

INSTITUTO POLITÉCNICO DE VIANA DO CASTELO
ESCOLA SUPERIOR DE TECNOLOGIA E GESTÃO

ENGENHARIA INFORMÁTICA

Tecnologias Multimédia

2022/2023

Labirinto 3D – O Jogo

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9 de junho de 2023

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Introduction

For the Curricular Unit of Multimedia Technologies, the student was proposed to explore the design of games through the Unity platform. With this practical work it is intended that the student develop skills in game design using C# in the creation of 3D games.

At the end of this practical work, the student must deliver a unique game that contains several levels and its own implementations that change the gameplay in order to make the developed game unique.

Game rules

The aim of the game is to collect Pink Capsule pills. Each pill gives a point. To pass to the next level the Player has to collect all available pills on the level.

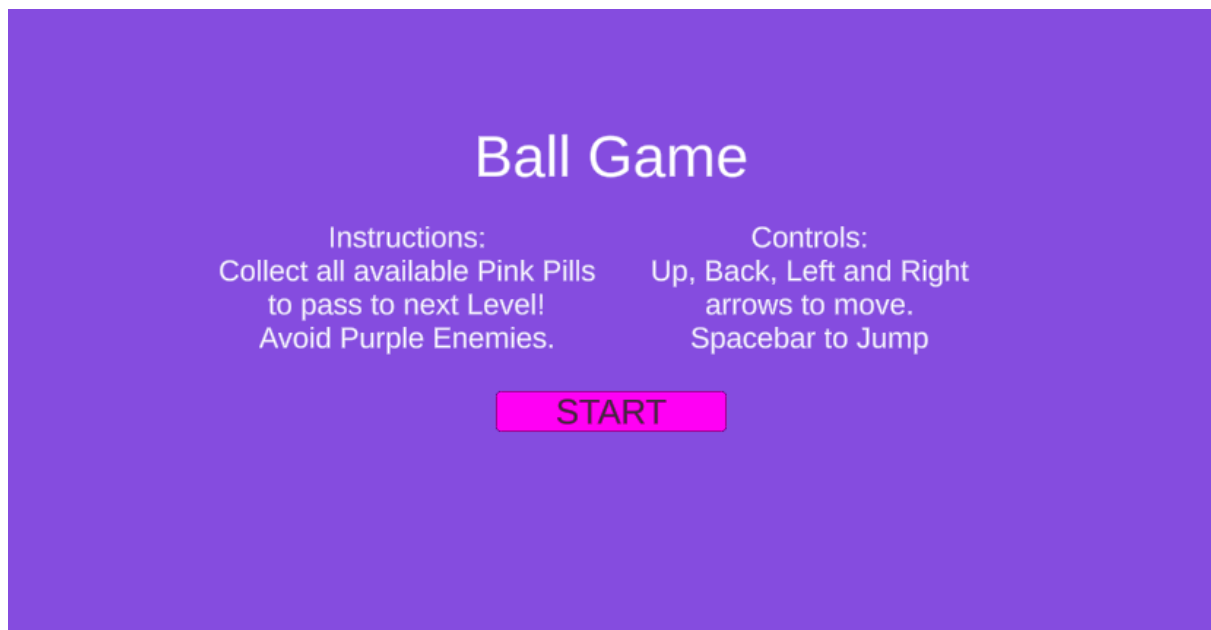
Contrary to pink pills, the Purple Enemies subtract a life point from the Player in event of a collision. The Player is given 3 Health points at the beginning of each level. In case the Health points drop to 0 the game is considered lost.

Game Controls

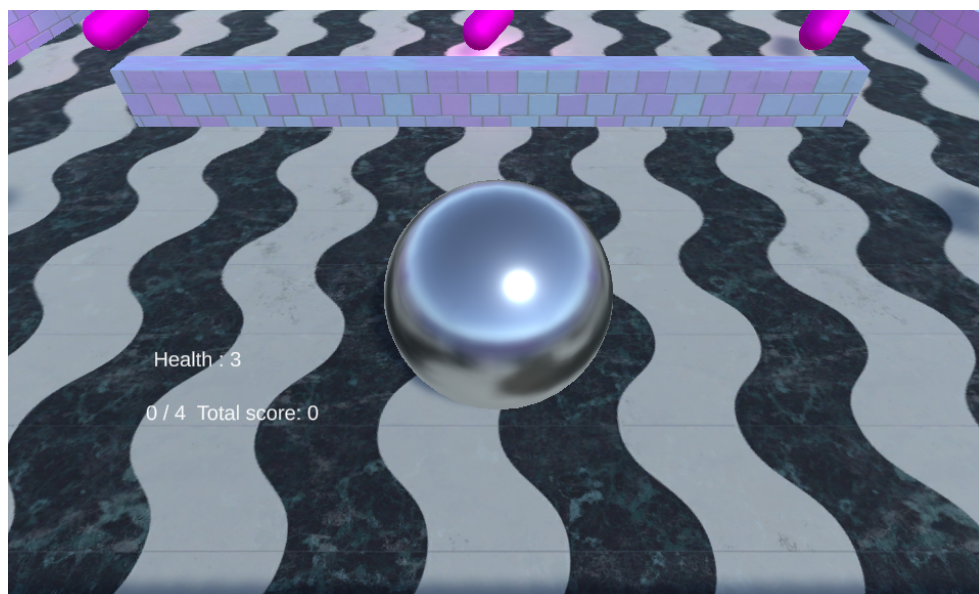
The Player is moved on the ground with Up, Down, Left, Right arrows buttons and performs a jump by pressing Spacebar.

Game Play

The game starts with an opening screen containing Instructions and Controls explanations, and a Start button. Level 1 is opened upon the press on the Start button.

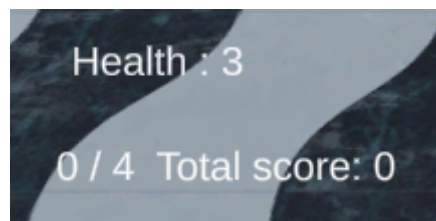


Level 1

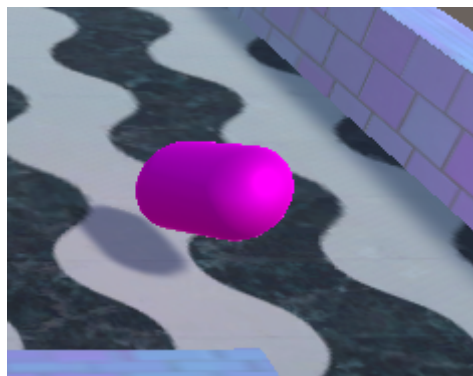


The Player is the chrome ball.

On a regular level screen the User Interface displays Health points, Collected points out of total collectibles available in the level and , finally, the total score collected throughout the levels.



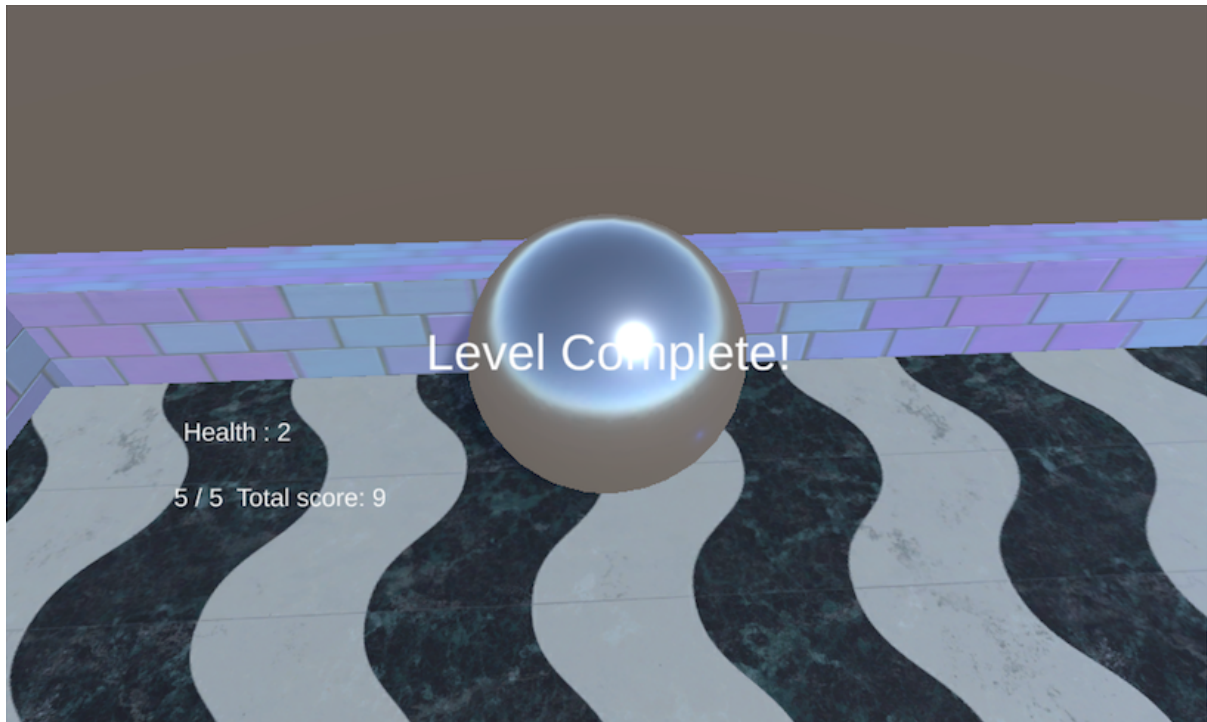
The Pink rotating pills are the collectibles that add points to the score. An uplifting sound is played when Player collides with the pill.



The Purple Enemies are the cylinders that subtract health points. An alarming tune is played when Player and Enemy collide. One Health point is subtracted.

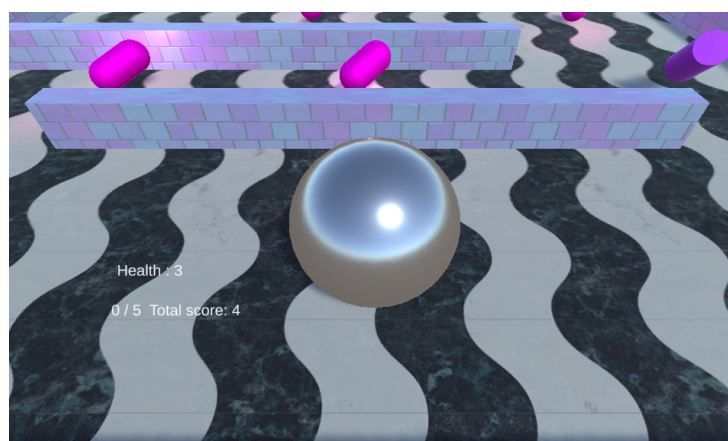


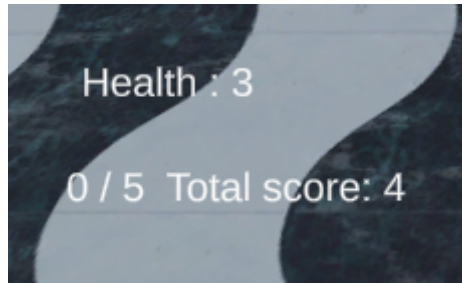
The Level is considered completed when the Player manages to collect all available Pink pills. In this case, Level Completed text appears and an uplifting sound is played to signal the completion of the level task.



Level 2

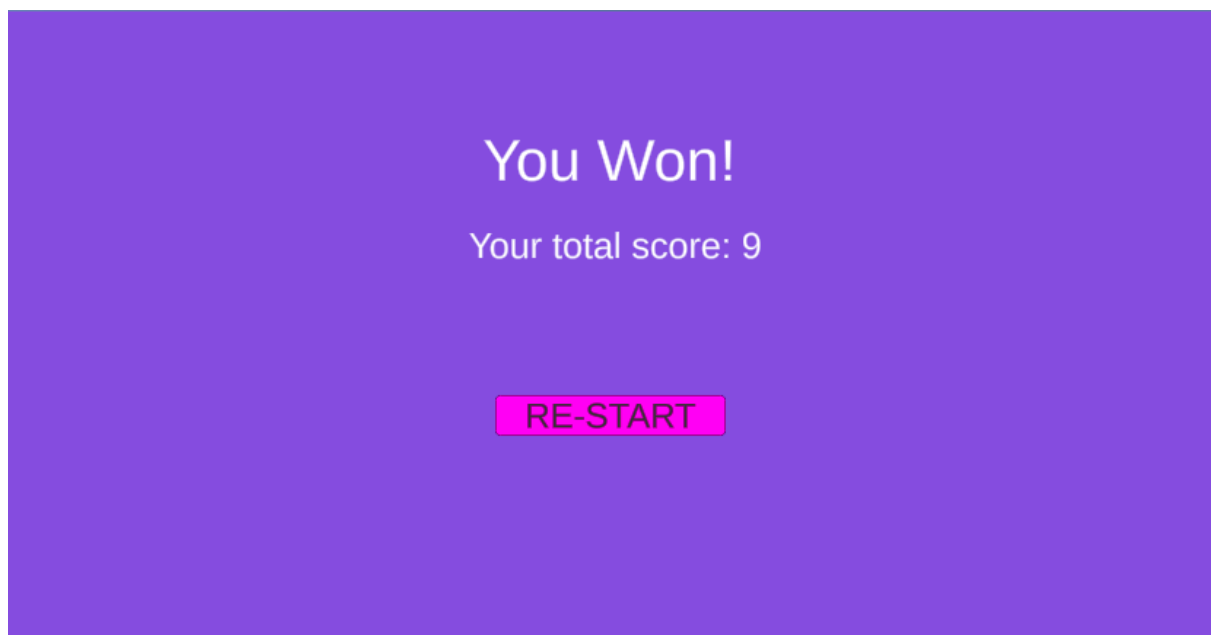
Next the screen updated to the next level. Important note is that the score of previous level is saved in the Total score variable and is displayed throughout the game.





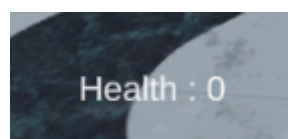
Winning screen

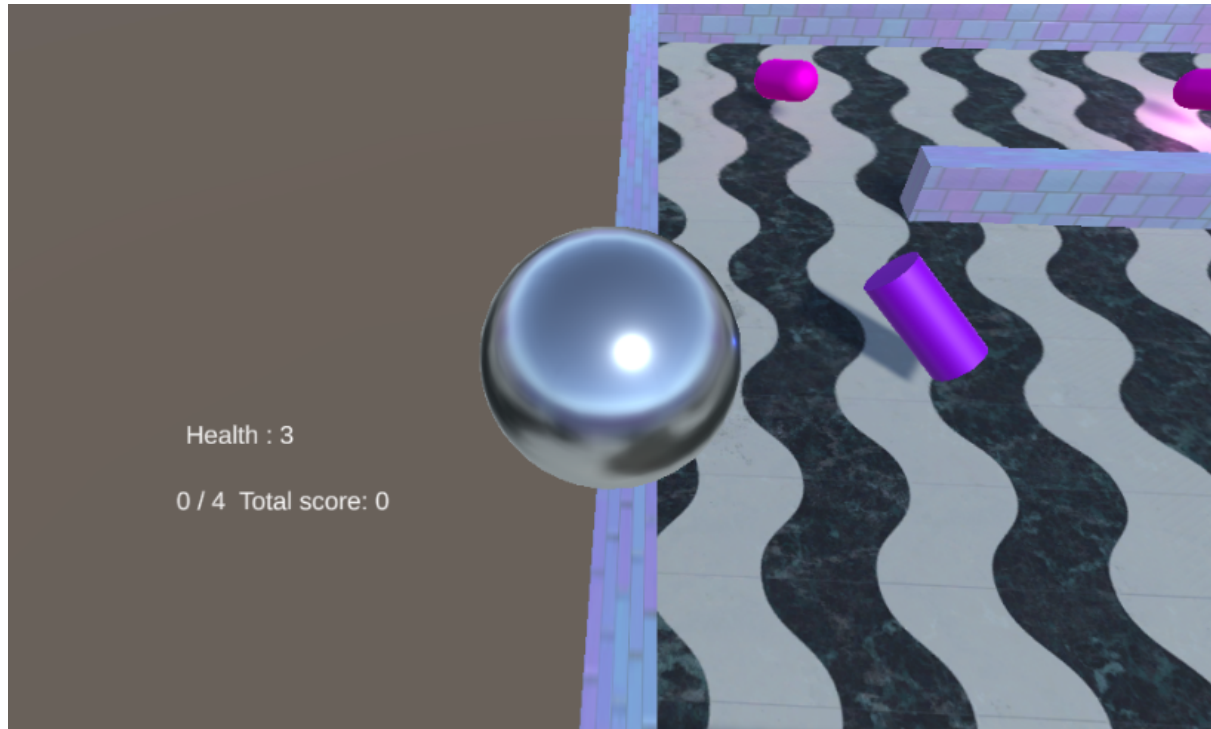
In case of success a “ You won!” screen is displayed accompanied with an uplifting sound. This screen shows the total score collected during this game.



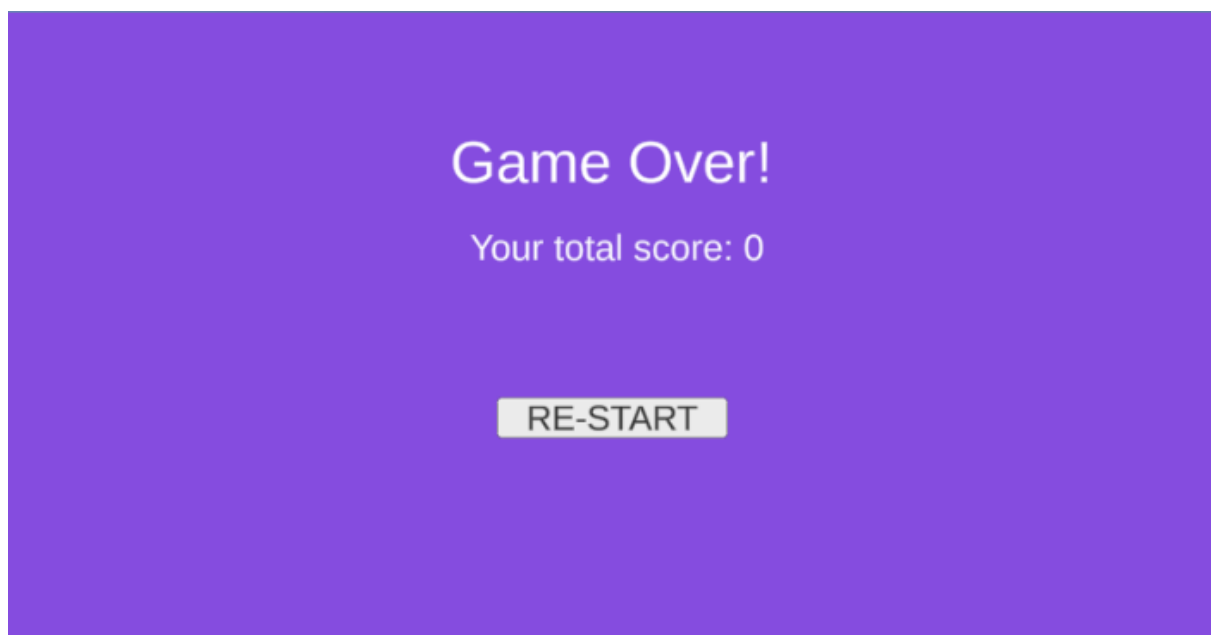
Game over screen

In case the Player runs out of Health points or manages to over jump the platform walls and falls down, the game is considered over.





The screen changes to Game Over. A corresponding music is played. The total scored points are displayed. As well as a Restart button. By pressing it the user is redirected to the beginning of the game on level 1.



Conclusion

With the development of this practical work, knowledge and skills were acquired in building games on the Unity engine.

With the means of Unity engine's mechanics and scripting, which served as the basis for the construction of the 3D game, certain skills and knowledge of methodologies were acquired, resulting in a game. User input, an interface and a scenario in which different GameObjects interact with each other were developed for this game.

The development of this game was shared on the GitHub platform via link: <https://github.com/onzzzzz/TP2--31025>; and placed online via the link: <https://ninawoz.itch.io/game-tp2-31025>

We may conclude that the objectives with the realization of this game were achieved and may provide an understanding about game development with Unity engine.