Hospital Management System

Team Napa Extra

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Submitted to

Motivation:

Huge Crowd = Huge Confusion
= Complex Management = Service Delays

❌ Time is Money

✅ Time is Life

Critical Patient +
Vulnerable System

inna lillahi
wa inna
ilaihi raziun

Here is our project:

Chaos

Data Structure

order

Why our Project is Special??

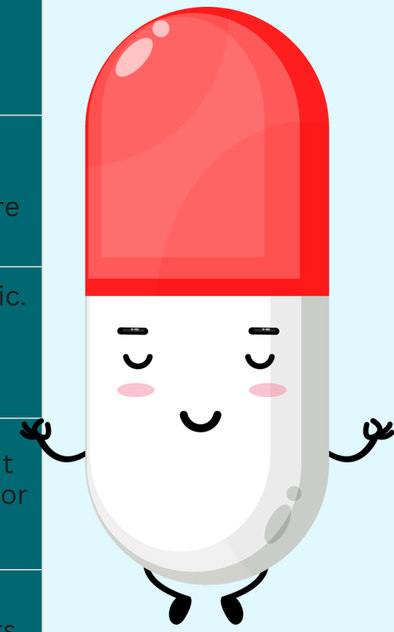
- **Data Persistence:** Unlike standard memory-only projects, this system uses File Handling to save records permanently.
- **Priority Intelligence:** Automates the 'Triage' process—emergency cases are served before routine checkups.
- **Decision Support:** Includes a Doctor Suggestion System to guide patients to the correct department based on their symptoms.
- **Data Integrity:** Organized Table Views for clear administrative oversight.

```
Select Health Issue:
[1] Heart/Chest
[2] Brain/Nerves
[3] Child Care
[4] General Fever/Cold
Choice: 1

+----------------------+----------------------+
|      DEPARTMENT      |    SUGGESTED DOCTOR  |
+----------------------+----------------------+
| Cardiology           | Dr. Sarah Ali        |
+----------------------+----------------------+
```

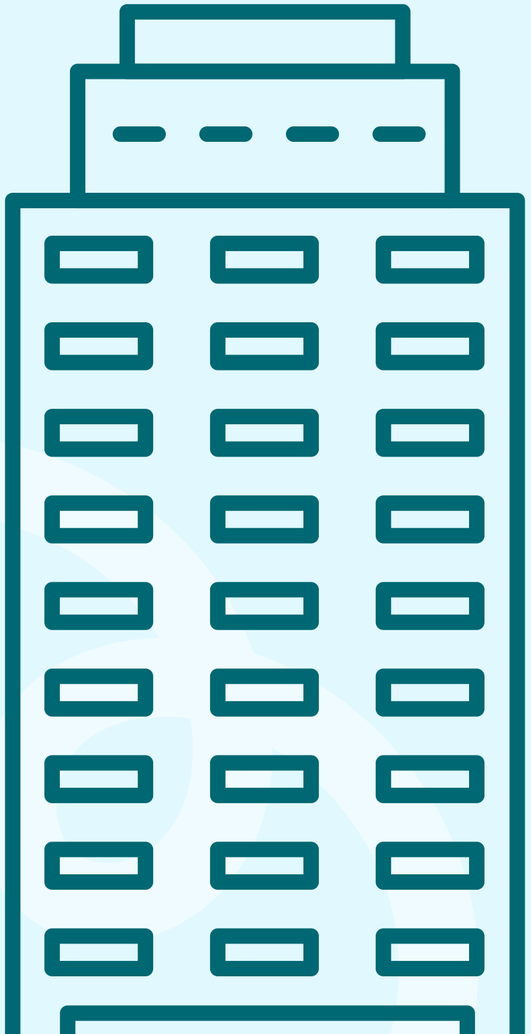
```
--- FULL HOSPITAL REGISTRY ---

+------+----------------------+-----+------------+
|  ID  |      PATIENT NAME    | AGE |   STATUS   |
+------+----------------------+-----+------------+
| 1    | arafat               | 25  | NORMAL     |
| 2    | sijan                | 23  | EMERGENCY  |
+------+----------------------+-----+------------+

Press Enter to continue...
```

How DS used here:

Feature	Case / Use Case	Data Structure Used	Why
Global Registry	Storing all patient records permanently.	**Linked List**	Allows the hospital to add an unlimited number of patients without knowing the size in advance (Dynamic memory).
Waiting Room	Managing the queue for treatment.	**Priority Queue**	Solves the "R.I.P." problem by ensuring Emergency patients (High Priority) are served before Normal ones.
Treatment History	Viewing the most recently treated patient.	**Stack (LIFO)**	Follows "Last-In, First-Out" logic. The person who just left the doctor's room is the "Last Treated."
Doctor Database	Looking up specialists by department.	**Array / Struct Map**	Used for fixed data that doesn't change often. Provides $O(1)$ or instant access to doctor info.
Data Persistence	Keeping records after the program exits.	**File I/O (txt)**	Ensures the system isn't "vulnerable" to power loss. Acts as a permanent bridge for the Linked List.



Thank You !!



Remember,
Time is Life!!