Universitat de Girona
Escola Politècnica Superior

FINAL DEGREE PROJECT

Title:

WAVA: Design and development of a cinematic 2D puzzle-platformer game

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Studies: **Design and Development of Video Games**
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1. Introduction

In recent years, the video game industry has experienced a resurgence of cinematic 2D puzzle-platformer games. These games are often characterised by their short playtime, simple mechanics and a powerful ambience. In spite of the absence of dialogue or text, these types of games tell a complete and understandable story with a profound message. Some notable titles may include *Another World* (1991) and, more recently, *Limbo* (2010), *Inside* (2016) or *Gris* (2018).

The game that will be developed for this project is called WAVA. It is a game that explores a very common and relatable topic: finding our place, whether it is physically or mentally. This message is transmitted through the game loop, which consists in reaching the end of each level by defeating certain setbacks and getting knowledge from them, thus enabling us to go on further. In addition, by using different elements of design such as composition, weather or colour, the game emphasises the main character's feelings.

Figure 1. Logo of WAVA

2. Objectives

The main purpose of this project is to fully develop a cinematic 2D game with puzzle and platforming elements. In the same manner as other similar games, this project intends to transmit a profound message, more precisely about overcoming our own problems and finding our place, with its design and unique aesthetic.

More specifically, the objectives set for this project include, but are not limited to:

- Deepening the knowledge already acquired about the game engine Unity and the programming language C#.
- Implement game mechanics that reinforce the story and the message transmitted by the game.
- Design an atmospheric environment that is captivating, unique and reinforces the game's predominant topics.
- Create different animations for the character and other assets that give the game a certain smoothness and fluidity.

3. Design

3.1. Narrative
WAVA's story mainly explores themes of finding our place and learning from our setbacks and problems. Topics of family and friendship are also discussed by using the relationship between the two main characters, the Mind and the Light, who work together as a dyad that represents the human mind and soul.

The narrative is structured across six different chapters with mostly weather related titles. The state of the weather in each chapter is a direct representation of the character's mood. The chapters follow a loop pattern and transition seamlessly from one to the other. The game begins with a vague question, which is contextualised and completed right at the end of the game. Therefore, it is finished, like our characters' journey. After the story is completed and the credits are shown, the game loops fluidly back to the main menu, which is located in the first zone of the game, characterised by its rainy weather. This cycle mimics a person's cycle of trial and error until they find their definitive place.

3.2. Art
The general art style chosen for the game can be described as minimalist and geometric. All the different game assets have very simple and basic shapes and are painted with a flat colour, except for the more important entities, which have a slight gradient. The colours chosen play a huge role into the artistic aspect of the game. Everything is blue-toned, black or white, including one of the main characters, the Mind. The only entity that has a different and unique colour is the other protagonist, the Light, which is painted yellow in order to distinguish it easily in the final chapter.

The main animations were done in Inkscape by using the technique of spritesheet animation. Each animation has a different number of frames depending on its complexity. Other simpler animations were achieved by simply moving the GameObjects via Unity's co-routines.

3.3. Gameplay
The general gameplay of WAVA is very tied to its narrative and, like other cinematic puzzle-platformers, it follows a very simple and easy to understand game loop. In our case, this loop consists of defeating the Setbacks by protecting yourself, pick up the Knowledge they leave behind and, with this Knowledge, build auxiliary platforms that allow the character to go further and advance to the next level.

The game's movement and view is two-dimensional, using a side-scrolling format for the camera. The action is viewed from a side-view camera angle that smoothly follows the player with a slight horizontal and vertical offset, incrementing the view of what's in front and on top of the main character. There is only one difficulty level, which has been tested in order to be accessible for all players, no matter their level of expertise.
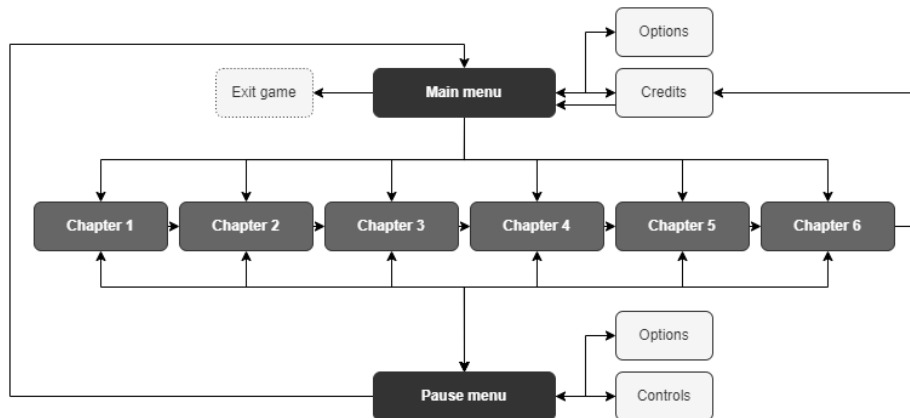
4. Implementation
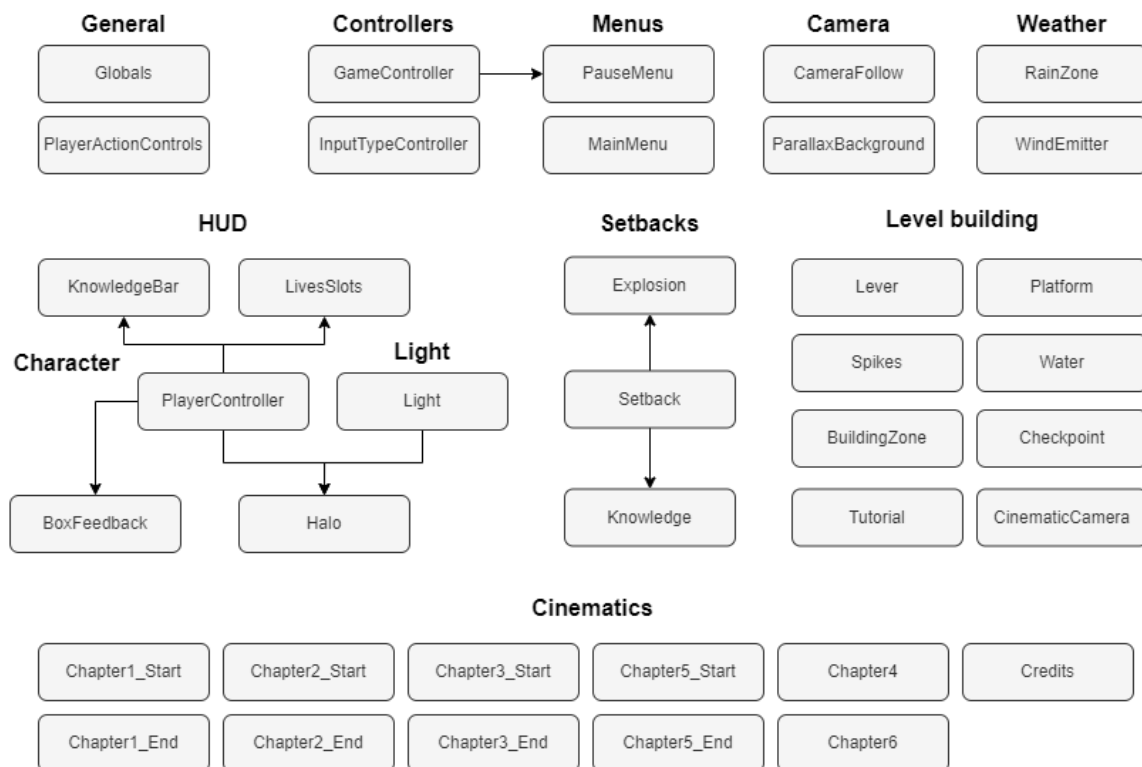

Figure 2. Scene structure

Figure 3. Class diagram and structure

5. Results

We can determine that all the objectives proposed at the start of this project have been reached and exceeded, since there are several mechanics and cinematics that were not expected to be developed for this final degree project.

Figure 4. In-game screenshot of Chapter 1

Figure 5. In-game screenshot of Chapter 3

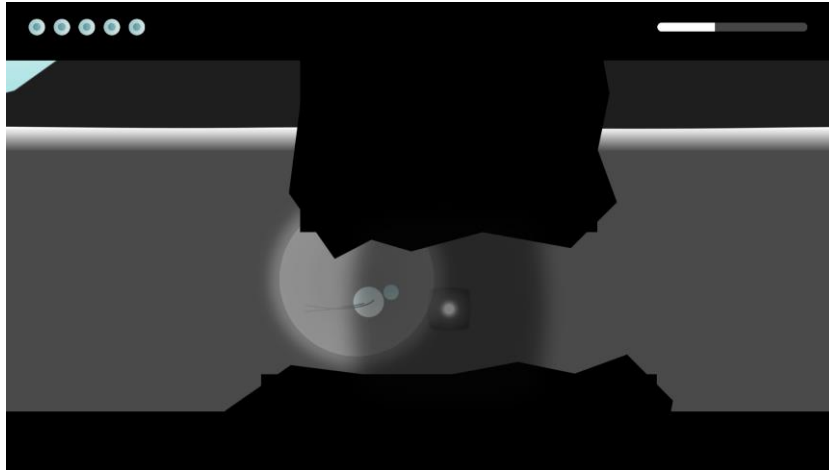**Figure 6.** In-game screenshot of Chapter 4
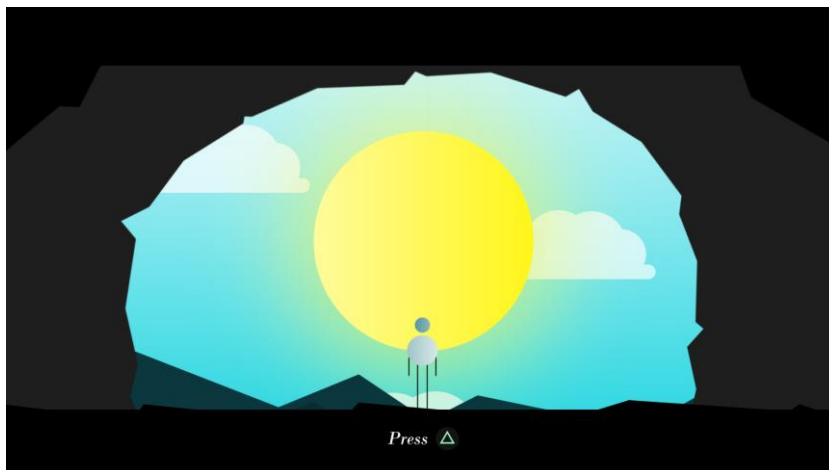
Figure 7. In-game screenshot of Chapter 5

Figure 8. In-game screenshot of Chapter 6

6. Conclusions

We are very pleased with all the tools and resources used to develop this project, including software and hardware, since they all have done their job perfectly without supposing any real economic cost. Even though we feel the final outcome of the game is very polished and nearly final, we are very passionate about this project and want to keep developing several aspects of it in order to improve the overall experience.

In conclusion, we are very pleased with the final product and we believe that it has been the perfect culmination to our university tenure. Much like in WAVA, a new chapter begins and it is time to find our own place in the video game industry, which is one that requires hard work, dedication and, above all things, passion for what we create.