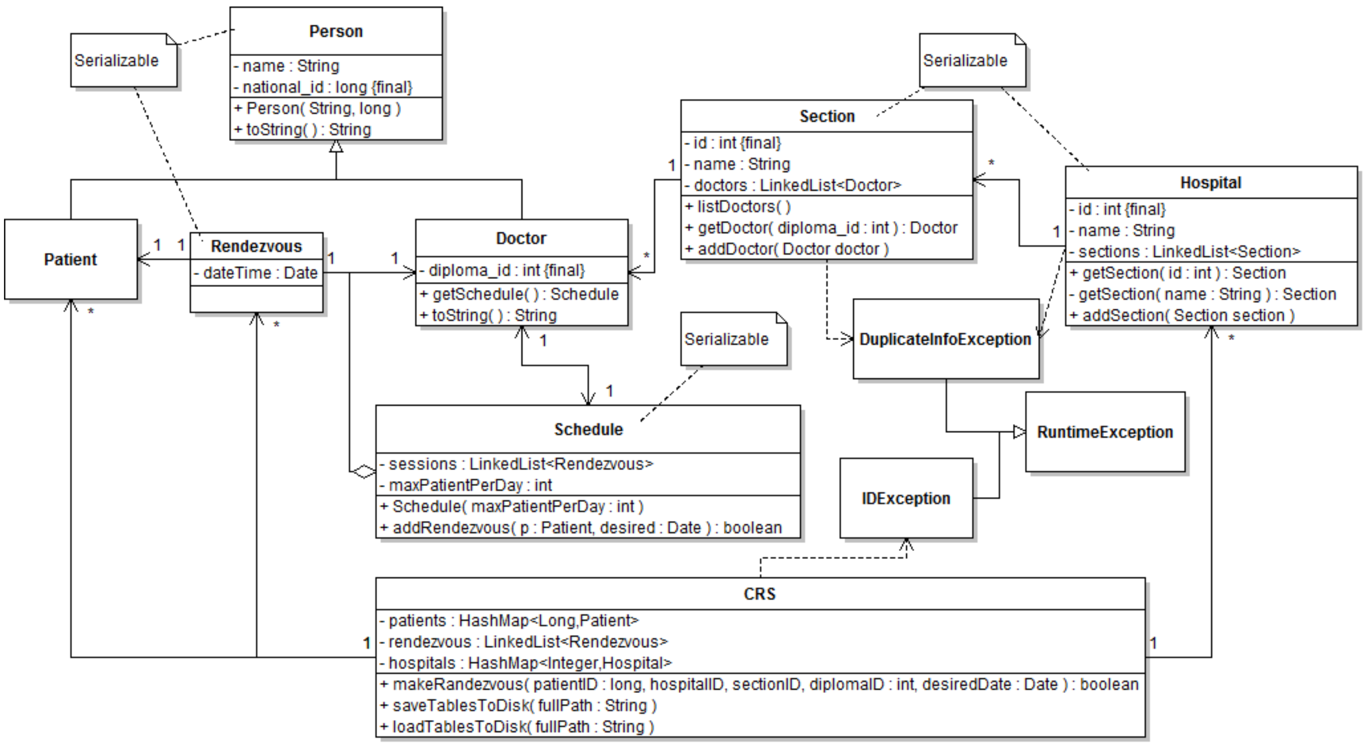
BLM2012 Object Oriented Prog., Course Project: A Clinic Reservation Information System

Due 13.01.2025, Monday, 23:59 PM


Serializable
Person
- name : String
- national_id : long {final}
+ Person(String, long)
+ toString( ) : String
Serializable
Section
- id : int {final}
- name : String
- doctors : LinkedList<Doctor>
+ listDoctors( )
+ getDoctor(diploma_id : int) : Doctor
+ addDoctor(Doctor doctor)
Hospital
- id : int {final}
- name : String
- sections : LinkedList<Section>
+ getSection(id : int) : Section
- getSection(name : String) : Section
+ addSection(Section section)
Patient
Rendezvous
- dateTime : Date
Doctor
- diploma_id : int {final}
+ getSchedule( ) : Schedule
+ toString( ) : String
Serializable
DuplicateInfoException
RuntimeException
IDException
Schedule
- sessions : LinkedList<Rendezvous>
- maxPatientPerDay : int
+ Schedule(maxPatientPerDay : int)
+ addRendezvous(p : Patient, desired : Date) : boolean
CRS
- patients : HashMap<Long,Patient>
- rendezvous : LinkedList<Rendezvous>
- hospitals : HashMap<Integer,Hospital>
+ makeRandezvous(patientID : long, hospitalID, sectionID, diplomaID : int, desiredDate : Date) : boolean
+ saveTablesToDisk(fullPath : String)
+ loadTablesToDisk(fullPath : String)
1
1
1
1
*
*
1
*
1
1
*
1
*
1
1
1

In order to have a common ground for coding, testing and evaluation, the main UML class diagram of the business logic is given above. You may need to extract hidden information from the schema and add necessary code while implementing your project. Don't forget to handle multithreading issues. You are required to add a graphical user interface and unit tests. Here are some details about the business logic:

Problem Domain: You are writing software for managing reservations for a clinic.

Additional Information:

- The exceptions given in the UML class diagram exist for unit testing purposes. The system must somehow be aware of being started either in GUI mode or not. When started in GUI mode, the exceptions will not be thrown. Otherwise, the exceptions will be thrown.
- The addRendezvous method of class Schedule must first determine the current rendezvous count in the desired date. If the maxPatientPerDay limit has been reached, the method must return false. In order to find whether two dates show the same day, check the equalities of Calendar.YEAR and Calendar.DAY_OF_YEAR.
- In the class Section, A DuplicateInfoException must be generated if a doctor is to be added although another doctor with the same diploma ID already exists in the list.
- In the class CRS, if there is an ID that cannot be found in the relevant data structure, an IDException must be generated.
- The class CRS works with object serialization and deserialization. No external database and text files are necessary to save and restore records.

Expectations from the student:

1. You shall implement all the classes given in the UML class diagram.
2. You need to add GUI functionality to your project.
3. You are required to add unit tests to your project, too. There must be at least two jUnit test cases for each class depicted as having member fields in the main UML class diagram.
4. This is an individual project. You are required to do your project on your own. Your code is subject to be checked against other student's code. Cheating is not allowed and will not be tolerated.

5. Projects are due at 11:59pm on the date specified. A grading penalty will be applied to late assignments. (10% penalty up to the first 24 hours, 20% for 24 to 48 hours, with no credit received after that)
6. Submitting a project is mandatory. (Submitted projects will be demonstrated according to a schedule that will be announced later.)
7. Submissions will be done into two separate areas at online.yildiz:
    - The first area is for submission of your source codes and unit tests as a zip file.
    - The second area is for submission of the single executable jar file of your project.
    - If you use a framework other than the javax.swing library, it must not need a separate installation and it must be included in both the zip and jar files.