

## **1º Execution:**

- Nothing specific.
- Open the game, press play, and have fun!

## **2º Tasks:**

- All the given tasks were completed.
- Reading some of the tasks made me feel little be unsure of what they were asking for, so I did what I believed it had to be done.
- I have added additional parts like two power-ups, enemies, art (Free to use by Kenney Vleugels) and some particles simulating stars on the background.

## **3º Encountered Problems and Solutions:**

- As we know, it's difficult to create an entire game with only 48 hours. Even more, if in that time you have additional things to do. However, given more time, I would love to continue and upgrade the project.
- It's always difficult when you are asked to compile a project for a specific device when you don't have it. I'm grateful that I could found the iPhone 5 resolution on the internet and work from there. But, you are always unsure if it can work on aspecific until you have tried it. For testing, I used my android phone, as I don't have another way to try it out.
- For saving data, usually, you create a more sophisticated solution as some people will try to modify it for cheating purposes. PlayerPrefs is a fast way to save data, like a high score. But, it's not always the best solution as it is less secure. However, given the proposed time, PlayerPrefs was the ideal solution for this.
- If you use only the bottom part of the device for moving the player, I'm sure the ship will only move on the x zone. If so, you can't give 100% randomization for our asteroids to spawn and move, because if it comes from below, the player will not have enough time for dodging it. The best way I have found is spawning the asteroids from the upside part of the device/camera and moving them down. Of course, I have given them a little randomization on the x, so they spawn in different places and with different angles.

- The object pool pattern has given me a very good result instead of creating/destroying things all the time. In the future, I will like to introduce the flyweight pattern with the scriptable objects as there will be a lot of bullets, asteroids, etc around the scene. So, saving and sharing some extracts of memory instead of creating them will be a fantastic optimization for this type of project. But, with the time I had, I preferred to focus on other parts.
- For this project, I haven't played with physics. All the bodies are kinematic. Sometimes I'm not sure when it is necessary to use physics or not. Could be cool if the asteroids could bounce then they collision with themselves. So, that could be an upgrade.

## **4° Unity Version:**

- Unity 2019.3.4f1.