# Evaluation of the Project TriWizardTurmoil for the course Introduction to Unity

Laura Hellmann, *UOS*, and Melissa Jansen, *UOS*.

**Index Terms**—Unity, RPG, Evaluation, TriWizardTurmoil.

## 1 Introduction

In this file, we would like to not only critically evaluate our project "TriWizardTurmoil", but also document the process of how the project was brought about and the hardships we faced . What we expect from this is to contextualize our project with the help of providing depth by giving background information concerning our thought and working process. For this reason, the points we would like to cover are aspects that range from major dissatisfaction to minor improvement points.

## 2 Evaluation

### 2.1 Appearance of the Game

One of the most important points concerning the scenery is the fact that it is a rather empty space. Apart from the labyrinth itself, there is only a plane representing the starting panel, as well as a terrain that we have worked on with a heightmap to create the illusion of a mountain range in the distance. Concerning the latter, it is even the case that it has no graphics applied, which is why it displays a strange-looking alpha channel feature. Since we applied dense fog to the scene, this doubt can be disregarded, though.
What could be improved in this context - in order to create a more lively sceneview -, is to recreate the dark forest to one side or to put a replica of the Hogwarts Castle on a mountain in the far back. Not only would this fit our demands better, it might even serve as an additional orientative feature in the game. Since there are no (free) assets that replicate the look of the Hogwarts Castle - or any castle that might fit the graphics of our game - we were not able to put this into practice and building a silhouette version of the castle on our own was not an option, either. To break a lance for the game environment, though, it is to say that the scenery, coupled with the music, lighting, and skybox, creates a fitting eerie atmosphere that we have tried to create for the game!
A very trivial, but nevertheless important point is the fact that the labyrinth is quite narrow and angled which makes movement hard at times. Up to a certain extent, we were able to manage this by choosing a different way to generate the maze layout that brought us from manually hardcoding the entire maze layout to manually providing building blocks that are put into the game randomly. As such, we were able to put a lot more effort into creating real paths and not just agglomerations of random blocks on the game field.

### 2.2 Functional Extras

But it is not only the game's appearance that we are eager to improve even after the submission of the project, it is also the implementation of many items that we would like to functionally include, but did not for the sake of time. One of these items that we thought of would be a time turner, as Hermoine possesses it in the movie which would enable the player to postpone the moving of the walls just a bit. This could especially help when the player's exhaustion value (a value scaling the damage that the player is taking with a high value meaning proportionally higher damage) is directly tied to the number of maze changes that have already happened. Postponing the changing of the maze's walls can then not only help in case one already sees the trophy, but also when the current health value is lacking essential survival points.
Additionally, a wand could be an item enabling the player to not only take damage but fight back or maybe enhance the own power resources when combatting. Despite preserving energy, there can also be other items. An invisibility cloak, for example, might cause a hunting enemy to lose track which can be a tremendous advantage when lacking energy or being close to the trophy, while Felix Felicis could, when being used, give a hint which way to take in order to reach the goal as soon as possible. This could be put into practice by creating a "virtual" agent with the help of the NavMeshAI package that would calculate the shortest path from any point on the field.
Lastly, introducing a wider variety of enemies would give the game more thrill, since they would allow us to introduce different damage levels - some that the character can handle with ease, but also some that might be difficult to put off. As such, apart from the wizard, there could be an orc that - due to orcs being known for mediocre thoughtfulness - would not cause as much damage as the wizard does. And lastly, since it is a game placed in the Harry Potter world, a Voldemort enemy should not be omitted in that case - maybe with the twist that Voldemort cannot cause any damage, but makes playing the game a little tedious by always getting in the way.

### 2.3 Additional Dialogue

Apart from improving the environment and introducing some more game logic, we would like to enhance the amount of interaction that comes from the game by adding more UIs that provide information, adding a health bar to the game that displays how much energy the character has left, as well as introducing information plates with characters from the Harry Potter universe. These plates could display Dumbledore with the info that an enemy is coming close and the player has to move away quickly, or Hagrid commenting something else.

## 3 Challenges - Time

Time was a very prominent problem when working on the project as we had a lot of ideas that we wanted to put into the game in order to make it more interesting and meet our own expectations. As such, we sometimes spent a little too much time figuring out implementation details of something that we had to cross out in the end while we could have put more effort in things like graphics and building the environment in a way that we envisioned. Apart from time issues in and of themselves, the movement was a hardship that contributed heavily to the building time pressure. We have decided on implementing two different kinds of movement that we still wanted to bring into the same game scene until the very end when we realized that they were irreconcilable. From that moment on, we built two identical scenes with just one difference, namely the player type that was entered in each one. Apart from the organizational part, we also had problems implementing the movement in the narrow maze at all, since it often happened that the third person player did not adhere to the keys that we pressed.
The last - and certainly most stressing - challenge we faced was the problem of accessibility. On the device that the program was initially built, we were unable to compress the folder in .zip format which was necessary for the transfer between devices, as when downloading it from gitHub, all references got lost and the scene crashed entirely. In order to finish the project, we then skipped the step of zipping the files, since this did not work at all and transferred the data back and forth via a USB drive - again, increasing the time pressure.

## 4 Taking Distance

Instead of trying to formulate a good old-fashioned, boring conclusion, we would like to take a step back. During the making of this project, it happened quite a bit that we ran into problems and time issues - and, with that, the coffee machine. As a result, we were not able to implement all the ideas that we had, simply because there was a large need of looking up information and watching tutorials, the scripts of which still needed to be adjusted to our needs.
Nevertheless, we were able to not only implement the most important functionalities, but also some bits of the to do list we deemed impossible to incorporate. This is due to the fact that we managed to learn a lot, found fitting resources that we could easily use, and, most importantly, developed an understanding of how Unity works. As such, we were able to come up with our own workarounds and did not need online bug fixing research all too frequently anymore. From being total beginners with Unity, we gained not only motivation, but also knowledge about how to work with Unity which we value and which we hope is reflected by the project we hand in.
In the end, our evaluation is not only an evaluation of what we did, but also what we acquired and, after all, there is lots of time left to introduce these improvements now, an occupation that we are looking forward to.