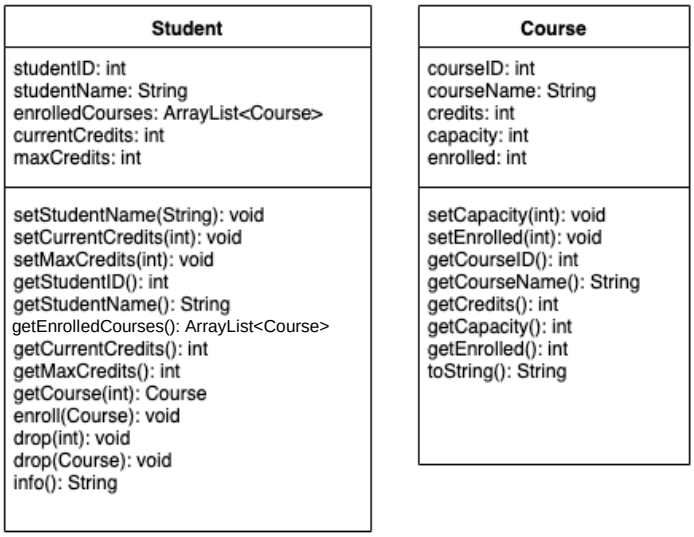
Assignment 4

Requirements:

- Create a Java project named yourStudentId_HW4
- Read instructions and create classes needed. You are supposed to add 3 classes (2 required + 1 Tester) to the project.
- Your code must be properly formatted with sensible variable names! Refer to the text for code format examples.
- The instruction for Tester and output are for your reference.
- Make sure your classes correctly implement the public interfaces.

The following diagram describes two class you need to implement.

Figure 1



1. Create **Student** class

Student	
Modifier and type	**Method (or Variable) and description**
Instance variable	
int	studentID The student ID.
String	studentName The student's name
ArrayList<Course>	enrolledCourses An ArrayList that holds all courses have been selected
int	currentCredits current credits
int	maxCredits credits limit
Constructor	
Student(int studentID, String name) **Constructs a student object with given student id, name, set currentCredits as 0, set maxCredits as 25 and initialize enrolledCourse.** **Student(int studentID, String name, int maxCredits)** **Constructs a student object with given student id, name, maxCredits, set currentCredits 0 and initialize enrolledCourse.**	

Instance methods	
-	For setter and getter please refer to Figure 1.
Course	getCourse(int id) Find the Course object in enrolledCourses by the courseID. If found, returns the Course object. Otherwise, returns null.
void	enroll(Course course) This method is for student to register a course. 1. Check whether the capacity of the course is available. If not, print "courseID is full" and go to step 6. 2. Check if the currentCredits after adding the course is less than maxCredits. If not, print "studentID cannot enroll any course" and go to step 6. 3. Add the course to enrolledCourse 4. Adjust enroll number of the course 5. Adjust currentCredits of the student 6. Terminate the program
void	drop(int courseID) Use parameter courseID to check if the course is in enrolledCourses or not. If is, remove it from enrolledCourses(Don't forget to revise the current number of student of this class and adjust the current credits of this student);If isn't, show the information at console. (See output below)
void	drop(Course course) Use a Course object to check if the course is in enrolledCourses or not. If is, remove it from enrolledCourses(Don't forget to revise the current number of student of this class and adjust the current credits of this student);If isn't, show the information at console. (See output below)
String	info() Return a String description for the student information and the course student has chosen. (See output below)

2. Create **Course** class

Course	
Modifier and type	**Method (or Variable) and description**
Instance variable	
int	courseID The course number of this course.
String	courseName The course name of this course.
int	credits The credits of the course.
int	capacity The maximum number of students in this course
int	enrolled The current number of students in this course.
Constructor	
Course(int id, String name, int credits, int capacity) **Constructs a Course object with given setCourseID, setCourseName, setCredits, setCapacity and set enrolled as 0.**	
Instance methods	
-	For setter and getter please refer to Figure 1
String	toString() Return a String description for the courseID, courseName, credits, enrolled and capacity of the course. (See output below)

Tester

```
public class Tester {
	public static void main(String[] args) {
		Student stu1 = new Student(108306100, "Allen", 15);
		Student stu2 = new Student(108306101, "Bob");
		Course c1 = new Course(306101, "OOPI", 15, 2);
		Course c2 = new Course(306201, "OOPII", 2, 2);

		stu1.enroll(c1);
		stu2.enroll(c2);
		stu2.enroll(c1);
		stu1.enroll(c2);
		stu1.drop(306201);
		stu2.drop(c2);
		System.out.println(stu1.info());
		System.out.println("---------");
		System.out.println(stu2.info());
		System.out.println("---------");
		System.out.println(c1.toString());
		System.out.println(c2.toString());
	}
}
```

Output

```
108306100 cannot enroll any course
108306100 does not in 306201
Student ID: 108306100
Name: Allen
Credits: 15/15
Course list
306101 OOPI 15

---------
Student ID: 108306101
Name: Bob
Credits: 15/25
Course list
306101 OOPI 15

---------
306101 OOPI 15 2/2
306201 OOPII 2 0/2
```

Submission: ***IMPORTANT**

1. Submit **"class" file** via https://140.119.19.74:8443/oop/

2. Submit your **project as "zip (or rar) file"** via WM5. No other submissions will be graded.

Deadline: 2019/12/15 23:59 (for both Mon56 and Tue23)