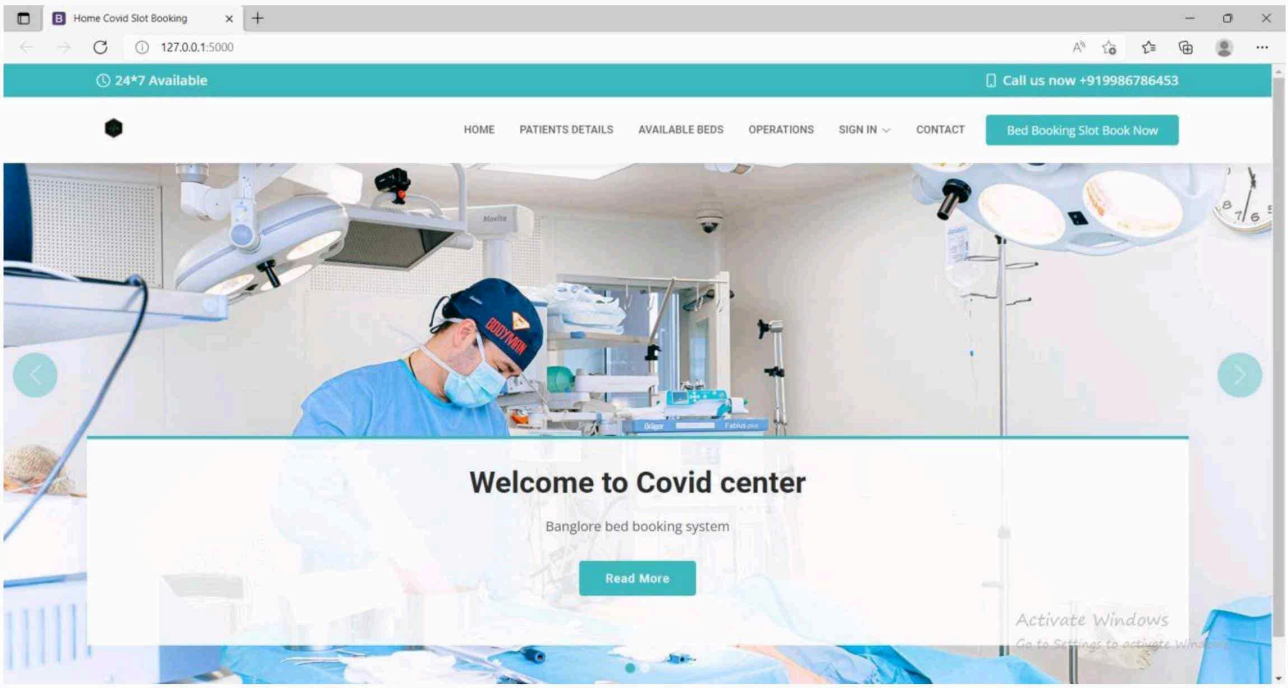


Fig. 3 Login Page

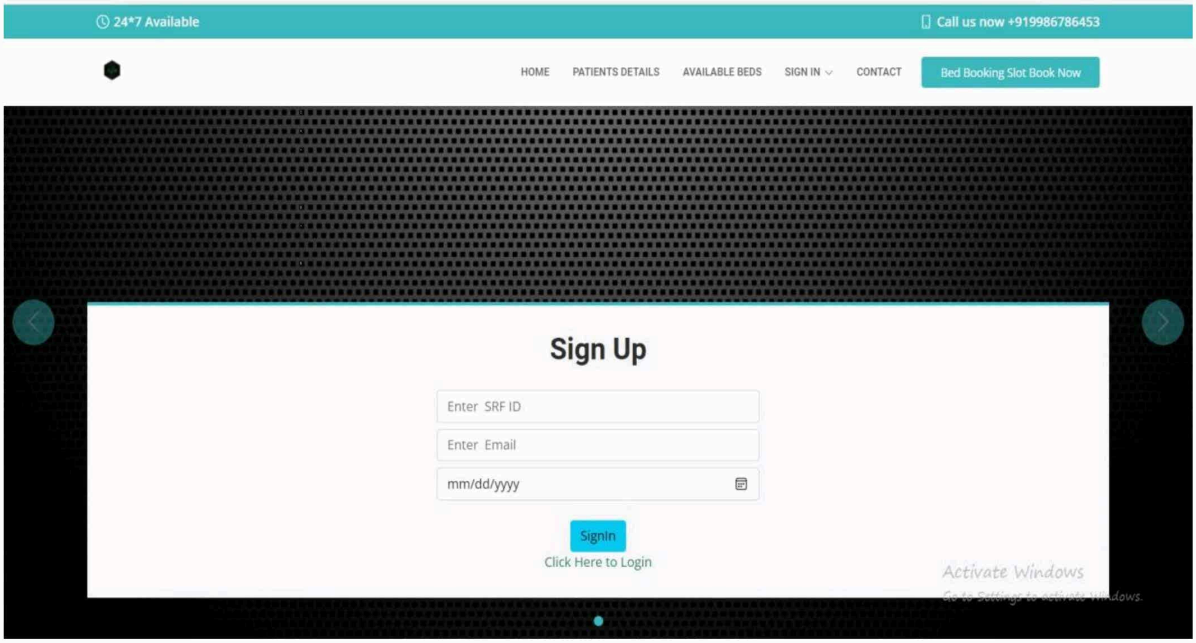
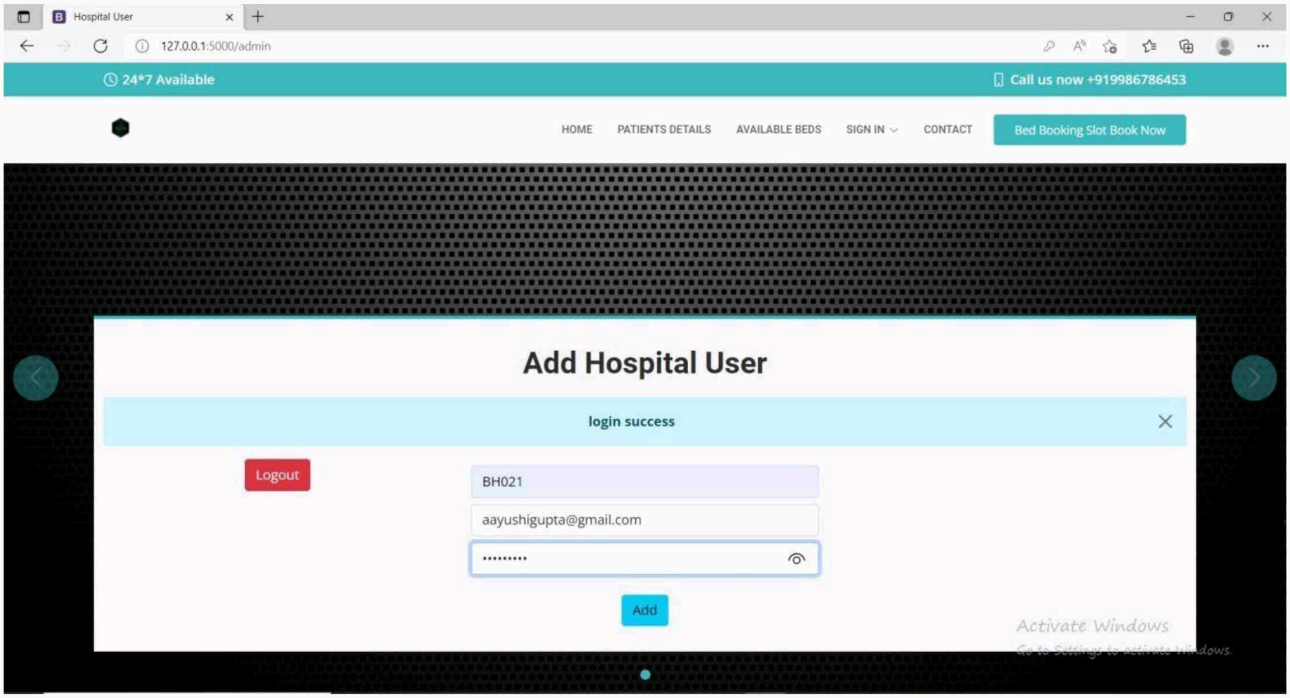
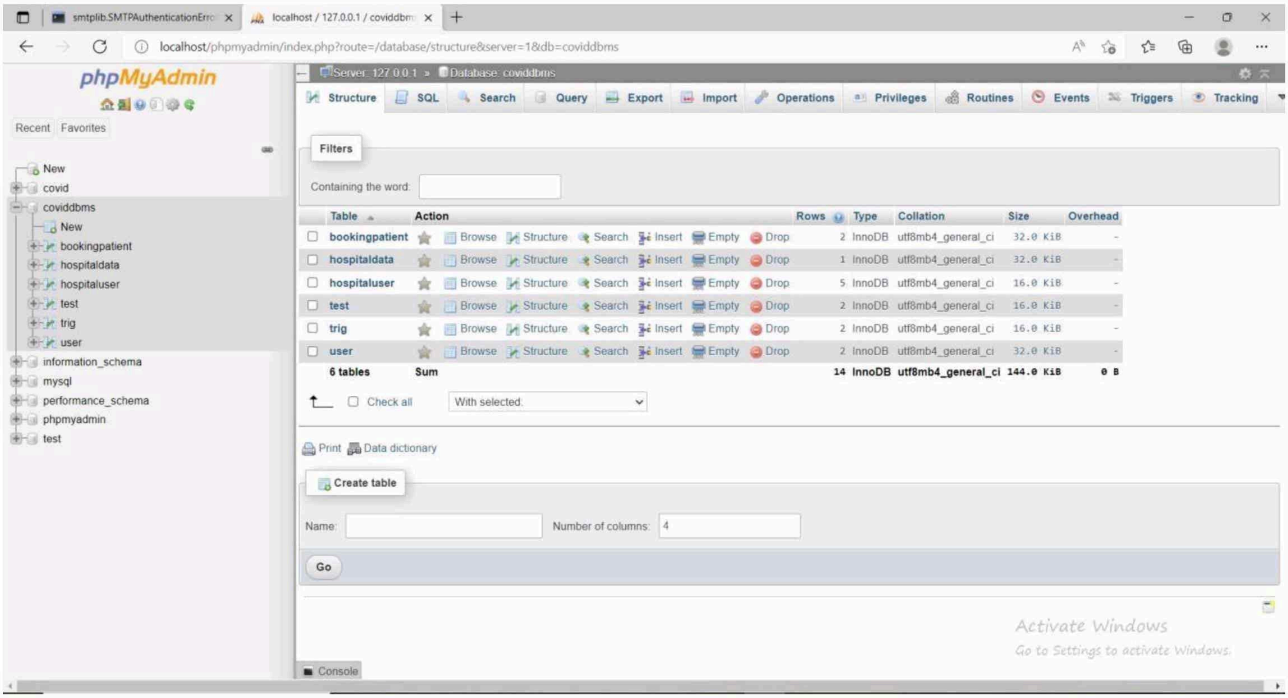


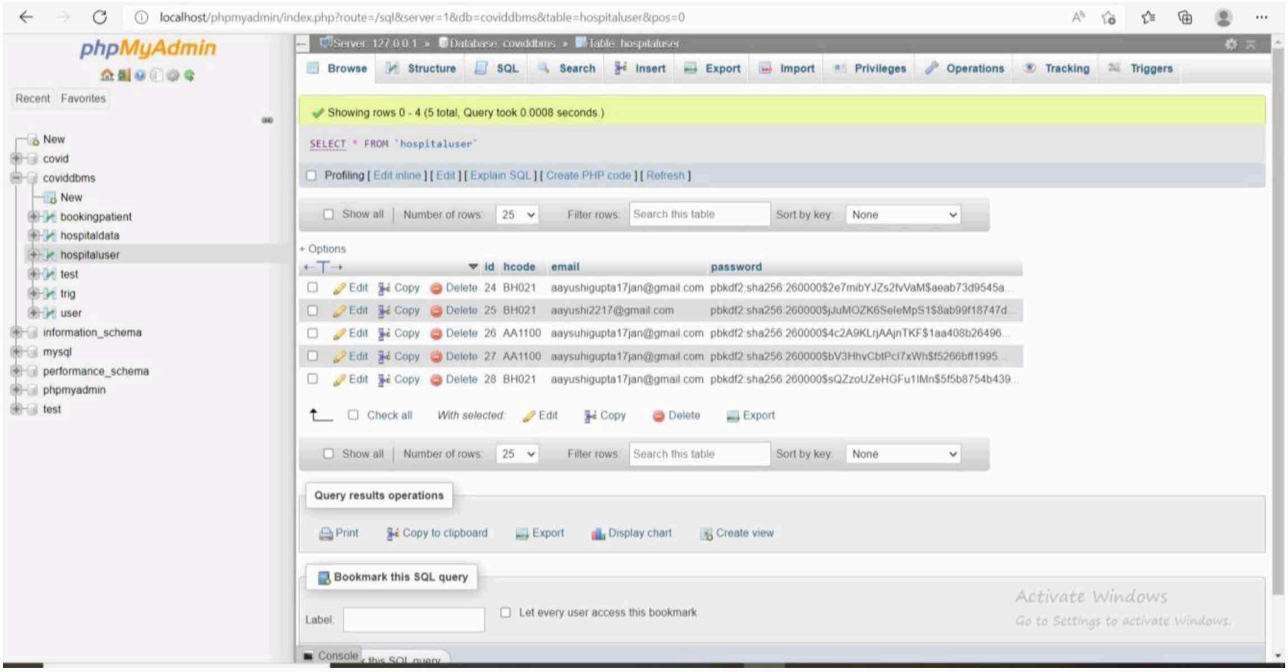
Fig 4. Sign Up

ADD HOSPITAL USER



DATABASE LOCALHOST




localhost/phpmyadmin/index.php?route=/sql&server=1&db=coviddbms&table=hospitaluser&pos=0
phpMyAdmin
Recent Favorites
New
covid
coviddbms
New
bookingpatient
hospitaldata
hospitaluser
test
trig
user
information_schema
mysql
performance_schema
phpmyadmin
test
Server: 127.0.0.1 » Database: coviddbms » Table: hospitaluser
Browse Structure SQL Search Insert Export Import Privileges Operations Tracking Triggers
Showing rows 0 - 4 (5 total, Query took 0.0008 seconds.)
SELECT * FROM `hospitaluser`
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None
+ Options
id hcode email password
Edit Copy Delete 24 BH021 aayushigupta17jan@gmail.com pbkdf2:sha256:260000$2e7mibYJZs2fvVaM$aeab73d9545a...
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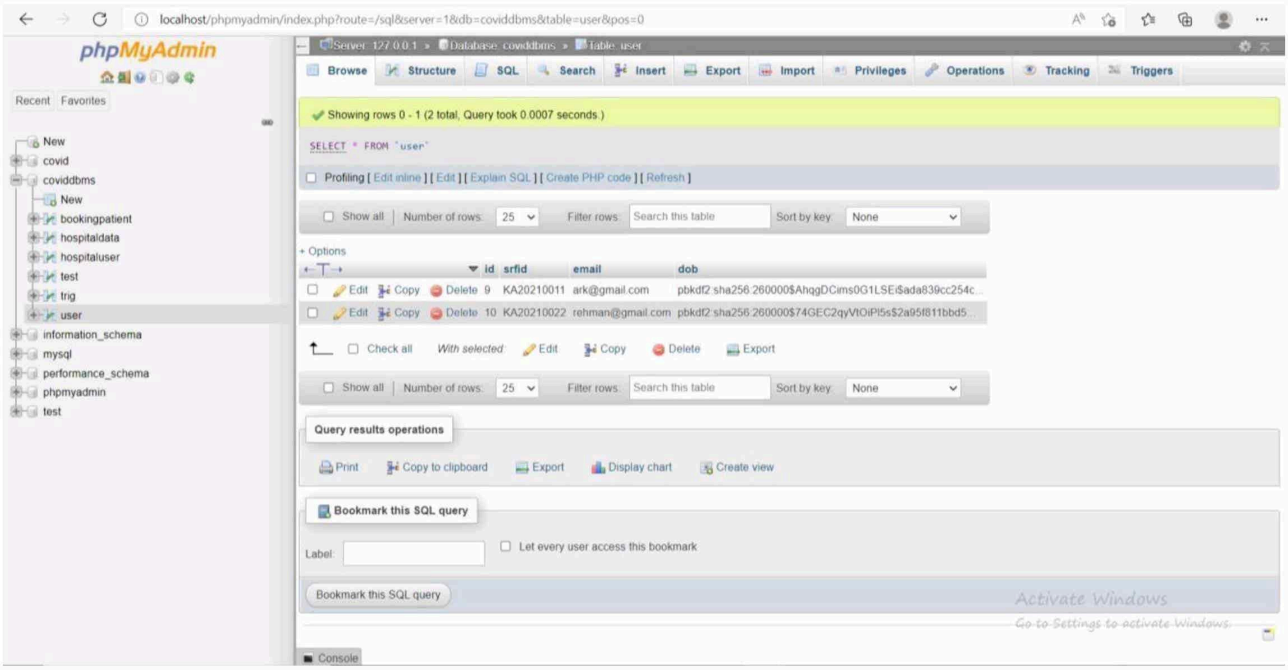
Check all With selected: Edit Copy Delete Export
Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None
Query results operations
Print Copy to clipboard Export Display chart Create view
Bookmark this SQL query
Label: Let every user access this bookmark
Activate Windows
Go to Settings to activate Windows.
Console


localhost/phpmyadmin/index.php?route=/sql&server=1&db=coviddbms&table=user&pos=0
phpMyAdmin
Recent Favorites
New
covid
coviddbms
New
bookingpatient
hospitaldata
hospitaluser
test
trig
user
information_schema
mysql
performance_schema
phpmyadmin
test
Server: 127.0.0.1 » Database: coviddbms » Table: user
Browse Structure SQL Search Insert Export Import Privileges Operations Tracking Triggers
Showing rows 0 - 1 (2 total, Query took 0.0007 seconds.)
SELECT * FROM `user`
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None
+ Options
id srfid email dob
Edit Copy Delete 9 KA20210011 ark@gmail.com pbkdf2:sha256:260000$AhqgDCims0G1LSEi$ada839cc254c...
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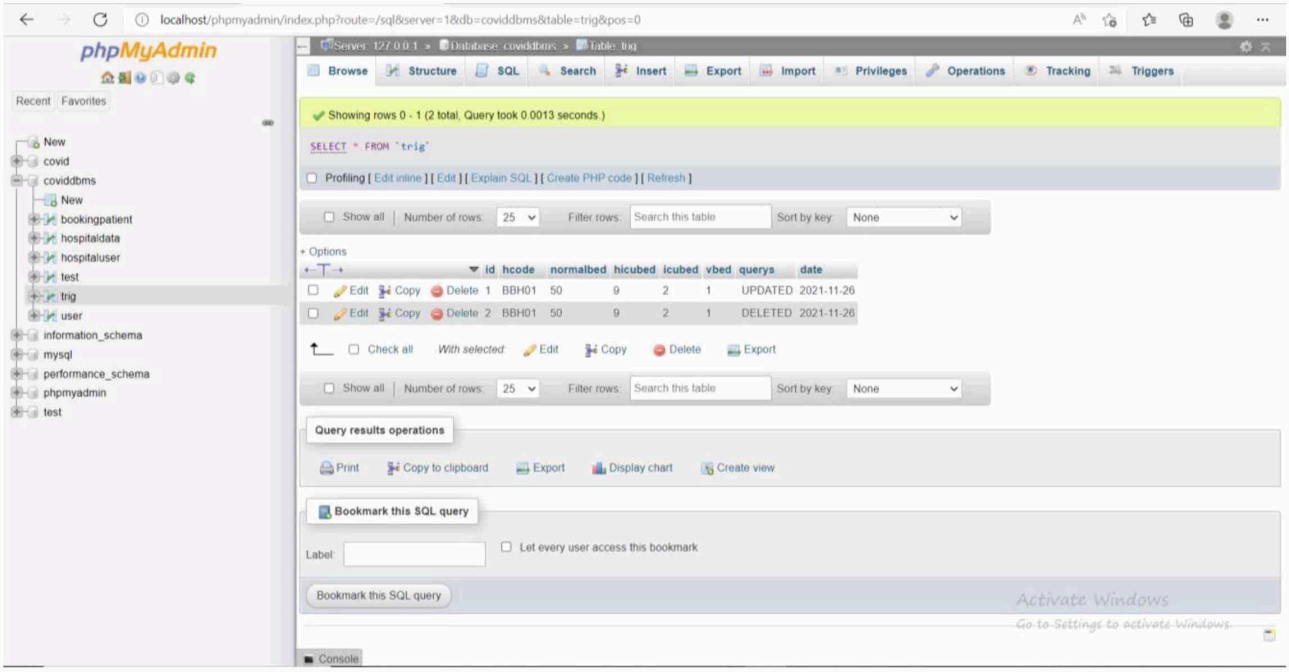
Check all With selected: Edit Copy Delete Export
Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None
Query results operations
Print Copy to clipboard Export Display chart Create view
Bookmark this SQL query
Label: Let every user access this bookmark
Bookmark this SQL query
Activate Windows
Go to Settings to activate Windows.
Console


localhost/phpmyadmin/index.php?route=/sql&server=1&db=coviddbms&table=trig&pos=0
phpMyAdmin
Recent
Favorites
New
covid
coviddbms
New
bookingpatient
hospitaldata
hospitaluser
test
trig
user
information_schema
mysql
performance_schema
phpmyadmin
test
Server: 127.0.0.1 » Database: coviddbms » Table: trig
Browse
Structure
SQL
Search
Insert
Export
Import
Privileges
Operations
Tracking
Triggers
Showing rows 0 - 1 (2 total, Query took 0.0013 seconds.)
SELECT * FROM `trig`
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
Show all
Number of rows:
25
Filter rows:
Search this table
Sort by key:
None
+ Options
id hcode normalbed hicubed icubed vbed querys date
Edit Copy Delete 1 BBH01 50 9 2 1 UPDATED 2021-11-26
Edit Copy Delete 2 BBH01 50 9 2 1 DELETED 2021-11-26
Check all
With selected:
Edit
Copy
Delete
Export
Query results operations
Print
Copy to clipboard
Export
Display chart
Create view
Bookmark this SQL query
Label:
Let every user access this bookmark
Bookmark this SQL query
Activate Windows
Go to Settings to activate Windows.
Console

CONCLUSION

COVID BED SLOT BOOKING SYSTEM successfully implemented based on online data filling which helps us in administrating the data user for managing the availability of beds in pandemic.The project successfully used various functionalities of Xampp and python flask and also create the fully functional database management system for online portals. Using MySQL as the database is highly beneficial as it is free to download, popular and can be easily customized. The data stored in the MySQL database can easily be retrieved and manipulated according to the requirements with basic knowledge of SQL.With the theoretical inclination of our syllabus it becomes very essential to take the atmost advantage of any opportunity of gaining practical experience that comes along. The building blocks of this Minor Project "Covid Bed Slot Booking System" was one of these opportunities. It gave us the requisite practical knowledge to supplement the already taught theoretical concepts thus making us more competent as a computer engineer. The project from a personal point of view also helped us in understanding the following aspects of project development:

- The planning that goes into implementing a project.
- The importance of proper planning and an organized methodology.
- The key element of team spirit and co-ordination in a successful project.

FUTURE ENHANCEMENT

- Enhanced database storage facility
- Enhanced user friendly GUI
- more advanced results systems
- online feedbacks forms

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