Instructions to prepare the environment to follow this course

To follow all sessions of this course, it's necessary to prepare your development environment, installing some tools, libraries and the IDE to be used to create the applications.

It's import to note that all the described instructions below are simple steps, because each operating system has its own details to install some software. Because of that, it's necessary to follow the defined steps on each provided link, according to the operation system you're using.

1) Java Development Kit:

First of all, it is necessary to install the **Java Development Kit** (JDK), a set of applications and libraries necessary to develop applications in Java.

This course is based on **JDK 21 LTS**. It can be found through the following link.

To download it, you must accept the terms of the license, choose the operating system and its version. Note that some operating systems may have additional steps for configuring **JDK 21 LTS**.

Also install **Maven**, following the instructions in this link, according to your operating system.

2) NodeJS:

One of the console tools to be used in this course, the AWS CDK CLI, is based on NodeJS, so you need to install it on your operating system. To do this, go to this link, choose the latest **LTS** version available and follow the installation instructions according to your operating system.

Install the NodeJS, which already includes the NPM, downloading through this link. Download the latest LTS version, according to your operating system.

To check that the NodeJS was properly installed, execute the following command in a terminal:

```
$ node -v
```

This command will show the installed NodeJS version:

```
v18.14.0
```

To check the installed NPM version, execute the following command in a terminal:

```
$ npm -v
```

In the same way, this command will show the installed NPM version:

```
9.6.2
```

3) AWS CLI:

The AWS Command Line Interface, or AWS CLI, is a console tool from AWS to execute commands to manage resources in your AWS account.

Go to this link and download the AWS CLI installer, which should be at the upper right corner in this page. Download the latest version to your operating system.

At the end of the installation process, open a terminal and check the installed AWS CLI version, through this command:

```
aws --v
```

The output should be something such as this snippet:

```
aws-cli/2.9.22 Python/3.9.11 Darwin/22.2.0 exe/x86_64 prompt/off
```

4) AWS CDK:

The AWS Cloud Development Kit, or AWS CDK, will be used to build the code responsible to create the applications infrastructure using AWS services.

After the installation of the aforementioned packages above, execute the following command in a terminal, in your operating system, to install the AWS CDK:

```
$ npm install -g aws-cdk
```

After the installation process, check if the AWS CDK was properly installed, executing the following command:

```
$ cdk --version
```

The installed version

The output should be something such as this snippet:

```
2.114.1 (build 02bbb1d)
```

5) IntelliJ IDEA Community Edition:

To develop the applications that will be created in this course, it is necessary to install an integrated development environment, or as it is known by its acronym in English - IDE.

The IDE that will be used is **IntelliJ IDEA Community Edition**, from the JetBrains company. This is one of the most modern IDE for development in Java and other programming languages.

It can be found at the following address: https://www.jetbrains.com/idea/download

Download and install the version compatible with your operating system, following the instructions set out on the JetBrains website.

If you want to learn more about working with IntelliJ IDEA, there is an excellent set of tutorials: https://www.jetbrains.com/idea/documentation/

To generate the Docker image of the applications, it will be necessary to install a plugin within IntelliJ IDEA. To do this, open IntelliJ IDEA and go to the `Preferences` or `Settings` menu, depending on your operating system. On the screen that appears, locate the `Plugins` section and then the plugin named `Docker`, created by JetBrains. Repeat the process to install the plugin named `AWS ToolKit`.

6) Postman:

Postman is a free application very useful. With it, you can make requests to the developed applications during this course, if they are running on your development machine or deployed to your AWS account.

To download it, follow the instructions on this link.

With the Postman, is possible to organize the created requests in collections, by project or by some other context.

It's also possible to create a Postman account, to manage and share your collections with other Postman users. This can be used by a developer team.

7) Docker Desktop:

The Docker Desktop will be used to generate the Docker images of all applications that will be created along this course, before uploading the image itself to AWS.

To install it, go to this link.

There are alternatives to Linux users, as you can see in this link.

Docker Desktop alternative:

If it's not possible to install the Docker Desktop, by license issues, it's possible to install the minimal components of the Docker Engine, which are enough to follow this course, once it will be only necessary to generate the Docker images. The Docker Engine can be installed following the instructions from this link.

8) Artillery:

This will be a tool used during the load tests to be performed against the infrastructure we will create in this course. Execute the following command to install it:

```
$ npm install -g artillery
```

> **Additional instructions**
>
> Some additional instructions will be detailed later in this course, mainly about the AWS CLI and AWS CDK tools.