**SOFTWARE CONSTRUCTION 2**

**LAB PREPARATION**

**4&6**

**BY**

**EMMANUEL DURU**

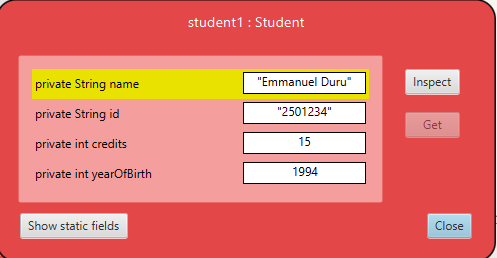
**MATRIC NUMBER: 2502227**

**GROUP 32**

**(B)**

**PROFESSOR WOLFGANG RENZ**

**(A and B - your instance)**  Create an instance of ***Student*** with your own name, year of birth, id and current credits. Check in the object inspector if the values have been stored correctly (screenshot into the report!). Call the objects print method and check the output in the terminal window. Copy the recorded method calls together with the generated output into your report. Add your instance to a ***LabClass*** instance, define it's instructor, room and time, and print the lab class table by calling the printlist method. Again, copy the recorded method calls together with the generated output into your report



Student student1 = new Student("Emmanuel Duru", 1994, "2501234", 15);

student1.print();

Emmanuel Duru, birthYear: 1994, student ID: 2501234, credits: 15

**(A and B - your instance):**

LabClass labClass1 = new LabClass(4);

labClass1.enrollStudent(student1);

labClass1.setInstructor("Emmanuel Ogbonna");

labClass1.setRoom("360");

labClass1.setTime("Monday, 08:10AM");

labClass1.printList();

Lab class Monday, 08:10AM

Instructor: Emmanuel Ogbonna Room: 360

Class list:

Emmanuel Duru, birthYear: 1994, student ID: 2501234, credits: 15

Number of students: 1

**(A AND B - FORMATED PRINTING):**  To generate a lab class table with four student entries, simply add your above student instance twice and another student instance twice. Use formated printing to provide a nice table with two heading lines, the first displaying organisational items, instructor, room and time, the second being the heading line for the students list with "Name", " Birth year", "ID" and "Credits". Copy the generated output into your report.

**METHOD:** i ensured that the lab class was instantiated to generate the instances for the students and get them enrolled to the class with the given information given below respectively.

**ORGANIZATIONAL ITEMS:**

Student student2 = new Student("Paul Okoye", 1989, "2502345", 19);

labClass1.enrollStudent(student1);

labClass1.enrollStudent(student2);

labClass1.enrollStudent(student2);

labClass1.printList();

**INSTRUCTOR INFORMATION:**

Lab class Monday, 08:10AM

Instructor: Emmanuel Ogbonna Room: 360

Class list:

Name: Emmanuel Duru

Year of birth: 1994

Student ID: 2501234

Credits: 15

Name: Emmanuel Duru

Year of birth: 1994

Student ID: 2501234

Credits: 15

Name: Paul Okoye

Year of birth: 1989

Student ID: 2502345

Credits: 19

Name: Paul Okoye

Year of birth: 1989

Student ID: 2502345

Credits: 19

Number of students: 4

**(A and B - hashset)**

When I replaced the ArrayList with the HashSet, I tried to enroll each student twice but when I printed, each student was only enrolled once. The reason is as explained below:

ArrayList: the Inserted specified element at the specified position in this list. Changes the current position of the element (if any) and any subsequent elements to the right (adds one to their indices).

HashSet:

added the allocated element when I could not find it present . More formally, adds the specified element e to this set if this set contains no element e2 such that (e==null ? e2==null : e.equals(e2)). If this set already contains the element, the call leaves the set unchanged and returns false. That is the relationship respectively.

**(B - Wikipedia List)**

**METHOD:** i had to input the System.out.println() in respect to my Student ID into the code pad of the Blue j and got 9 as the given result, afterwards I went to the given Wikipedia link on the class and counted to the NO.9 column of the table to get the result that is given below.

System.out.println(2502665 % 13);

9

My Student ID: 2502665

My power plant is given below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| [Beloyarsk](https://en.wikipedia.org/wiki/Beloyarsk_Nuclear_Power_Station) | 2 | 1,597 | https://upload.wikimedia.org/wikipedia/en/thumb/f/f3/Flag_of_Russia.svg/23px-Flag_of_Russia.svg.png [Russia](https://en.wikipedia.org/wiki/Russia) | https://upload.wikimedia.org/wikipedia/commons/thumb/5/55/WMA_button2b.png/17px-WMA_button2b.png[56°50′30″N 61°19′21″E](https://tools.wmflabs.org/geohack/geohack.php?pagename=List_of_nuclear_power_stations&params=56_50_30_N_61_19_21_E_&title=Beloyarsk+Nuclear+Power+Station) |

*Source:* [*https://en.wikipedia.org/wiki/List\_of\_nuclear\_power\_stations#Under\_construction\_(examples)*](https://en.wikipedia.org/wiki/List_of_nuclear_power_stations#Under_construction_(examples))