PROJECT REPORT

HOSPITAL MANAGEMENT SYSTEM

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Abstract

In the fast-paced world of healthcare, managing patient records, doctor schedules, and appointments is hard. Our Hospital Management System, developed in C programming, offers a user-friendly solution to this problem. By using structures for data organization and simple functions for operations, this system empowers hospital staff to add, view, search, and manage patients, doctors, and appointments efficiently.

This project demonstrates the power of programming in real-world applications, emphasizing simplicity, reliability, and scalability. Key features include patient management, doctor profiles, and appointment scheduling with pharmacy management.

Problem Definition

Imagine a bustling hospital where nurses rush to save lives, doctors make critical decisions, and administrators manage paperwork. Now, picture a simple computer program that eases their burden, allowing them to focus on what matters most: ***patient care.*** *This report explores our Hospital Management System, built with the heart of a caregiver and the logic of C programming.*

Our Hospital Management System addresses these pain points by:

Providing a centralized way to store and retrieve patient, doctor, medicine and appointment data. Ensuring data integrity through structured programming, minimizing human error.

System Design

Overview

The system is designed with modularity in mind, using C structures to represent real-world entities like patients, doctors, medicines and appointments. A menu-driven interface guides users through operations, making it easier even for non-programmers. Data is stored in arrays of structures, simulating a simple database.

Algorithms

- Add Operation (e.g., add patient):
  - Input: User provides details.
  - Process: Store in array at current count index, increment count.
  - Output: Confirmation message.
- Display Operation:
  - Check if count > 0; if not, display "No records."
  - Passes through loops and arrays, print each record's fields.

- Search Operation:
  - Input: ID to search.
  - Passes through loops and arrays, compare IDs.
  - If found, display details; else, "Not found."
- Delete Operation:
  - Input: ID to delete
  - Find index, shift subsequent elements left, decrement count.

These algorithms prioritize clarity and efficiency, ensuring the system feels responsive and caring in its interactions.

Implementation Details

The system is implemented in C:

- Using standard libraries like <stdio.h> for input/output.
- Structures define data models.
- The main loop handles user choices via a switch statement.

Testing and Results

```
-------------Hospital Management System------------

---------Main menu---------
1.Add patient
2.View patient
3.Search patient
4.Delete patient
5.Add doctor
6.View doctor
7.Add appointment
8.View appointment
9.Cancel appointment
10.Add medicine
11.View medicine
12.Update medicine stock
13.Exit
Enter your choice:1

--------Add Patient--------
Enter Patient id:1
Enter the patient name:ishi
Enter the age:18
Enter the disease:cold
Patient added succesfully

---------Main menu---------
1.Add patient
2.View patient
3.Search patient
4.Delete patient
5.Add doctor
6.View doctor
7.Add appointment
8.View appointment
9.Cancel appointment
10.Add medicine
11.View medicine
12.Update medicine stock
13.Exit
Enter your choice:2
```

```
------Patient list--------

Patient 1
ID:1
Name:ishi
Age:18
Disease:cold

---------Main menu---------
1.Add patient
2.View patient
3.Search patient
4.Delete patient
5.Add doctor
6.View doctor
7.Add appointment
8.View appointment
9.Cancel appointment
10.Add medicine
11.View medicine
12.Update medicine stock
13.Exit
Enter your choice:3

Enter patient id to search:1

------Patient found--------
Patient 1
ID:1
Name:ishi
Age:18
Disease:cold
```

```
---------Main menu---------
1.Add patient
2.View patient
3.Search patient
4.Delete patient
5.Add doctor
6.View doctor
7.Add appointment
8.View appointment
9.Cancel appointment
10.Add medicine
11.View medicine
12.Update medicine stock
13.Exit
Enter your choice:4
Enter Patient id:1
Patient deleted
---------Main menu---------
1.Add patient
2.View patient
3.Search patient
4.Delete patient
5.Add doctor
6.View doctor
7.Add appointment
8.View appointment
9.Cancel appointment
10.Add medicine
11.View medicine
12.Update medicine stock
13.Exit
Enter your choice:5

--------Add Doctor-------
Enter doctor id:2
Enter doctor name:ridhika
Enter department:cardiology
Doctor added successfully
```

```
---------Main menu---------
1.Add patient
2.View patient
3.Search patient
4.Delete patient
5.Add doctor
6.View doctor
7.Add appointment
8.View appointment
9.Cancel appointment
10.Add medicine
11.View medicine
12.Update medicine stock
13.Exit
Enter your choice:6

------Doctor list--------

Doctor 1
ID:2
Name:ridhika
Department:cardiology

---------Main menu---------
1.Add patient
2.View patient
3.Search patient
4.Delete patient
5.Add doctor
6.View doctor
7.Add appointment
8.View appointment
9.Cancel appointment
10.Add medicine
11.View medicine
12.Update medicine stock
13.Exit
Enter your choice:7
```

```
----------Add appointment---------
Enter appointment  id:
3
Enter patient id:1
Enter doctor id:2
Enter date:4-12-2025
Appointment added succesfully
```

```
---------Main menu---------
1.Add patient
2.View patient
3.Search patient
4.Delete patient
5.Add doctor
6.View doctor
7.Add appointment
8.View appointment
9.Cancel appointment
10.Add medicine
11.View medicine
12.Update medicine stock
13.Exit
Enter your choice:8

---------Appointment list-----------

Appointment 1
ID:3
Patient id:1
Doctor id:2
Date:4-12-2025

---------Main menu---------
1.Add patient
2.View patient
3.Search patient
4.Delete patient
5.Add doctor
6.View doctor
7.Add appointment
8.View appointment
9.Cancel appointment
10.Add medicine
11.View medicine
12.Update medicine stock
13.Exit
Enter your choice:9
```

```
Enter appointment id:3
Appointment cancelled

---------Main menu---------
1.Add patient
2.View patient
3.Search patient
4.Delete patient
5.Add doctor
6.View doctor
7.Add appointment
8.View appointment
9.Cancel appointment
10.Add medicine
11.View medicine
12.Update medicine stock
13.Exit
Enter your choice:10

----------Add Medicine-----------
Enter medicine id:4
Enter Medicine name:disperin
Enter quantity:5
Medicine added succesfully
---------Main menu---------
1.Add patient
2.View patient
3.Search patient
4.Delete patient
5.Add doctor
6.View doctor
7.Add appointment
8.View appointment
9.Cancel appointment
10.Add medicine
11.View medicine
12.Update medicine stock
13.Exit
Enter your choice:11
```

```
--------Medicine stock---------
Medicine id:4
Name:disperin
Quantity:5

---------Main menu---------
1.Add patient
2.View patient
3.Search patient
4.Delete patient
5.Add doctor
6.View doctor
7.Add appointment
8.View appointment
9.Cancel appointment
10.Add medicine
11.View medicine
12.Update medicine stock
13.Exit
Enter your choice:12

Enter medicine id:4
Enter quantity:6
Not enough stock

---------Main menu---------
1.Add patient
2.View patient
3.Search patient
4.Delete patient
5.Add doctor
6.View doctor
7.Add appointment
8.View appointment
9.Cancel appointment
10.Add medicine
11.View medicine
12.Update medicine stock
13.Exit
Enter your choice:13
```

```
Exiting
```

Conclusion

Hospital Management System isn't just a bunch of code—it's a friendly helper that lets doctors, nurses, and admins spend less time wrestling with paperwork and more time caring for people. By keeping things simple and kind, we've shown how a basic program can make a real difference, like a gentle hand guiding someone through a busy day.

Future work

Looking ahead, we're excited to make this even better. Following points can be added:

- Picture saving all that patient info so it sticks around even after the computer turns off—that's adding file storage to keep things safe.
- Tracking bills or seeing a patient's full story.
- Add simple passwords for login. Encrypt files if saving data. Ensure no unauthorized access by adding role-based checks.

References

Online resources:

GeeksforGeeks,

Let us C:

Yashavant Kanetkar

Inspiration:

Real-world hospital workflows observed in community health centers.

THANK YOU