: Object Oriented Programming; `classes`, `inheritance`

Textbook pg 815, prob 11. In this exercise, you will design various classes and write a program to computerize the billing system of a hospital.

1. Design the `class doctorType`, inheriting from `class personType`, defined in Chapter 10 of the textbook, with an additional member to store a doctor's speciality. Add appropriate constructors and methods to inialize, access, and manipulate the data members.

2. Design the `class billType` with data members to store a patient's ID and a patient's hospital charges, such as pharmacy charges for medicine, doctor's fee, and room charges. Add appropriate constructors and methods to initialize, access, and manipulate the data members.

3. Design the `class patientType`, inheriting from `class personType`, defined in Chapter 10 of the textbook, with additional data members to stores a patient's ID, age, date of birth, attending physician's name, the date when the patient was admitted in the hospital, and the date when the patient was discharged from the hospital. (Use the `class dateType` to store the date of birth, admit date, discharge date, and the `class doctorType` to store the attending physician's name.) Add appropriate constructors and member functions to initialize, access, and manipulate the data members.

4. Write a program to test your classes.

The classes should be defined in the header file `hw08.h` with function prototypes for the methods (member functions). The methods (including constructors) should in turn be defined each in separate files (named `person.cpp, doctor.cpp, bill.cpp, patient.cpp` and `date.cpp`. Use `make` to automate compilation minimizing compilation upon individual changes. As usual, demonstrate the running of the program in a `script (hw08.scr)` session. Submit the `tar` package to canvas by the due date on top of this page.