PROJECT REPORT

Hospital Administration System (Console Version)

---

1. Introduction

The **Hospital Administration System** is a Python-based console application designed to simplify hospital record management.

It maintains information about patients, doctors, appointments, and billing using **SQLite**, a lightweight built-in database.

This project is suitable for academic submissions and small-scale hospital use.

---

2. Objectives

The main objectives of the system are:

- To digitally store patient and doctor records

- To schedule and manage appointments

- To create and manage billing records

- To generate revenue reports

- To reduce manual workload and errors

---

3. Technologies Used

- **Python** – Core programming language

- **SQLite3** – Database for storing data

- **ReportLab** – PDF generation

- **VS Code** – IDE for development

---

4. System Architecture

4.1 Modules Included

1. **Patient Management**

- Add patient

- List patients

- Search patient

2. **Doctor Management**

- Add doctor

- List doctors

3. **Appointment Management**

- Schedule appointment

- List appointments

4. **Billing & Payment System**

- Create bill

- Add bill items

- View bill details

- Mark bills as PAID

- Generate revenue reports

---

5. Database Schema

The project uses five tables:

1. patients

- id

- name

- age

- gender

- phone

2. doctors

- id

- name

- specialization

- phone

3. appointments

- id

- patient_id

- doctor_id

- date

- time

- notes

4. bills

- id

- patient_id

- appointment_id

- total_amount

- status

- created_at

5. bill_items

- id

- bill_id

- description

- amount

---

6. Working Process

6.1 Adding a Patient

User enters basic details which are stored in the database.

6.2 Adding a Doctor

User enters doctor name, specialization, and phone number.

6.3 Scheduling an Appointment

The system checks patient ID and doctor ID, then stores the appointment date and time.

6.4 Billing

The system:

- Creates a bill

- Adds one or more items

- Calculates the total

- Stores bill details

6.5 Revenue Report

Shows total **PAID** and **UNPAID** revenue.

---

7. Advantages of the System

- Easy to operate

- Fast search and record management

- Reduces human error

- Accurate billing

- Simple database structure

- Can be extended to GUI or web application

---

8. Future Enhancements

- Add a web-based interface

- Add user login and authentication

- Add medicine inventory

- Generate appointment reminders

- Add analytics dashboard

---

9. Conclusion

The **Hospital Administration System** is a complete backend project that demonstrates database handling, data processing, and console-based user interaction.

It is efficient, easy to use, and expandable for future development.

---

10. Author

Mayank