

Students

Student class

Package: com.isimtl.students.models

Create a Student model class according to the following requirements.

For each property, add a private field, with a public getter method, and possibly a public setter method if required.

Ensure that all rules are respected throughout all the code in your class. In particular, rigorously enforce all rules in all constructors and setter methods, because that is where you will use assignment to set the values of fields.

Remember that enforcing rules can look different in different contexts. Enforcing a rule in a constructor might mean throwing an exception if invalid. Enforcing a rule in a setter method might mean doing nothing if invalid.

Properties

- Id (immutable field + get)
- First name (field + get + set)
- Last name (field + get + set)
- Date of birth (field + get + set)

Rules

- Id can never change
- First name can never be null
- Last name can never be null
- Date of birth can never be null
- Date of birth can never be in the future

Constructor

Add a single parameterized constructor.

- Parameters: one for each field
- Validation: If any parameter is invalid, throw an `IllegalArgumentException` with a clear message
- Initialization: Initialize fields according to parameters

Setter methods

- Validation: If the parameter is invalid, do nothing
- Set field: If the parameter is valid, set the field according to the parameter

Student class (continued)

Calculated getter methods

Add the following calculated getter methods. Do not add separate fields for these. Instead, calculate and return the result based upon other related data.

Get full name

- Calculate and return full name, based on first name and last name

Get age

- Calculate and return age, based on date of birth and present date
- Use the `LocalDate` and `Period` classes to perform this calculation

Override `toString` method

- Return a string specifying the type, id, and full name
- Example: "Student 10001 Anna Brown"

StudentService class

Package: com.isimtl.students.services

Requirements

- List of students should contain at least 4 students (and no null elements)
- All student ids must be unique

Get students method

- Return an `ArrayList<Student>` containing all the students

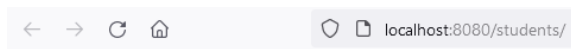
StudentListController

Package: com.isimtl.students.controllers

Create a servlet that displays a list of all students.

Requirements

- The servlet should be shown automatically as the home page of the website (delete index.html, and configure the `@WebServlet` annotation's url patterns)
- Use an instance of the `StudentService` class to access a list of all the students
- Display the students using an HTML list, with `` and ``
- For each student, display:
 - The student's `toString` label
 - The student's date of birth
 - The student's age



Students

- Student 10001 Anna Brown
- Date of birth: 1999-05-31
- Age: 23
- Student 10002 Catherine Dubois
- Date of birth: 2001-09-15
- Age: 20
- Student 10003 Emily Freeman
- Date of birth: 1997-01-28
- Age: 25
- Student 10004 Gabriel Harcourt
- Date of birth: 2002-11-06
- Age: 19