**Small Clinic Management System**

## ****1. Project Overview****

The **Small Clinic Management System** is a command-line interface (CLI)-based application designed to manage patient appointments, medical records, and billing efficiently. The system ensures streamlined operations and better patient care by maintaining accurate records of patient visits and financial transactions.

## ****2. Database Structure****

The system consists of five main tables:

### ****Patients Table****

| Column Name | Data Type | Description |
| --- | --- | --- |
| patient\_id | INT (PK) | Unique ID for each patient |
| first\_name | VARCHAR | Patient's first name |
| last\_name | VARCHAR | Patient's last name |
| dob | DATE | Date of birth |
| gender | VARCHAR | Gender (Male/Female) |
| phone | VARCHAR | Contact number |
| email | VARCHAR | Email address |
| address | TEXT | Patient's address |

### ****Doctors Table****

| Column Name | Data Type | Description |
| --- | --- | --- |
| doctor\_id | INT (PK) | Unique ID for each doctor |
| first\_name | VARCHAR | Doctor's first name |
| last\_name | VARCHAR | Doctor's last name |
| specialization | VARCHAR | Medical specialty |
| phone | VARCHAR | Contact number |
| email | VARCHAR | Email address |

### ****Appointments Table****

| Column Name | Data Type | Description |
| --- | --- | --- |
| appointment\_id | INT (PK) | Unique ID for each appointment |
| patient\_id | INT (FK) | References Patients table |
| doctor\_id | INT (FK) | References Doctors table |
| appointment\_date | DATE | Date of appointment |
| appointment\_time | TIME | Time of appointment |
| status | VARCHAR | Status (Pending, Completed, Canceled) |

### ****Medical Records Table****

| Column Name | Data Type | Description |
| --- | --- | --- |
| record\_id | INT (PK) | Unique ID for each medical record |
| patient\_id | INT (FK) | References Patients table |
| doctor\_id | INT (FK) | References Doctors table |
| diagnosis | TEXT | Patient's diagnosis |
| prescription | TEXT | Medication prescribed |
| notes | TEXT | Additional doctor notes |
| date\_of\_visit | DATE | Date of consultation |

### ****Billing Table****

| Column Name | Data Type | Description |
| --- | --- | --- |
| bill\_id | INT (PK) | Unique ID for each bill |
| patient\_id | INT (FK) | References Patients table |
| appointment\_id | INT (FK) | References Appointments table |
| amount | DECIMAL | Total bill amount |
| payment\_status | VARCHAR | Payment status (Paid, Pending) |
| payment\_date | DATE | Date of payment |

## ****3. System Workflows (CLI Diagrams)****

### ****Patient Registration Flow****

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| Start CLI System |

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+--------------------+

| Enter Patient Info |

| (Name, DOB, Phone) |

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| Save to Database |

+--------------------+

|

v

+--------------------+

| Registration Done! |

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### ****Appointment Booking Flow****

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| Start CLI System |

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|

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+---------------------------+

| Enter Patient ID |

| Select Doctor |

| Choose Date & Time |

+---------------------------+

|

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+---------------------------+

| Save to Database |

| Status: Pending |

+---------------------------+

|

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| Appointment Confirmed! |

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### ****Billing & Payment Flow****

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| Enter Appointment ID |

| Generate Bill Amount |

| Set Payment Status |

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| Save to Database |

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| Payment Updated! |

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## ****4. Sample CLI Reports****

### ****Daily Appointments Report****

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DAILY APPOINTMENTS REPORT

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Date: 2025-03-20

Doctor: Dr. Lisa Ray

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| Time | Patient Name | Status |

|-----------|-------------|------------|

| 10:00 AM | John Doe | Completed |

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Date: 2025-03-21

Doctor: Dr. Mark Green

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| Time | Patient Name | Status |

|-----------|-------------|------------|

| 02:00 PM | Jane Smith | Pending |

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### ****Billing Report****

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BILLING REPORT

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| Bill ID | Patient Name | Date | Amount | Payment Status |

|---------|-------------|------------|--------|---------------|

| 301 | John Doe | 2025-03-20 | $100 | Paid |

| 302 | Jane Smith | 2025-03-21 | $50 | Pending |

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### ****Doctor-wise Appointments Summary****

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DOCTOR-WISE APPOINTMENTS REPORT

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| Doctor | Total | Completed | Pending | Canceled |

|---------------|-------|-----------|---------|---------|

| Dr. Lisa Ray | 2 | 1 | 0 | 1 |

| Dr. Mark Green | 1 | 0 | 1 | 0 |

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## ****5. Conclusion****

The **Small Clinic Management System** provides a simple CLI-based solution for handling patient records, appointments, medical records, and billing efficiently. The structured workflows and reporting ensure smooth clinic operations, making it easier for doctors and staff to manage patient data effectively.