CLINIC MANAGEMENT SYSTEM

Submitted in partial fulfillment of the requirements

of the degree

BACHELOR OF ENGINEERING

IN INFORMATION TECHNOLOGY

By

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(AY 2022-23)

CERTIFICATE

This is to certify that the Mini Project entitled **"CLINIC MANAGEMENT SYSTEM "** is a bonafide work of **Aryan Agrawal (21101B0029) , Varun Dixit (21101B0035) , Abhinav Gawade(21101B0040) , Aakash Ranade (21101B0050)** submitted to the University of Mumbai in partial fulfillment of the requirement for the award of the degree of **"Bachelor of Engineering"** in **"Information Technology" .**

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Mini Project Approval

This Mini Project entitled **"Clinic Management System"** by **Aryan Agrawal(21101B0029) , Varun Dixit(21101B0035) , Abhinav Gawade (21101B0040) , Aakash Ranade(21101B0050)** is approved for the degree of **Bachelor of Engineering** in **Information Technology.**

Examiners

1.....
(Internal Examiner Name & Sign)

2.....
(External Examiner name & Sign)

Date:

Place:

Contents

ABSTRACT

The Clinic Management System is a software application designed to support the daily operations of a clinic. This system aims to streamline all aspects of clinic management, starting from patient registration, scheduling, and medical records management, through prescriptions and appointment management. The system provides a comprehensive approach to managing clinic operations, making it easier to store, retrieve, and manage patient data.

The main objective of the Clinic Management System is to automate manual processes and improve the overall efficiency of clinic operations. This is achieved by integrating all aspects of clinic management into a single platform, allowing staff to easily access patient records and appointment schedules. By doing so, the system helps to reduce errors and ensure the accuracy of patient records.

The Clinic Management System is designed to be user-friendly, with a simple and intuitive interface that can be easily understood by doctors, and patients. The system is designed to accommodate different users' needs and roles, allowing them to perform their respective tasks with ease.

The Clinic Management System also provides a high level of security for patient data, ensuring that sensitive information is protected from unauthorized access. This ensures that patient data is handled in a secure and responsible manner.

The system's design is based on an entity relationship diagram (ERD), which provides a logical flow for the system's data. The ERD helps to ensure that the system is well-structured and that data can be easily accessed and manipulated as needed.

In summary, the Clinic Management System is an essential tool for clinics that are looking to improve their operations, reduce errors, and enhance the overall patient experience. By automating manual processes, providing a comprehensive approach to managing clinic operations, and generating reports on clinic performance, the system can help clinics become more efficient and effective in delivering healthcare services.

ACKNOWLEDGEMENT

We would like to take this opportunity to express our heartfelt gratitude to our esteemed professors, Prof. Santosh Tamboli and Prof. Rasika Ransing, for their invaluable guidance, unwavering support, and constant encouragement throughout the development of our Clinic Management System project. Their expertise and insights have been instrumental in shaping our ideas and refining our approach towards creating a successful project.

Furthermore, we would like to extend our sincere thanks to our Head of Department (H.O.D) for giving us the opportunity to undertake this project on the topic of Clinic Management System. This project has been a wonderful learning experience, and we are grateful for the knowledge and research skills that we have gained during its development.

Once again, we express our sincere appreciation to our professors and H.O.D for their guidance, support, and encouragement throughout the project. Their contributions have been vital to the successful completion of this project.

LIST OF TABLES

1. patient_records:

```
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| full_name     | varchar(50) | YES  |     | NULL    |       |
| mobile_number | varchar(10) | NO   | PRI | NULL    |       |
| email         | varchar(50) | YES  |     | NULL    |       |
| city          | varchar(20) | YES  |     | NULL    |       |
| password      | varchar(50) | YES  |     | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
5 rows in set (0.01 sec)
```

2. appointments:

```
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| mobile_number | varchar(10) | YES  |     | NULL    |       |
| patient_name  | varchar(30) | YES  |     | NULL    |       |
| date          | varchar(20) | YES  |     | NULL    |       |
| slot          | varchar(30) | YES  |     | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
4 rows in set (0.01 sec)
```

3. prescriptions:

```
+---------------+--------------+------+-----+---------+-------+
| Field         | Type         | Null | Key | Default | Extra |
+---------------+--------------+------+-----+---------+-------+
| mobile_number | varchar(10)  | YES  |     | NULL    |       |
| prescription  | varchar(100) | YES  |     | NULL    |       |
+---------------+--------------+------+-----+---------+-------+
2 rows in set (0.01 sec)
```

1.INTRODUCTION

1.1 INTRODUCTION:

In the current age of technological advancements, many systems have been developed to simplify our lives. Among these, digital systems that record patient information and other details related to healthcare facilities are becoming increasingly popular. However, many existing clinic management systems do not meet the local user requirements, particularly in regions where electronic systems are still relatively new.

To address this gap, the Clinic Registration System has been developed to automate the workflow and improve the overall management of clinics. This system considers all the activities that occur within a clinic and aims to streamline the entire process. The system begins with patient registration, where all patient information is collected and stored in a database.

The Clinic Management System offers numerous benefits to clinics and doctors. One of the key advantages is that it stores complete patient records, including appointments. This makes it easier to retrieve patient information when required and helps doctors to provide more effective treatment.

1.2 MOTIVATION:

Managing a clinic inventory involves dealing with a wide range of fields, sections, and modules, which can be overwhelming and time-consuming for users. In order to simplify the process and enhance the user experience, it is important to have a well-designed system that allows users to manage all aspects of the clinic without the need to navigate between multiple screens.

The Clinical Patient Management System is an advanced system that has been developed to replace the traditional paper-based management system used in clinics. The previous system relied on assistants writing down patient information on paper forms, which were then used to track patient treatment and other important details. While this system was functional, it often caused problems for users, particularly as patient information was scattered across multiple files.

The Clinical Patient Management System solves these problems by providing a centralized database that stores all patient information, including personal details and prescription information. With this system, patients can be registered electronically, and their treatment can be tracked and managed through a single system.

1.3 PROBLEM STATEMENT & OBJECTIVES :

The clinic management system is currently being done manually, which is causing problems in terms of data retrieval and loss of patient data. There is redundant patient data, and the inventory for the medicine is done manually, causing a lot of time wastage. The management of the clinic also has to take time to check for the medicine inventory. Thus, there is a need for an automated system that can keep track of patient records and inventory management.

Objectives:

The main objectives of the Clinic Management System are:

- To investigate the system/user request and define new requirements for the system
- To make it easier for the user to maintain the record and retrieve data.
- To determine what records are required in the system and ensure that all the records are kept in the database.
- To ensure that the system is useful to users in their daily activities at the clinic.
- To determine how the system will operate and understand the daily activities in the clinic. Overall, the Clinic Management System aims to provide an efficient, reliable and automated system to keep track of patient records, appointments, and prescription records a more streamlined and effective clinic operation.

1.4 ORGANIZATION OF REPORT:

The report is organized as follows. The first section provides an introduction to the clinic management system and its importance in modern healthcare facilities. The motivation behind developing the system is also discussed, highlighting the problems faced by the manual management system. The problem statement and objectives of the system are presented in the next section, along with the scope of the project.

The methodology used for the development of the clinic management system is discussed in the subsequent section. This includes the software and tools used for the development, and the design approach taken to ensure a user-friendly interface. The entity relationship diagram (ERD) is presented, which describes the relationships between various entities in the system.

The system requirements and specifications are discussed in detail, followed by the implementation details. The features of the system, such as patient registration, appointment booking are described in detail. The system architecture and flow are also presented.

The evaluation of the system is carried out in the subsequent section, where the system's performance and user-friendliness are tested. The results of the evaluation are presented, and improvements to the system are discussed.

Finally, the report concludes with a summary of the project's achievements and the benefits of the clinic management system. Further recommendations for the future development of the system are also provided.

2.LITERATURE SURVEY

2.1 SURVEY OF EXISTING /SIMILAR SYSTEM:

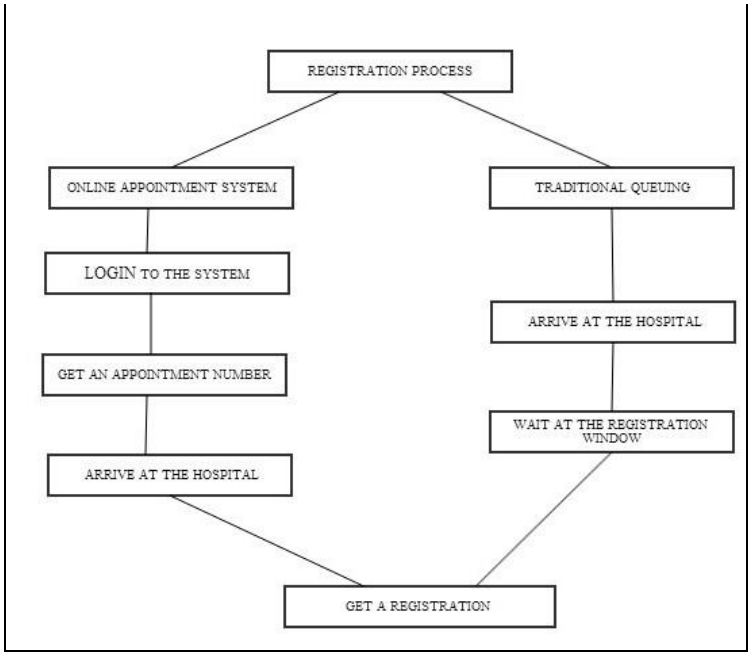
In recent years, there has been an increase in the development of computerized systems for medical services. The use of such systems is becoming increasingly important in providing efficient and effective healthcare services. In this chapter, we will review some of the existing systems related to clinic management.

One such system is the web-based medical information system. This system provides users with access to medical information and allows them to search for the information they need. It also offers features such as online appointment scheduling, which allows patients to schedule appointments with doctors via the internet. Additionally, doctors can use the system to manage their daily work.

Another system is the Clinic Management System. This system is designed to support clinic operations from patient registration to billing. It provides features such as patient record management, diagnosis and treatment management, and daily report generation. The system also supports communication between staff members through the clinic's local network.

The scope of this project is to develop a clinic management system that will be used by the staff, doctors, and management of the clinic. The system will automate the workflow and make it easier for staff to manage patient records and schedule appointments. The system will be user-friendly and accessible through different devices, such as computers and mobile phones.

TRADITIONAL APPOINTMENT V/S ONLINE APPOINTMENT:



2.2 LIMITATION EXISTING /SIMILAR SYSTEM OR RESEARCH GAP:

- User need to remember respective credentials details.
- No Reset Password function available.
- Billing of treatment is not provided online.

2.3 MINI PROJECT CONTRIBUTION:

Clinic Management Software is a comprehensive solution that provides numerous services with advanced and extensive features. This intelligent software can store complete patient records, including personal details like address, gender, age, drug sensitivity, and other records such as lungs chart, heart charts, weight, and height charts, and much more. It is capable of printing out prescriptions, patient records, billings, diagnostic reports, and other certificates. It also manages the accounting systems, appointment schedules, and medicine stock.

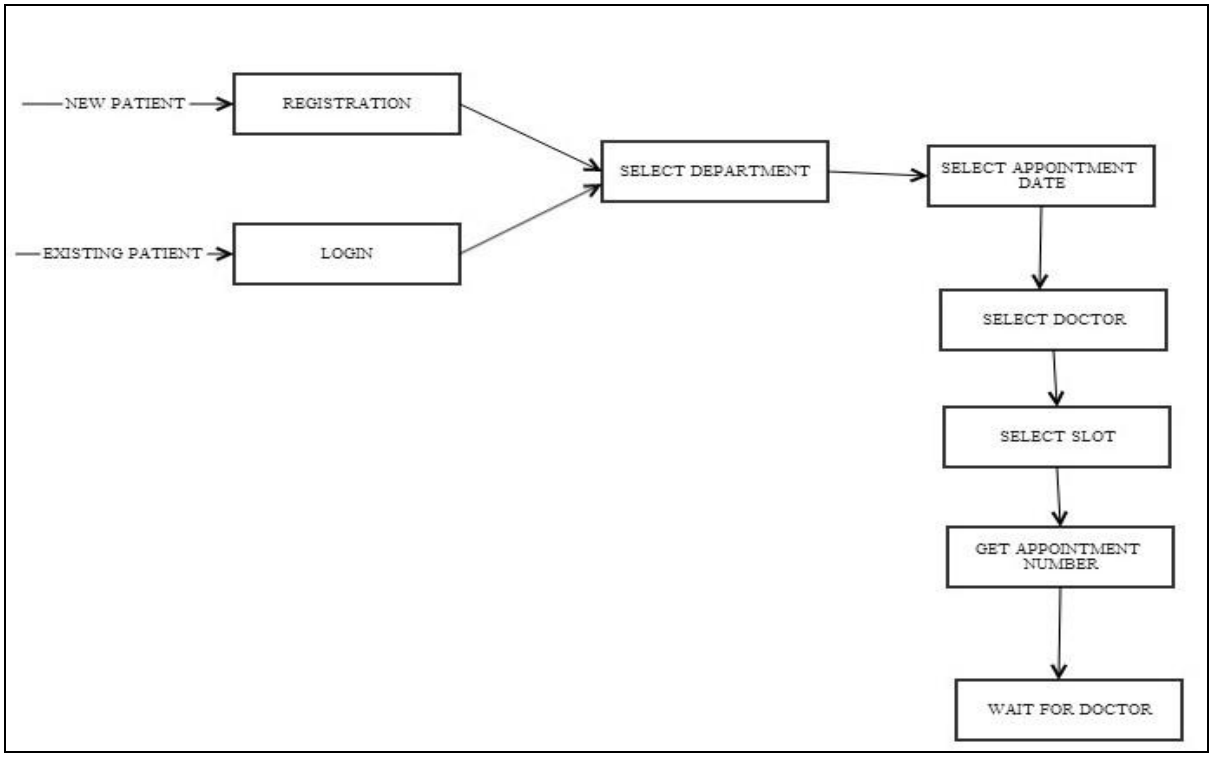
3.PROPOSED SYSTEM

3.1 INTRODUCTION:

Currently, most of the clinic management systems available in the market are developed by overseas companies. However, the features and functions provided by these systems are often too advanced for local users in India who are still using manual systems. Moreover, the cost of these systems is very high. Therefore, there is a need for a cost-effective and user-friendly system that can meet the specific requirements of clinics in India. The existing system used by clinics in India is manual, which can be time-consuming and prone to errors. In this chapter, we will discuss in detail the existing manual system, as well as the tools and terminologies that are used in the clinic management service.

3.2 ARCHITECTURE /FRAMEWORK:

Basically our application for Booking an Appointment for a patient is described by the following flow chart given below:



3.3 ALGORITHM & PROCESS DESIGN:

Algorithm and process design for the entire application:

1. Import necessary modules like tkinter, mySQL, datetime,smtplin,etc.
2. Connect to the database.
3. Create a table in the database for storing patient information.
4. Create a table in the database for storing appointments.
5. Create a GUI interface using tkinter that allows users to login or register as a patient or an admin.
6. If a user is registering, validate the inputs and add their information to the database. Send a mail on successful sign up.
7. If a user is logging in, validate the inputs and check if they are a patient or an admin.
8. If the user is a patient, show a new window with options to book an appointment or view their prescriptions.
9. If the user is an admin, show a new window with options to view all appointments or add a prescription.
10. When booking an appointment, validate the inputs and add the appointment information to the database. Send a confirmation mail upon successful booking of appointment.
11. When viewing appointments, query the database for all appointments associated with the current patient or all appointments for the admin.
12. When logging out, destroy the current window and show the login page again.

Here is the process design for the application:

1. Start the application by running the Python script.
2. The user is presented with a login page that allows them to enter their credentials or register as a new user.
3. If the user chooses to register, they are taken to a new page where they can enter their personal information.
4. If the user chooses to login, the application checks if the user is a patient or an admin.
5. If the user is a patient, they are taken to a new page with options to book an appointment or view their prescriptions.
6. If the user is an admin, they are taken to a new page with options to view all appointments or add a new prescription.
7. When booking an appointment, the user enters the necessary information, and the application adds it to the database.
8. When viewing appointments, the application queries the database and displays the appointments in a table format.
9. When the user logs out, the current window is destroyed, and the user is taken back to the login page.

3.4 DETAILS OF HARDWARE & SOFTWARE:

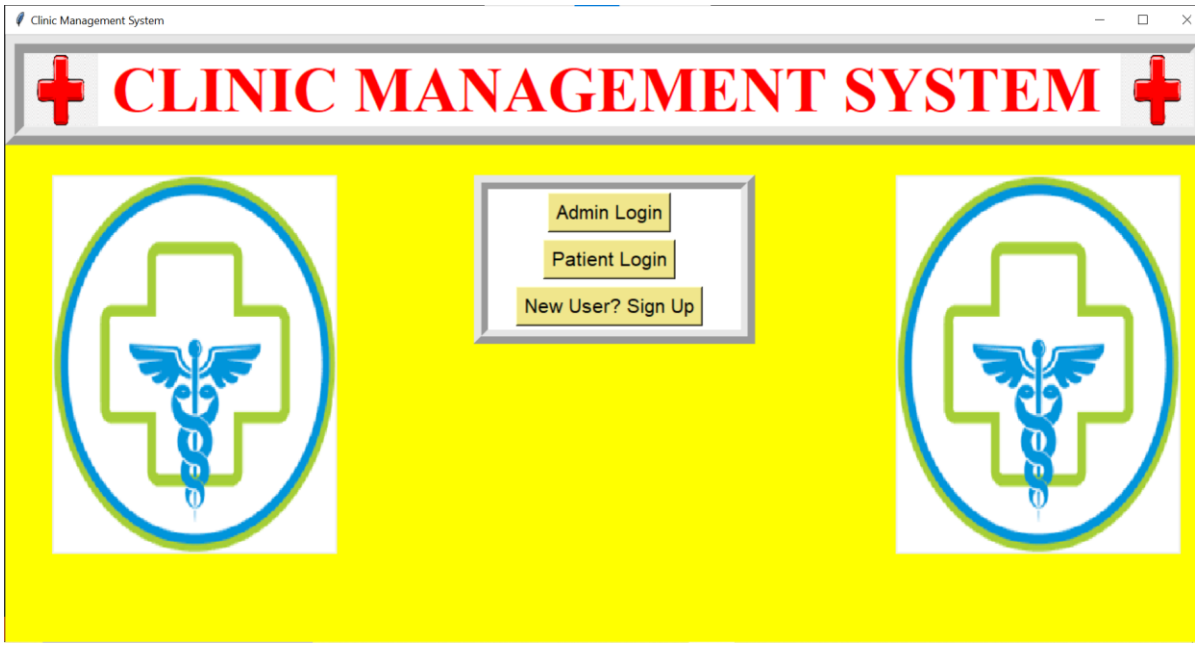
Hardware Requirements:

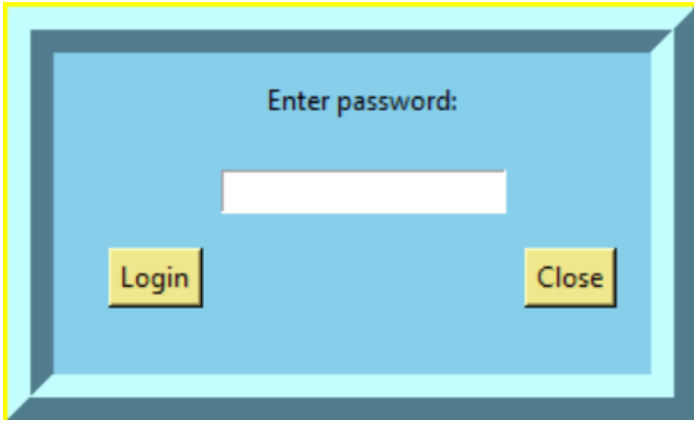
- Computer or laptop with a processor speed of at least 1 GHz or higher
- Minimum of 1 GB RAM (Recommended 2 GB or more)
- Hard disk space of at least 100 MB

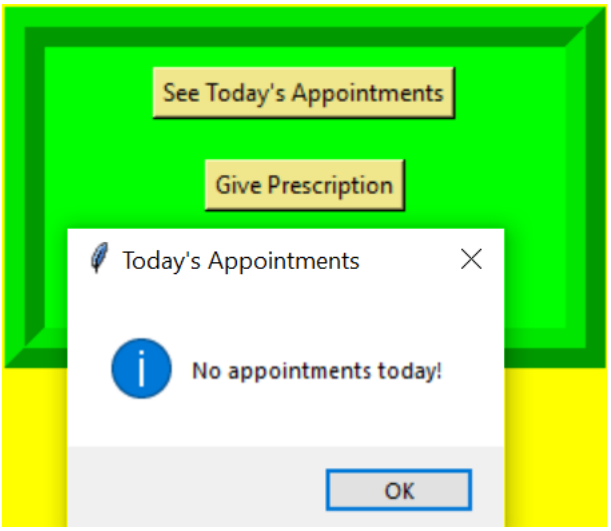
Software Requirements:

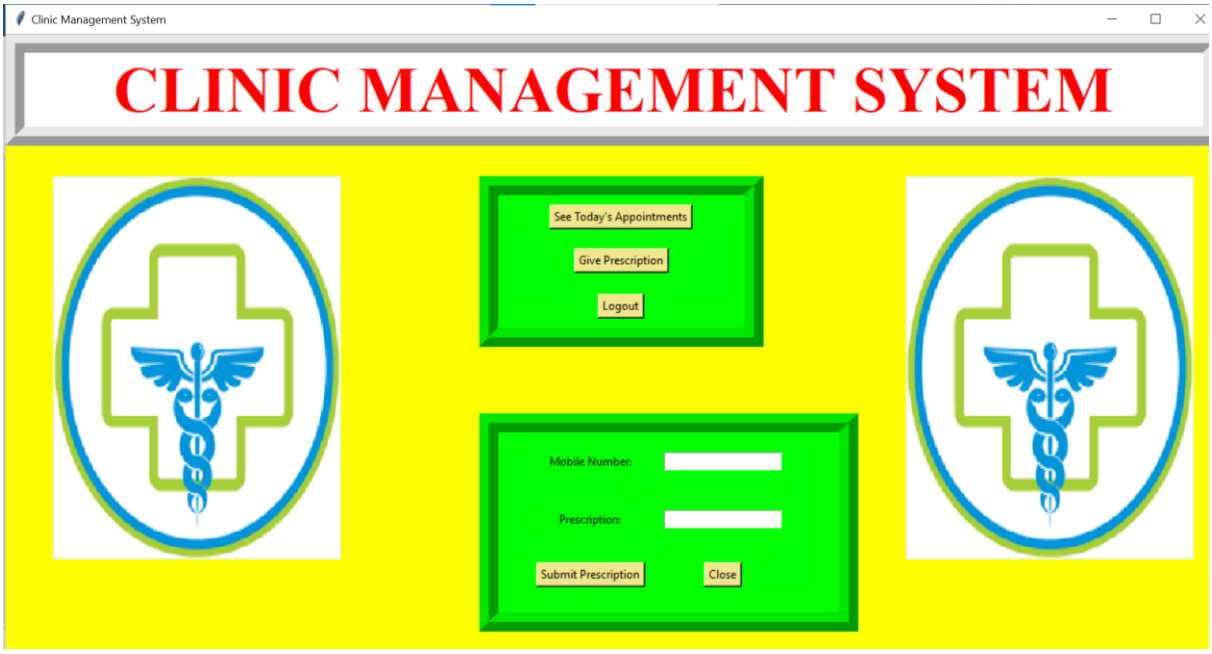
- Operating System: Windows, Linux or MacOS
- Python 3.x installed on the system
- mySQL databases with required connector
- Python libraries: tkinter, smtplib, datetime, etc.

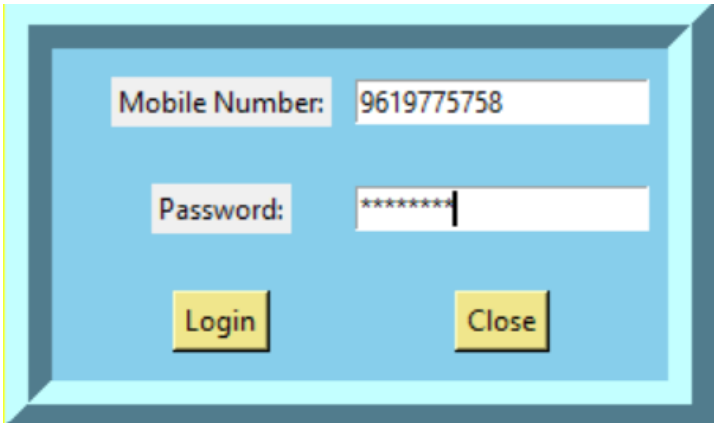
3.5 EXPERIMENT & RESULTS:

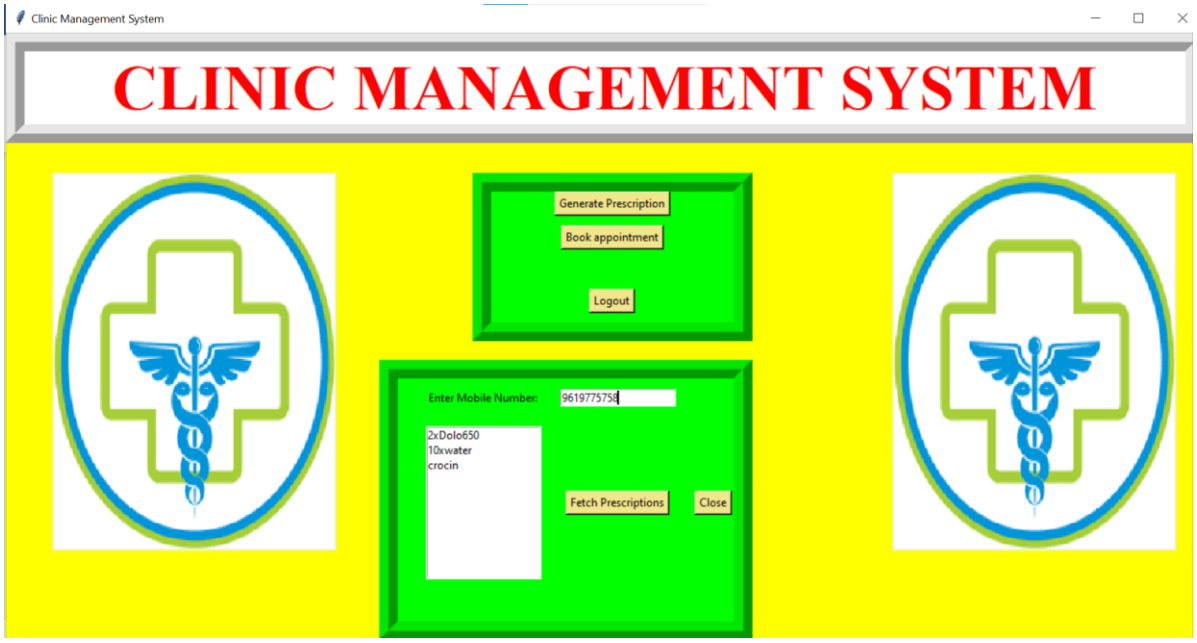


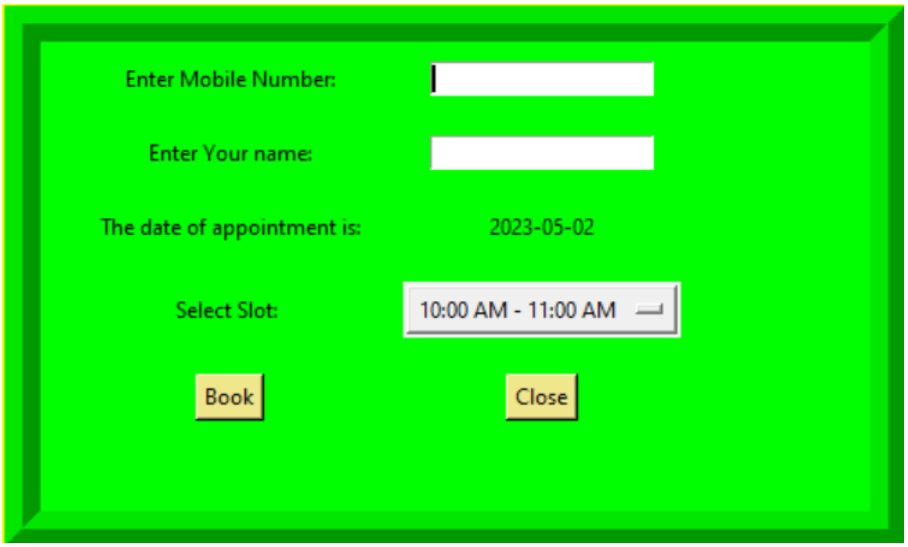


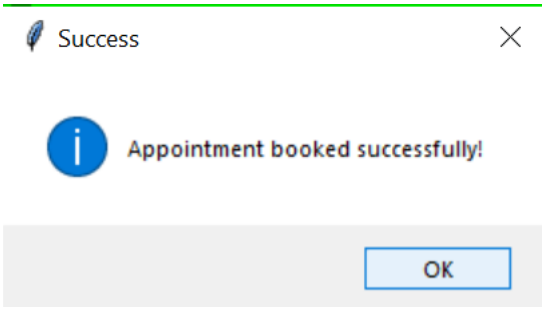

See Today's Appointments
Give Prescription
Today's Appointments
No appointments today!
OK


Clinic Management System
CLINIC MANAGEMENT SYSTEM
See Today's Appointments
Give Prescription
Logout
Mobile Number:
Prescription:
Submit Prescription
Close


Mobile Number:
9619775758
Password:
Login
Close







clinicmanagementvit@gmail.com 20:08 (0 minutes ago)

to me

Your appointment has been successfully booked for 2023-05-02 at 2:00 PM - 3:00 PM.

Reply Forward

3.6 CONCLUSION & FUTURE WORK:

For this project, we have introduced the concept of developing a clinic management system to replace the current manual system. The system will be developed using Python programming and will have features such as patient registration, appointment booking and prescription generation. The system will be designed to be user-friendly and efficient for doctors and patients.In conclusion, the clinic management system is essential to streamline the daily operations of the clinic and to ensure the safety of patient records.

The future work for this project involves fine-tuning to ensure that it meets the project scope and objectives. The system can also be further enhanced by incorporating features such as online payment for appointments and printing of allotted prescriptions. A few features that we intend to work on in the near future is email validation for new user's sign-up and generating bills for appointment

Our ideas for future work on this project include:
1. Adding more features: The current version of the project has a basic set of features for managing patient and doctor data. More features could be added to make it a more comprehensive clinic management system, such as appointment scheduling, billing and payment management, and inventory management.
2. Improving the user interface: The user interface could be made more intuitive and user-friendly by incorporating more modern design elements and improving the layout and organization of information.
3. Integrating with other systems: The project could be integrated with other healthcare systems, such as electronic health record systems, to make it more useful for healthcare providers.
4. Enhancing security: The project could be made more secure by implementing more robust authentication and authorization mechanisms, as well as encrypting sensitive data.
5. Implementing machine learning: Machine learning could be used to analyze patient data and identify trends or patterns that could help with diagnosis or treatment planning.

3.7 REFERENCES:

- For GUI: https://youtu.be/HrWJzzfU9Z0 , https://youtu.be/0kGdNCzPHWE
- For emails: https://www.geeksforgeeks.org/send-mail-gmail-account-using-python/
- For error solving and general help: https://openai.com/blog/chatgpt