Midterm Evaluation: 30%

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| **Course Identification** | |
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| Course title: | **Web Services** |
| Course number: | 420-941-VA |
| Section: | 5809 |
| Teacher’s name: | Leonardo Mascarenhas |
| Duration: | 6 hours |
| Semester: | Fall 2022 |
| **Student Identification** | |
| Name: Dennis Joseph Mayuga Student number: 2295238  Date: January 9th, 2023 Result:  (check) I DENNIS JOSEPH MAYUGA declare that this is an original work, and that I credited all content sources of which I am not the author (online and printed, images, graphics, films, etc.), in the required quotation and citation style for this work. | |
| **Standard of the Evaluated Competencies** | |
|  | |
| **Evaluated elements of the competency.**   * System environment * Java implementation * Unit Testing * Command line execution | |
| **Mark Breakdown** | |
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| * **This evaluation is worth for a total of 100 points.** | |

* **You need to submit the project into Léa respecting the defined period.  
  Plan to submit your work 30min before the deadline, I’ll not accept submissions by Teams, MIO, Email, etc.  
  Remember that you can submit more than once.**
* **Unlike our exercises, it is not allowed to share any information.**
* **The IDE is your choice, I suggest Visual Studio Code or IntelliJ.**
* **Save the new midterm should be zipped and respect the following standard name below:  
  YOURNAME\_YOURID\_MIDTERM\_OS**

1. Your project must run and execute.
2. You should comment all methods.
3. You should name your objects and variables properly.  
   We should not read the entire class or method to understand what the variable does.
4. Create a Maven project named SaqCustomersAPI.
5. Respect the following configuration:

- Packaging “jar”

- Java version: 17

1. Your project should register Customers for SAQ ***using the command line***.  
   No need for database integration, you can implement messages to save and list.  
   The customer must provide the following data: *Name*, *Last* name and *Age*.
2. Hardcode the following data:  
   $ … save John Doe 36

$ … save Joao Silva 25

1. Save a new customer  
   Once saved, **list all**
2. If the customer’s age is less than 18, show an error message saying that the application cannot register and do not add this customer to the list.
3. After the registration we should be able to see the entire customer list using the following command:  
   $ … list
4. Implement Unit Test for all classes. It will be considered only ***meaningful tests.***

In your own words, answer the following:

1. What is a Web Service?  
   Web Service is a standard way to build programs. I think of a maven build with its pom.xml file. These programs must be built according to protocol to ensure that programs built on different platforms and languages can work together using the same architectural pattern.
2. Explain API using your own words. How it works?

API’s are contracts that accept certain inputs and will return desired responses. They can be integrated with other API’s and combined to have a full working program.

1. What is maven?

Maven is a project management tool that allows you to ensure a quality project build through-out the whole project lifecycle. It ensures a quality build for java projects that must follow a specific structure as well as pass multiple tests.

1. How can I run Unit Tests in a maven project using the specific phase?

You can run unit testing by isolating individual pieces of code to be tested on it’s own to verify that the code is working correctly and returning the accurate response.

You can run tests using JUnit.

1. What is the difference between Git and GitHub?

Git is a version control system that controls the management of changes to code and files. GitHub is a website where you can upload your Git repositories to a public library where others can collaberate. GitHub allows for a much better team experience and reminds me of google docs with the ability to collaborate seamlessly.

1. What is the difference between *git commit* and *git push*?

Git commit saves your staged changes to your local git repository.

Git push pushes your commited changes in your local git repo to GitHub or any other connected online repo.

1. Explain the command *git status*  
   *Git status displays which files are being tracked, currently staged, not tracked etc.*

*It provides details to the user of what branch they’re on and what repo. It’s also useful to see if your repo is up to date if it is connected to any online repos.*

1. Explain the command *git add*

*Git add tells git to begin tracking files and changes to the specified files / folder.*