

Design Overview for Hospital Management System

Name: Nguyen Duc Thang

Student ID: 104776473

Summary of Program

Describe what you want the program to do... one or two paragraphs.

Include a sketch of sample output to illustrate your idea.

This program will illustrate the functionality of how Hospital manage the client and also the staff inside that hospital.

Sketch:

```
Please enter your details:
Name: Thang
Date of Birth: 30/11/2005
Contact: 0123456789
Symptoms: "Headaches", "Exhaustion", "Lack of sleep"

You will be assigned to a psychologist

After examination you are having: stress
You should take enough sleep, have a healthier diet and do some exercises

Your record has been stored in the hospital database
```

1. Design Patterns implemented in the program:
 - Singleton Pattern
 - Factory Pattern
 - Observer Pattern
 - Strategy Pattern
 - Decorator Pattern
2. Complexity and additional functionalities:

In this custom program I have used the knowledge learnt from previous task as well as do some research about the design patterns and Responsibility Driven Design to implement the UML diagram which will have the flexibility to change it's core function due to the design patterns implemented.
3. In real world medical and health are essential fields for society, with this Health Management System I implemented, It will help enhance the efficiency of the Hospital system and also can be extended to different model of hospital due to it's versatile using the design patterns implemented into the program.

- This is not simple compared to the D level Custom Program because it requires you to not just think about the solution for one problem but the custom program have to expand and involve for example it can be used in different library others than the dotnet framework or it can change it's functionality depends on the user's requirements.

Required Roles

Describe each of the classes, interfaces, and any enumerations you will create. Use a different table to describe each role you will have, using the following table templates.

Table 1: <<role name>> details – duplicate

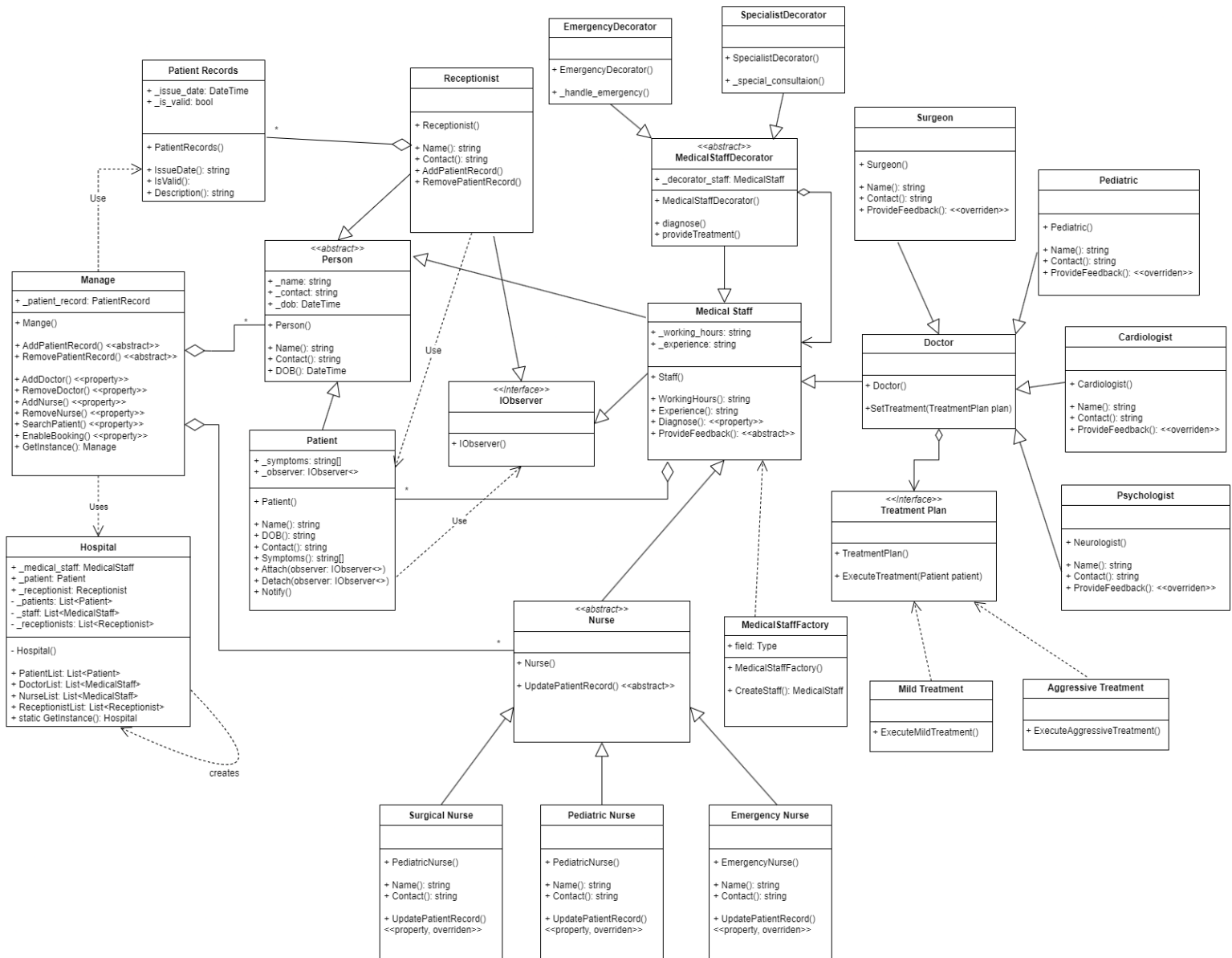
Responsibility	Type Details	Notes
_medical_staff:	MedicalStaff	Include information about doctors and nurse
_patient:	Patient	Include patient information and symptoms
_receptionist:	Receptionist	Include information and roles of a receptionist
_patient_record:	PatientRecord	Include: date and description given to the patient
_issue_date:	DateTime	Contains the day, month and year
_is_valid:	Bool	Check if the record is from a medical staff or not
_name:	String	Name of patient or medical staff
_contact:	String	Phone number of the person
_dob:	DateTime	Date of birth of the person
_symptoms:	string[]	Problem the patient are having
_working_hours:	string	Time that a medical staff will be on
_experience:	string	Number of years in the job
Hospital()	void	Contains patient and medical staff data
Manage()	void	Control how many medical staff are available and enable patient record and find it
PatientRecord()	void	Contains feedback given from the medical staff
Receptionist()	void	Can add and remove a patient record
Person()	void	Abstract class represent a human information
Patient()	void	Include patient's personal information and symptoms
Nurse()	void	A medical staff that will update the patient record
SurgicalNurse()	void	A type of nurse will update feedback from a surgeon
PediatricNurse()	void	A type of nurse will update feedback from a pediatric
EmergencyNurse()	void	A type of nurse will update feedback from others doctor type
MedicalStaff()	void	Abstract class inherit from person class
Surgeon()	void	Will give feedback to the patient
Pediatric()	void	Will give feedback to the patient
Cardiologist()	void	Will give feedback to the patient
Psychologist()	void	Will give feedback to the patient
MedicalStaffFactory	void	Create a new Medical Staff
TreatmentPlan	void	Give the solution based on patient's condition

MildTreatment	void	Give a mild treatment to the medical staff
AggressiveTreatment	void	Give a aggressive treatment to the medical staff
MedicalStaffFactory	void	Create a medical staff
IObserver()	void	Update the data based on the input
Doctor()	void	Set treatment for patient
MedicalStaffDecorator()	void	Allow flexible addition to the responsibility to medical staff
SpecialDecorator()	void	Use for rare patient condition that need special consultation
EmergencyDecorator()	void	Use for patient with emergency issue

Table 2: <<enumeration name>> details

Value	Notes

Class Diagram



Sequence Diagram

