PROCINAL Technical Report

Alejandro Nuñez - anunezb@udistrital.edu.co
Miguel Sanabria – masanabriap@udistrital.edu.co

This is an application designed to allow the customers of a cinema to buy tickets and order food online, this is managed by creating an account on the application where you should login to do any transactions, besides that when logging the user can see all of his account information, history of purchases and manage the memberships and the perks that he has access to. All of this will be achieved by making an only CLI application, this means it won't have a dedicated front end or GUI, all of the application will be executed via console commands, this allow us to make a better backend that will be separated in two programming languages, parts of the code will be programmed on Java while other parts will be programmed on Python, letting us to take advantage of the benefits of these programming languages, for example the emphasis with the Oriented Object Programming that Java has, while also using the great portability of python or the ability to make easy and fast developed prototypes for an application.

While that is what conforms the backend of the application, the data management will be developed within a database management system, for that we choose PostgreSQL, because it has many advantages like the great scalability that allow us to configure PostgreSQL according to the specifications of each hardware, it has pgAdmin that is a graphical tool that will allow us to manage the database in an easy and intuitive way, also helping at the creation of SQL sequences and even make backups of database, something very important in case of some error on the database.

And lastly for the deployment we will be using Docker, it is a software that allows to deploy applications inside virtual containers, this allows that many applications work in different complex environments, even though the Docker and the virtual machines looks like the same thing and have the same purpose, the great difference between these two is that the Docker uses the Operative System of the host, while a virtual machine uses his own Operative System apart from the one of the host, this causes that the virtual machine uses so many resources from the host device compared to using Docker.

A docker container is a software package with all of the dependencies needed to run a specific application, all of the configuration and instructions to start or stop the containers are made by the docker image, the use of the docker containers saves the user to have to resolve possible compatibilities problems within systems, because with docker a software executes in the same way in every environment.

Docker works through these components, the docker client is the main component that allows to create, manage and execute applications in containers, is the main method to control the docker server through a CLI like the command prompt, the docker server is the one who waits the petitions made by the docker client and manage the images and

containers, the docker images are the ones who show the docker server the requirements to create a docker container, these images can be downloaded on websites like docker hub or is possible to create a custom one, lastly the docker log is an server side application that is used to save and share docker images, is very useful at the time to save images locally and having complete control over them.