

School management

A School is an institution for learning and you are going to make Java application to create a system that can handle the requirements.

Your task is to create a command line application that uses collections to handle relationship between classes.

You are also going to use collections to store all your created objects. In this assignment we also care a lot on how you structure your code (*See the Structure requirement*)

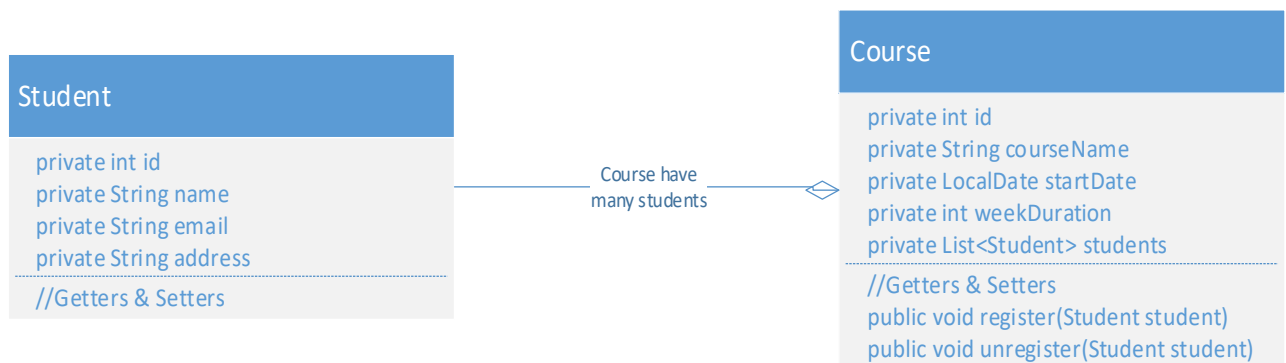
It is also important that you Unit test methods as you write them to avoid bugs.

Class Student:

All students should have an id, name, email and an address.

Class Course:

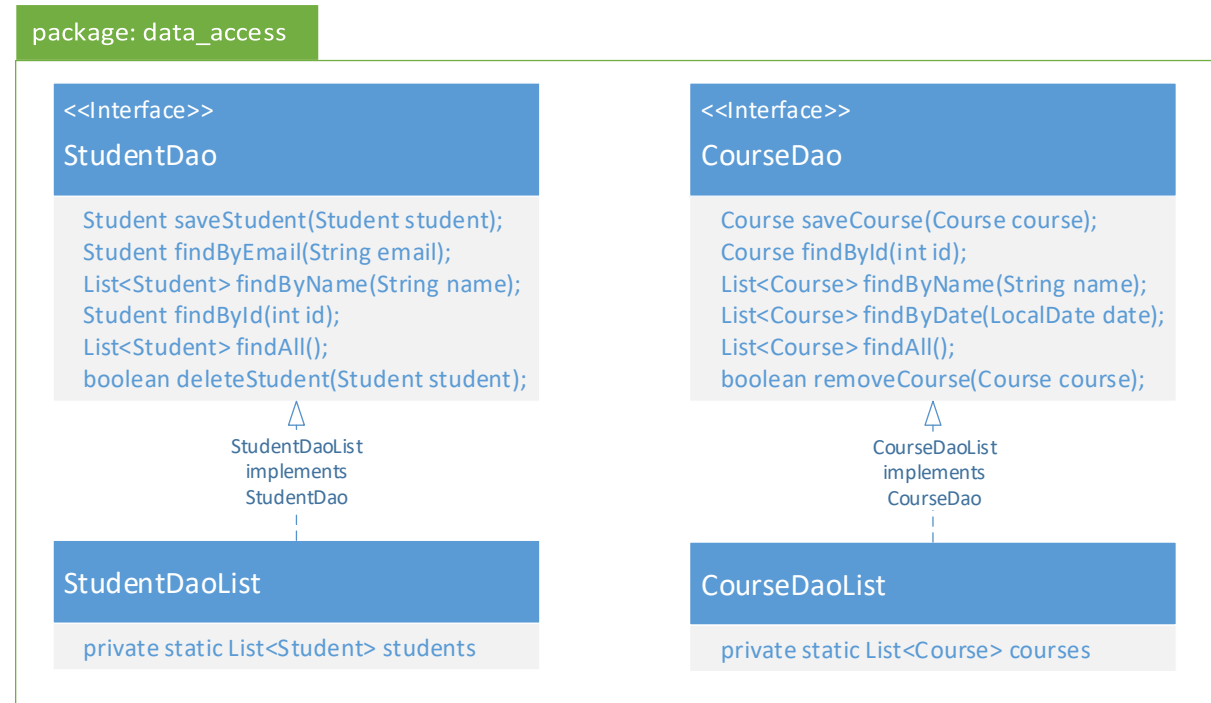
Courses should have id, course name, start date and duration in weeks. The class need to have a Collection of students representing registered students for a certain course. You need to create methods to add and remove students from the collection.



Each student can participate in many courses and each Course have many students. This relationship should be handled from the Course class.

Structure Requirement:

Course and Student objects should be stored in collections you decide. Its common that you separate your data access in a separate package away from the business logic. Your Student and Course collections should be stored inside Data Access Objects, so called DAO's. The DAO classes only concern should be to create, read, update and remove objects from the collections.



Make your Dao classes implement the methods from the interfaces above. If you don't want to use List its okay to use another collection like Set or Map.

Methods explanation:

- `Student saveStudent(Student student)` and `Course saveCourse(Course course)` should add objects to the collection and return the same object back.
- The find methods should find and return object(s) matching the search criteria.
- The remove methods should remove matching object from the collection.

Create the Command Line User Interface:

Finally create a command line User Interface where you need to create functionality to:

- Create new Courses and Students
- Register and remove Students to/from Courses
- Finding Students and Courses in various ways
- Edit Students and Courses

Bonus:

Implement Lecture and Teacher. Each Course have one Teacher that supervises the course. Courses also have many Lectures, where each Lecture has at least one teacher.

Bonus:

Make Student – Course into a bidirectional relationship by adding a collection inside Student class that keep track of courses the student is participating in. It's a good practice when you add a Student to a Course to also add the Course to the Student's collection of courses. All by only calling one method.

Good Luck!