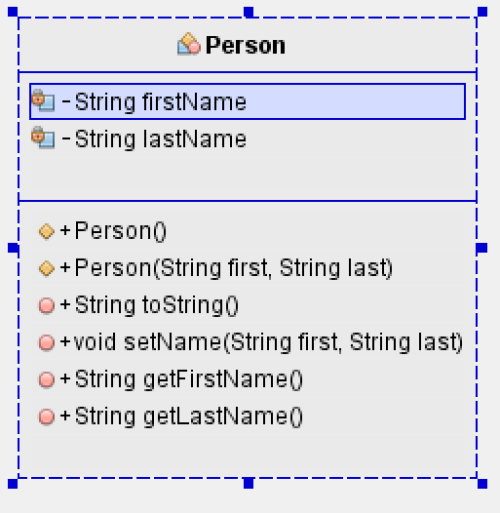
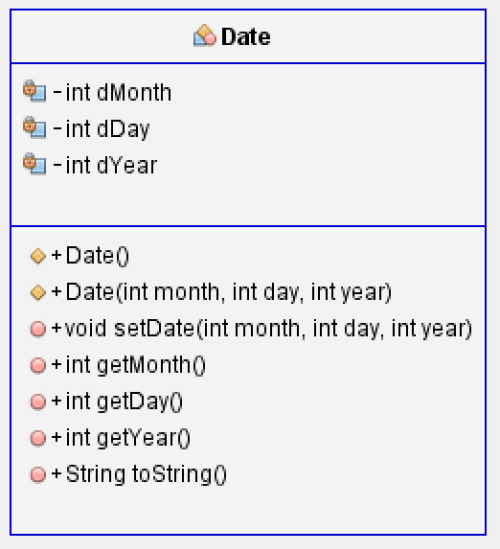
How to submit your solutions:

- **You will submit zip folder that contains all the .java files and the UML diagram**
- **Note: Codes will be compared against each other using "document similarity" tools. Any evidence of code duplication will result in an 'F' in this assignment or an 'F' in this course.**

In this assignment, you will design a simple billing system for a hospital. You are given a person class and Date class (code are provided and UMLs shown below).





- Design a class named Doctor, which is derived class of class Person with additional data members to store a doctor's specialty as a String and Fee as double. Add appropriate constructors and methods to initialize, access, and manipulate the data members. toString and equal methods should be present.
- Design a class named Bill with data members to store an object of the patient, object of the Doctor class and the patient's hospital charges such as the doctor's fee, and the room charges. Add appropriate constructors and methods to initialize, access, and manipulate the data members. **toString and equal methods should be present. toString method should display the patient and doctor information and all the charges.**
    - The doctor's fee is the fee charged by the doctor seeing the patient
    - Room charge should be based on total number of days the patient is in the hospital. (depends on patient's admission and discharged dates). **A patient is charged $150 per day.**
- Design the class named Patient, which is a derived class of class Person, with additional data members to store a patient's ID, age, date of birth, object of the doctor attending the patient, the date when the patient was admitted in the hospital, and the date when the patient was discharged from the hospital. (Use the class Date to store the date of birth, admit date, discharge date) Add appropriate constructors and methods to initialize, access, and manipulate the data members. toString and equal methods should be present.
- Design a testing Class to test the classes you created. This testing class will only have a main method.
    - In the main method, create the given objects of patient class and their corresponding doctor objects shown in table below. **You need to create objects of Bill class for each of the patient and display the bill.**

Patient				**Doctor**			
First Name	Last name	admission Date	Discharge Date	First Name	Last name	Fee	Speciality
Mike	Anderson	3/10/2020	3/15/2020	Blake	Winter	45	Surgery
John	Daugherty	1/3/2020	1/15/2020	Hannah	Shives	75	Medicine
Ben	Hayes	2/6/2020	2/20/2020	Hannah	Shives	75	Medicine
Jennifer	Hilton	2/10/2020	2/12/2020	Blake	Winter	45	Surgery

- Also create UML diagrams for each of the classes and show the class interactions. This can be done using easyUML netbeans plugin described in one of the lectures on BlackBoard.