HOSPITAL MANAGEMENT SYSTEM

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EXECUTIVE SUMMARY

Streamline administrative tasks such as patient registration and billing to improve operational efficiency.Enhance clinical workflows by providing easy access to patient records and treatment plans.Optimize resource allocation to minimize waiting times and maximize healthcare delivery.Ensure accurate billing and revenue management for financial sustainability.Promote patient safety through medication error reduction and evidence-based decision-making.

INTRODUCTION

Hospital Management Systems (HMS) revolutionize the way healthcare institutions operate by integrating cutting-edge technology into their daily workflows. These systems offer a centralized platform for managing administrative, clinical, and financial tasks efficiently. From patient records to appointment scheduling and resource allocation, HMS streamline operations, enhance patient care, and optimize overall hospital performance.

DESCRIPTION

Patient Management: The system allows hospitals to register new patients.

Appointment Scheduling: It enables hospitals to manage appointments for patients with doctors.

Electronic Medical Records (EMR): The system stores and manages patient medical records electronically.

Inventory Management: The system helps hospitals manage their inventory of medical supplies.

Laboratory Information System (LIS): It allows laboratories to manage their operations,

Pharmacy Management: The system helps pharmacies manage their inventory, prescription filling

Radiology Information System (RIS): It allows radiology departments to manage their imaging procedures

SOURCE CODE

```
#include <bits/stdc++.h>
using namespace std;
class Hospital {
public:
string H_name;
string location;
int available_beds;
float rating;
string contact;
string doctor_name;
int price;
};
```

```
class Patient : public Hospital {
public:
string P_name;
int P_id;
};
void PrintHospitalData(
vector<Hospital>& hospitals)
{
cout << "PRINT hospitals
DATA:"
<< endl;
```

```
cout << "HospitalName  "
<< "Location  "
<< "Beds_Available  "
<< "Rating  "
<< "Hospital_Contact  "
<< "Doctor_Name  "
<< "Price_Per_Bed  \n";
for (int i = 0; i < 4; i++) {
cout << hospitals[i].H_name
<< "     "
<< "  "
<< hospitals[i].location
<< "   "
<< hospitals[i].available_beds
<< "     "
<< hospitals[i].rating
<< "   "
<< hospitals[i].contact
<< "    "
<< hospitals[i].doctor_name
<< "     "
<< "  "
<< hospitals[i].price
<< "   "
<< endl;
}
cout << endl
<< endl; }
```

```
void PrintPatientData(
vector<Patient>& patients,
vector<Hospital>& hospitals)
{
cout << "PRINT patients DATA:"
<< endl;
cout << "Patient_Name  "
<< "Patient_Id  "
<< "Patient_Contact  "
<< "Alloted_Hospital  "
<< "Patient_Expenditure  \n";
for (int i = 0; i < 4; i++) {
cout << patients[i].P_name
<< "    "
<< "   "
<< patients[i].P_id
<< "    "
<< "   "
<< patients[i].contact
<< "     "
<< hospitals[i].H_name
<< "     "
<< patients[i].price
<< "   "
<< endl;
} cout << endl
<< endl;
}
```

```
bool name(Hospital& A, Hospital& B)
{
return A.H_name > B.H_name;
}
void SortHospitalByName(
vector<Hospital> hospitals)
{
sort(hospitals.begin(),
hospitals.end(),
name); cout << "SORT BY NAME:"
<< endl
<< endl;
PrintHospitalData(hospitals);
}
```

```
bool rating(Hospital& A,
Hospital& B) {
return A.rating > B.rating; }
void
SortHospitalByRating(vector<Hos
pital> hospitals) {
sort(hospitals.begin(),
hospitals.end(),
rating);
cout << "SORT BY Rating:"
<< endl
<< endl;
PrintHospitalData(hospitals);
}
```

```
void HospitalManagement(
string patient_Name[], int
patient_Id[],
string patient_Contact[], int
bookingCost[],
string hospital_Name[], string
locations[], int beds[],
float ratings[], string
hospital_Contact[],
string doctor_Name[], int prices[])
{
vector<Hospital> hospitals;
Hospital h;
for (int i = 0; i < 4; i++) {
h.H_name = hospital_Name[i];
h.location = locations[i];
h.available_beds = beds[i];
h.rating = ratings[i];
h.contact = hospital_Contact[i];
h.doctor_name = doctor_Name[i];
h.price = prices[i];
hospitals.push_back(h);
}
vector<Patient> patients;
Patient p;
for (int i = 0; i < 4; i++) {
p.P_name = patient_Name[i];
p.P_id = patient_Id[i];
```

```
int main() {
string patient_Name[] = { "P1", "P2",
"P3", "P4" };
int patient_Id[] = { 2, 3, 4, 1 };
string patient_Contact[]
= { "234534XXX7", "234576XXX2",
"857465XXX9","567657XXX0" };
int bookingCost[] = { 1000, 1200,1100,
600 }; string hospital_Name[] = { "H1",
"H2", "H4", "H3" };  string locations[] = {
"Bangalore","Bangalore",
"Mumbai ", "Prayagraj" };
int beds[] = { 4, 5, 6, 9 };
float ratings[] = { 5.2, 4.1, 3.4, 5.9 };
string hospital_Contact[]
= { "657534XXX7", "298766XXX2",
"324565XXX9", "343456XXX4" };
string doctor_Name[] = { "D1", "D4",
"D3", "D2" }; int prices[] = { 100, 200,
100, 290 };
HospitalManagement(
patient_Name,
patient_Id,patient_Contact,
bookingCost, hospital_Name,
locations, beds,
ratings, hospital_Contact,
doctor_Name, prices);
return 0; }
```

OUTPUT:

```
PRINT hospitals by Name :Bangalore
HospitalName     Location        Beds_Available  Rating  Hospital_Contact        Doctor_Name     Price_Per_Bed
H1                               Bangalore               4                       5.2             657534XXX7                      D1
                 100
H2                               Bangalore               5                       4.1             298766XXX2                      D4
                 200


SORT BY Available Beds:

PRINT hospitals DATA:
HospitalName     Location        Beds_Available  Rating  Hospital_Contact        Doctor_Name     Price_Per_Bed
H3                               Prayagraj               9                       5.9             343456XXX4                      D2
                 290
H4                               Mumbai                  6                       3.4             324565XXX9                      D3
                 100
H2                               Bangalore               5                       4.1             298766XXX2                      D4
                 200
H1                               Bangalore               4                       5.2             657534XXX7                      D1
                 100


SORT BY Available Beds Price:

PRINT hospitals DATA:
HospitalName     Location        Beds_Available  Rating  Hospital_Contact        Doctor_Name     Price_Per_Bed
H1                               Bangalore               4                       5.2             657534XXX7                      D1
                 100
H4                               Mumbai                  6                       3.4             324565XXX9                      D3
                 100
H2                               Bangalore               5                       4.1             298766XXX2                      D4
                 200
H3                               Prayagraj               9                       5.9             343456XXX4                      D2
                 290



--------------------------------
Process exited after 0.519 seconds with return value 0
Press any key to continue . . .
```

CONCLUSION

In the realm of modern healthcare, Hospital Management Systems (HMS) stand as indispensable tools, facilitating efficient operations, enhancing patient care, and driving organizational excellence. Through the amalgamation of advanced technologies and streamlined processes, these systems have revolutionized the way healthcare institutions function, empowering them to meet the evolving needs of patients and stakeholders.

REFERENCES

1. I Searched academic databases like PubMed, IEEE Xplore, ScienceDirect, or Google Scholar for research articles on hospital management systems.
2. Look for books on hospital management systems and healthcare information technology in libraries or online platforms like Amazon or Google Books.
3. Explore proceedings from conferences related to healthcare informatics, hospital management.

THANK YOU