Wrestling with the Unity

The Report

Sahar Niknam
Matrikelnummer: 971938

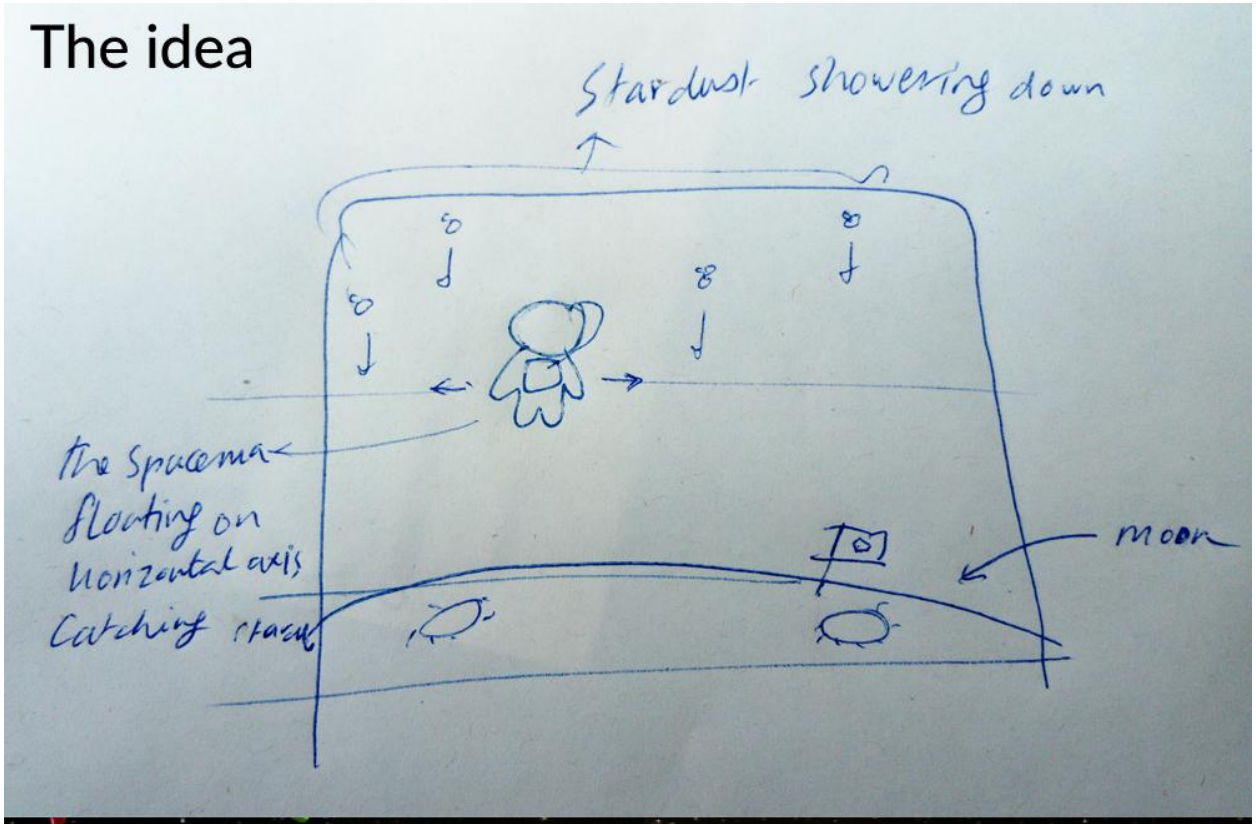
Acknowledgement and Introduction

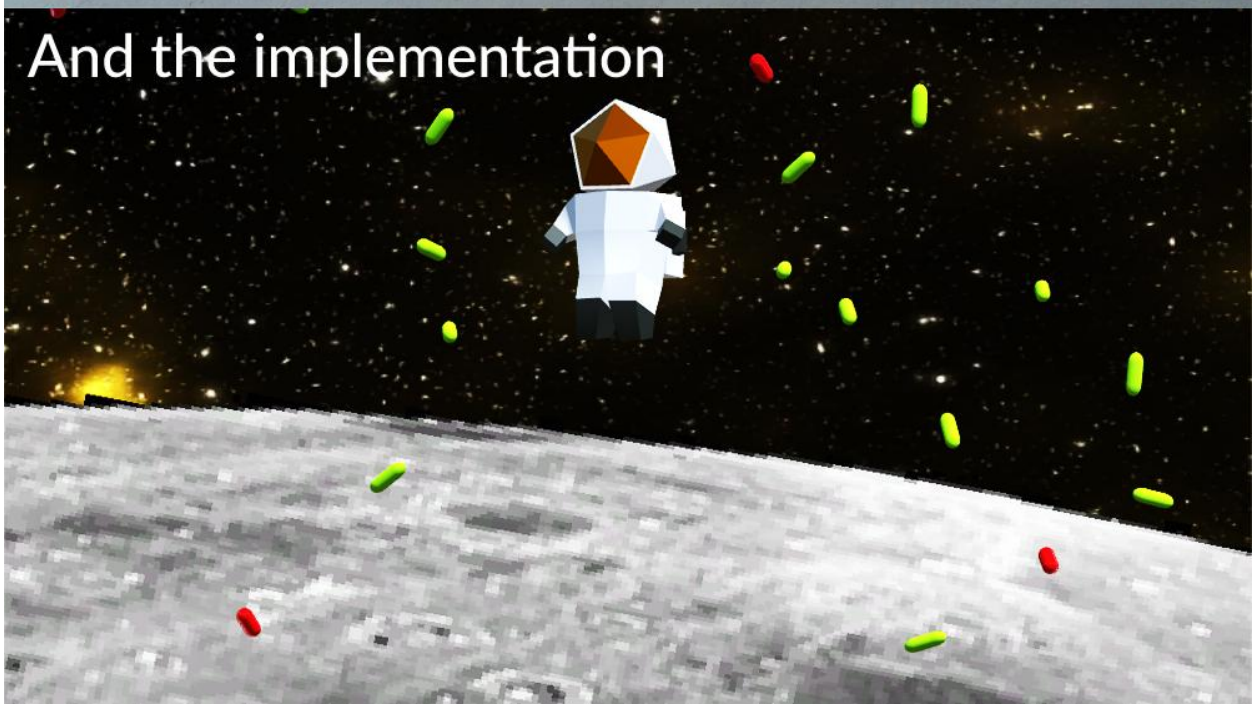
First of all, thank you very much for offering this course for those who are interested, either in a lively 4 ECST in AI module or genuinely in game development and VR. This opportunity is much appreciated by students in the cognitive science program.

The following pages are a report of my learning process and thoughts and ideas on working with the Unity game engine, including:

First Project

#Moon2024





First Project
#Moon2024

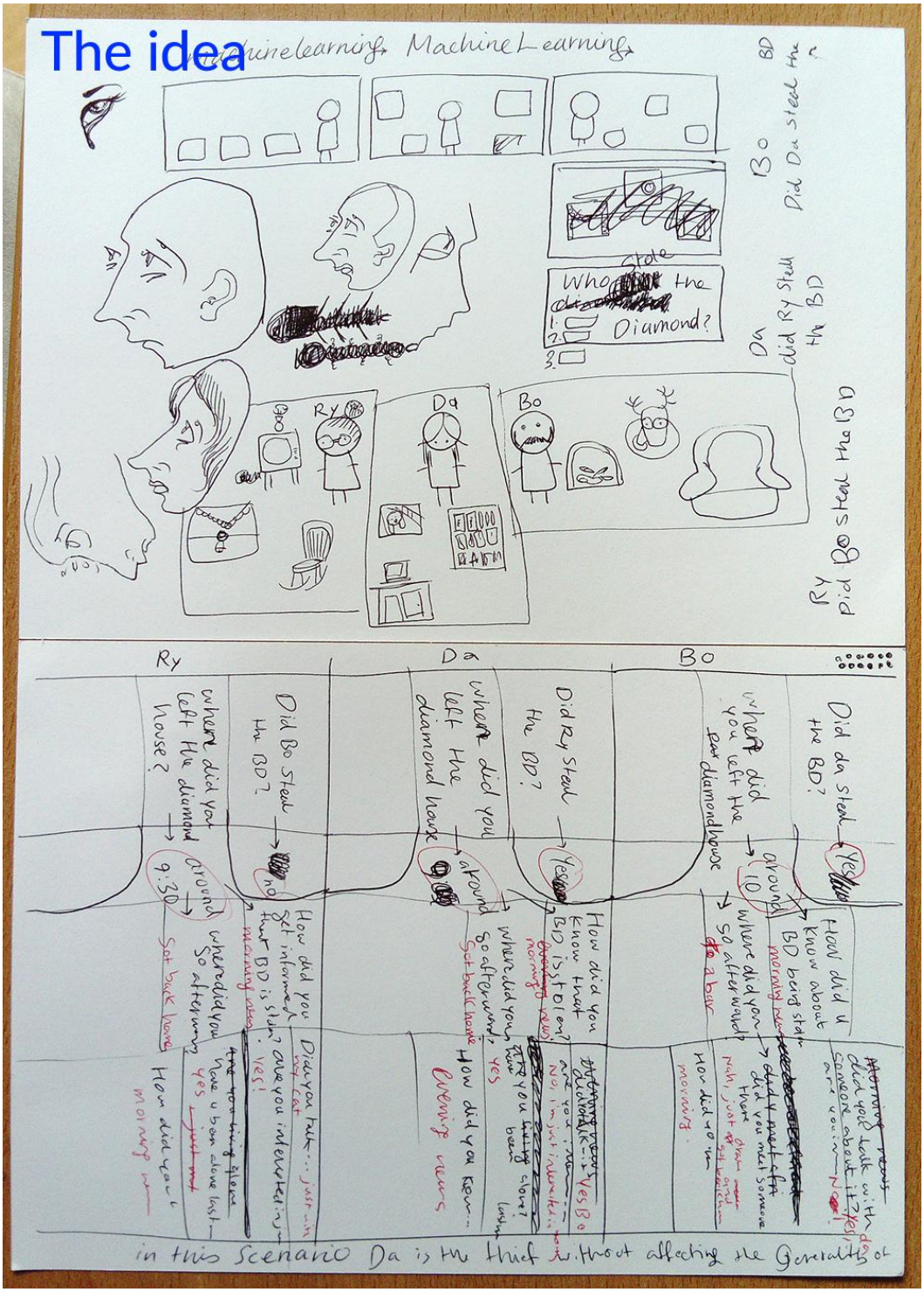
This project was the first time I dared to write a couple of lines of code instead of the usual copy-pasting the tutorials material; and it felt really good, though I was already comfortable with OOP, in a Pythonic way.

The whole coding thing, on my side, was to add two lines to the player imported code to change its position after a triggered collision in a conditioned direction based on the two available tags. And also handling the spawning problem by destroying them; my system was slow by then and disabling did not seem like the best idea.

Except the capsules, all the assets were imported and the whole scene was working in, by-then and to me, some magical ways. I also was cloudy, *inter alia*, about the sound source and the sound clip difference and the necessity of using both, the reason behind attaching objects to scripts in the *inspector* panel, while we already added the script component with a specific script to the same object, and also the scene was still a big mystery to me: what exactly is a scene and how we restrict it in this huge gray infinity.

Second Project

Tintin and The Blue




Remained Inquiries: 4
And the implementation
Wanna inspect the moose?
Yes
No
Remained Inquiries: 3
Remained Inquiries: 2
Tintin: How were you informed of The Blue being stolen?
Ry: Morning News, son.
Did you talk about it with someone else?
Do you have any special skills or interest in jewelry?

Second Project

Tintin and The Blue

For this project, unfortunately, I failed to work with the group. But, on the bright side, this project was the one that helped me quite a deal in demystifying Unity; a huge deal to be accurate.

The result of my efforts was a basic 2D game, which is available on my Github account, both the project (download zip) and the build.

Making this game helped me to finally conceptualize the big picture of the Unity game engine and to take a brief ride of the beast, while it was still looking at me with rage and distrust.

The main know-hows that I acquired doing this project include:

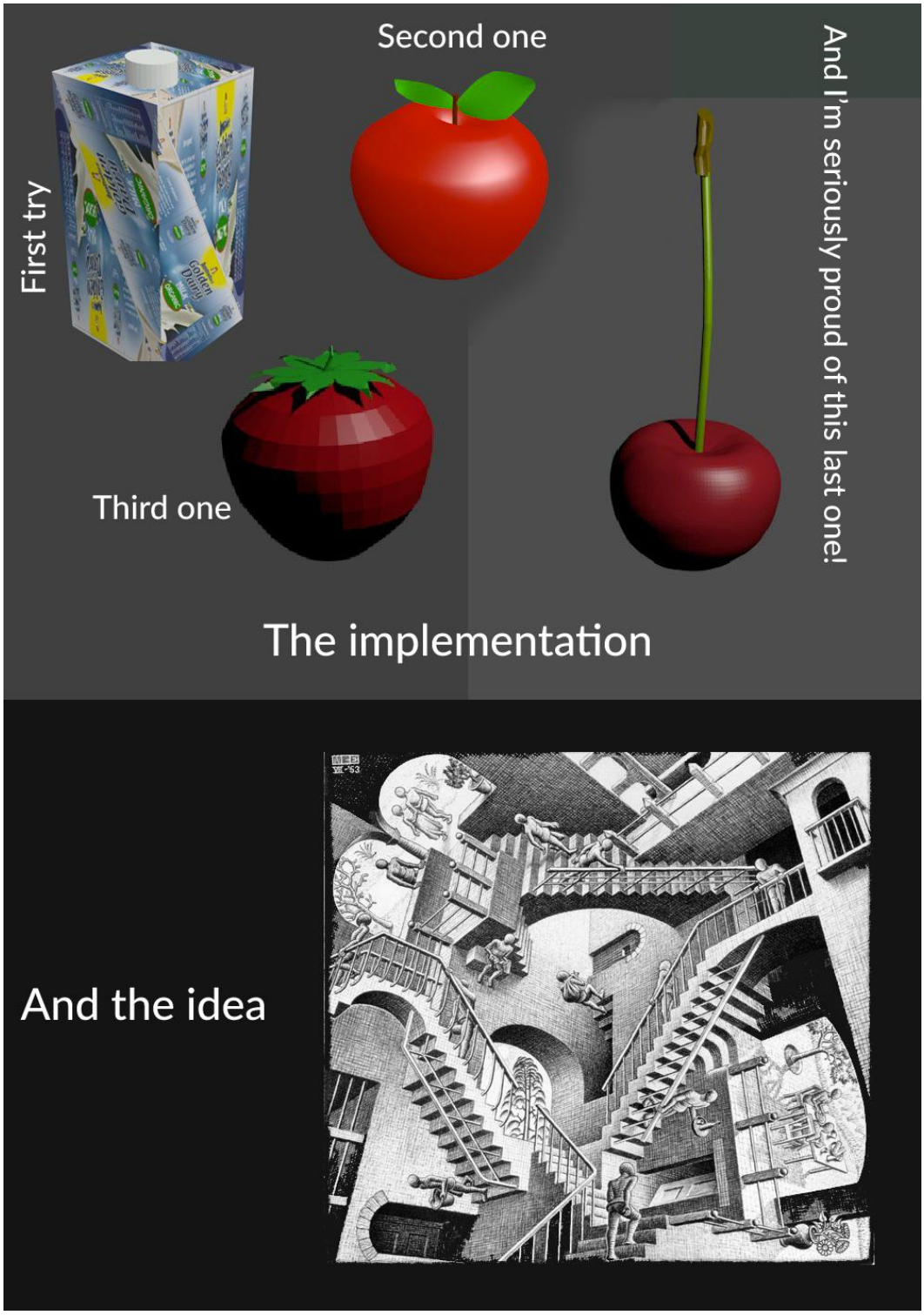
- Getting comfortable with coding in C#
  I also learned some cool tricks like making delays or running a function only once within the *Update* function and lame ones like working with *static* functions.
- Creating and switching between scenes
  Though, I still need to learn about managing the location that the player will appear in a previously visited scene, apparently using the *DontDestroyOnLoad* method.
- Working with sprites, creating animation, and working with the *animator* states
  As good as I remember, except for *The Blue*, the stolen diamond, all the assets used in this game were created by myself. Oh, and of course I downloaded the sound effects. [1]
- Creating a dialogue, in some sense, system
  I found it difficult to work with pre-designed, importable dialogue systems, and the tutorials were mostly long videos of some mumbling guys who were fidgeting with the UI panels about 85% of the time. On the other hand, I was a bit excited, maybe in an overestimating way, about how much I learned about C# and my dialogue tree was a binary with with only three levels. So I made-up a tree-coding system and a couple of functions to get rid of the repetitive procedures and wrote the code to handle the dialogues.

  It was painful.

[1] Speaking of sound effects, I finally realized the functions and difference between a sound source and a sound clip and I think it is stupid!

Third Project

Bakery Fun!



Third Project

Bakery Fun!

I had problems integrating with the group, therefore I found a sort of 'keep-yourself-busy-and-do-not-make-a-mess-with-the-whole-project-with-your-impractical-ideas' task to do. It was fun.

So my task was to model some 3D game objects, using *Blender*, a crazy software who decided that users will adapt to all those unjustified changes in each and every accustomed and popular features in a graphics software only because it is delightfully light and fully available for free download. I spent a painful amount of time learning basics but finally I learned the tricks to model stuff as good as I can draw them by hand.[2]

On the Unity side, I dug a bit deeper into MonoBehaviour class and its functions and methods, and came to this naïve idea that Unity is a huge mess, like people added features here and there, once in a while, in an ad hoc, patchy, fashion. And now it is too big and popular of an engine, so too late to do some integrational dustings. I feel like there are too many ways for doing a single task both via UI and scripts that are not always capable of working together consistently, like the case with buttons. Though, I am fully aware that this impression might be due to my little knowledge about the Unity and as we all know 'a little knowledge is a dangerous thing.'

On the VR side, first of all, it was very comforting for me to know that the whole VR thing is just adding a nice plugin to the Unity and working in FPS mode and I don't need to tame another monstrous boss[3] software. But what I've found extremely intriguing was something you mentioned during one of our early VR sessions about the transition problem. You said that one trick is a 'fade to black' and it seems like brain does not notice the gap. And I started a mini-research on the possible ways of, so to say, 'brain hack.' Since it's VR it should be focused on vision, and hearing; and perhaps a slight boost using the controllers vibration.[4] Then I decided to work on visual illusions, or to be specific, create a 3D version of Escher's *Relativity* picture for the poor player to walk in.[5] It is an on-going project under the 'Experimental Design in Unity/VR' course.

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[2] Disclaimer: I may or may not be good at drawing. But my point is that if I cannot make a good model now, it would be the result of my visual literacy failure.

[3] Though, 'not being eaten by' would be the honest alternative for the word 'tame' I just used.

[4] I wish we could, just mildly, electroshock people using controller only to let them believe in their actions 'consequences' while living in VR or, at least, to remind them of some physical limitations, for, say, not going through the walls.

[5] Although, it is still like a front-end hacking, while the fade-in-black trick was a back-end one. I am sure there are / and still searching for more ways of back-end hacking of brain.