INDIAN INSTITUTE OF INFORMATION TECHNOLOGY

KALYANI

CSC

PROJECT

HOSPITAL MANAGEMENT SYSTEM

(SEMESTER 2)

BY

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Acknowledgment

I would like to express my gratitude to our CS Prof. Dr. Oishila Bandhopadhyay who gave us the golden opportunity of doing this project using **Data Structures.** We hereby bring to notice that this mini project presented in report titled "**HOSPITAL MANAGEMENT SYSTEM**" submitted in the department of Computer Science. This is an authentic project carried out under the guidance of our faculty and other resources available.

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SEC A

Synopsis

Title : Hospital Management System

Objective Of the Project : The main objective of this project is to build a sustainable and easy to use user interface for management of hospital maintenance and stuffs. This includes patient record system, ambulance availability, blood bank info and also a base bill printing.

Key Highlights : The main highlight of the project is, the system auto lists the patients bases on the priority of the emergency set by the doctors.

Project Category : Data Base Management Using Data Structures

Language Used : C (operating system win11)

Data Structures Used : Linked List and Priority Queue

Structure of The Project :

In the proposed system , the administrator can insert , delete and modify the patient records as per the requirements . The laboratory reports can be easily maintained in this system.

This project will help to smoother the process of the hospital activities .

Function Definition:

struct node *insert (struct node *start)

This function accepts a head node and consecutively adds a new node with all the patient details including disease and basic details. Simultaneously, this function prints the given information using FILE HANDLING I/O.

This function contains the priority queue methods which arranges the patients in order of the serious diseases being on top so that care can be given to them in priority.

struct node *delete (struct node *start)

This function deletes the nodes which are present on top. The most fatal diseases are on top so that after treatment the top ones can be easily removed using this function.

void display(struct node *start)

This function shows the list of patients in order of the priority given by the doctors. It also prints all the details of the patients including their diseases.

void tables()

This function shows the list of diseases treated in the hospital.

void ambulance()

This function shows the list of available ambulance and gives us the option to book the AMBULANCE.

void blood bank()

This function has a database for all the blood types including donors and recipients.

int find_booking(char *regnum)

This function searches for patient record using registration number.

void delete_line(int del_line)

This function deletes the patient record from the txt file.

int main()

This is the main function that uses the switch case for providing choices to the receptionist for different functionalities.

Loopholes :

This terminal can be extended by adding a payment and billing option, not added here.

Discussions

This program can be extended to make it more efficient.

It uses a priority queue to assign priority to the patients.

Linked list is used so there is no issue of space management and it can easily store large number of patient data.

Algorithm

1. Initially, a new patient record is created.
2. Then the patient's credentials is taken
3. If it satisfies all the conditions then a bed is allocated.
4. Then the patient list is sorted on the basis of priority queue.
5. Higher the critical value of the disease upper in the list its printed.
6. Txt file is generated along width using file handling.

    1. add patient via ambulance

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 WELCOME TO KALYANI PRIVATE HOSPITAL!


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1.BOOK AMBULANCE
2.ADD A PATIENT
3.DELETE A RECORD
4.DISPLAY ALL APPOINTMENTS
5.DISPLAY BLOODBANK INFO
6.FIND PATIENT RECORD
7.DELETE PATIENT RECORD
8.EXIT
Enter your choice: 1
The number of available ambulances are : 10
Do you want to book the ambulance (1/0) :

1
Enter patient Name:ashish
Enter the patient's age:21
Enter your home address:santnagar
Enter your phone number:7992314953
Enter the blood group of Patient:o+
Enter the reg no:1
Enter your disease Number:Please Refer this tables for your disease!
1.Heart attack
2.Severe wound/Bleeding
3.Cancer
4.Chest pain
5.Fracture
6.Diabetes Checkup
7.Infection
8.Viral Fever
9.Common Cold/Head ache
3
```

2. Add patient via option 2


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                        WELCOME TO KALYANI PRIVATE HOSPITAL!


                        -------------------------------
                        1.BOOK AMBULANCE
                        2.ADD A PATIENT
                        3.DELETE A RECORD
                        4.DISPLAY ALL APPOINTMENTS
                        5.DISPLAY BLOODBANK INFO
                        6.FIND PATIENT RECORD
                        7.DELETE PATIENT RECORD
                        8.EXIT
                        Enter your choice: 4

Priority wise appointments are:
The name of patient is:pratham
The age of patient is:  21
The address of patient is : kalyan
Phone Number: 1907259408
The blood group of patient is: o+
The disease of the patient is : Heart Attack
----------------------------------------------------
The name of patient is:ashish
The age of patient is:  21
The address of patient is : santnagar
Phone Number: -597619639
The blood group of patient is: o+
The disease of the patient is : Cancer
----------------------------------------------------
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5. display bloodbank info


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                        WELCOME TO KALYANI PRIVATE HOSPITAL!


                        -------------------------------
                        1.BOOK AMBULANCE
                        2.ADD A PATIENT
                        3.DELETE A RECORD
                        4.DISPLAY ALL APPOINTMENTS
                        5.DISPLAY BLOODBANK INFO
                        6.FIND PATIENT RECORD
                        7.DELETE PATIENT RECORD
                        8.EXIT
                        Enter your choice: 5
                         The bloodbank data is :
1.O+0   2. O-0  3. A+0  4. A-0  5. B+0  6. B-0  7. AB+0 8. AB-0
Add a
1. Donor
2.Recipient
1
Donor for 1.O+  2. O-   3. A+   4. A-   5. B+   6. B-   7. AB+  8. AB-
1
```

7. Seach patient using registration number

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1
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                           WELCOME TO KALYANI PRIVATE HOSPITAL!

                          ------------------------------
                          1.BOOK AMBULANCE
                          2.ADD A PATIENT
                          3.DELETE A RECORD
                          4.DISPLAY ALL APPOINTMENTS
                          5.DISPLAY BLOODBANK INFO
                          6.FIND PATIENT RECORD
                          7.DELETE PATIENT RECORD
                          8.EXIT
                          Enter your choice: 6
enter the registration number to search : 1
A match found on line: 1

Reg Number: 1 Name : ashish Age : 21 Adress : santnagar Phone Number : -597619639 Blood Group : o+ Disease : Cancer
```

Delete patient record using registration number

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                           WELCOME TO KALYANI PRIVATE HOSPITAL!

                          ------------------------------
                          1.BOOK AMBULANCE
                          2.ADD A PATIENT
                          3.DELETE A RECORD
                          4.DISPLAY ALL APPOINTMENTS
                          5.DISPLAY BLOODBANK INFO
                          6.FIND PATIENT RECORD
                          7.DELETE PATIENT RECORD
                          8.EXIT
                          Enter your choice: 7
Enter the registration Number of the patient : 2
A match found on line: 1

Reg Number: 1 Name : ashish Age : 21 Adress : santnagar Phone Number : -597619639 Blood Group : o+ Disease : Cancer
```