Hospital Management System code using C++

#include <iostream>

#include <vector>

#include <string>

using namespace std;

class Person {

protected:

string name;

int age;

string gender;

public:

Person(string n, int a, string g) : name(n), age(a), gender(g) {}

void display() {

cout << "Name: " << name << endl;

cout << "Age: " << age << endl;

cout << "Gender: " << gender << endl;

}

};

class Patient : public Person {

private:

int patientID;

string disease;

public:

Patient(string n, int a, string g, int id, string d) : Person(n, a, g), patientID(id), disease(d) {}

void display() {

cout << "Patient ID: " << patientID << endl;

Person::display();

cout << "Disease: " << disease << endl;

}

};

class Doctor : public Person {

private:

int doctorID;

string specialization;

public:

Doctor(string n, int a, string g, int id, string s) : Person(n, a, g), doctorID(id), specialization(s) {}

void display() {

cout << "Doctor ID: " << doctorID << endl;

Person::display();

cout << "Specialization: " << specialization << endl;

}

};

class HospitalManagementSystem {

private:

vector<Patient> patients;

vector<Doctor> doctors;

public:

void addPatient(Patient p) {

patients.push\_back(p);

}

void addDoctor(Doctor d) {

doctors.push\_back(d);

}

void displayPatients() {

cout << "\nList of Patients:\n";

for (auto &p : patients) {

p.display();

cout << endl;

}

}

void displayDoctors() {

cout << "\nList of Doctors:\n";

for (auto &d : doctors) {

d.display();

cout << endl;

}

}

};

int main() {

HospitalManagementSystem hms;

// Add some doctors

hms.addDoctor(Doctor("Dr. Smith", 45, "Male", 1001, "Cardiology"));

hms.addDoctor(Doctor("Dr. Johnson", 50, "Female", 1002, "Neurology"));

// Add some patients

hms.addPatient(Patient("John Doe", 30, "Male", 2001, "Flu"));

hms.addPatient(Patient("Jane Doe", 25, "Female", 2002, "Migraine"));

// Display the list of doctors and patients

hms.displayDoctors();

hms.displayPatients();

return 0;

}