Technical Details

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1 Short summary of the resulting game

The game that I built during the summer is a Pacman clone made to fulfill the requirements of 1DV437. Nothing major changed from Submission 1 except the camera placement and the transition between levels. The way I completed the final version is by watching tutorials and implementing the code in such way that works. References of the tutorials I used are down bellow.

2 Design and implementation

2.1 Architecture

The lowest point of my implementation is the architecture, from a technical point of view it is called Ad-Hoc Architecture meaning my classes are tightly coupled. The reason for this is that the project is small and I had no time for a quality implementation.

2.2 Design patterns

The one design pattern I used is the singleton pattern in the class GameManager. The reason for its usage was to make sure only one instance of a game manager is spawned to have a way to share the state of it and achieve proper respawning of the player and enemies.

2.3 Collisions and geometry

The components for collisions that are used in my game are circle colliders, box colliders and raycasts. The ghosts can move perpendicularly in the 2d plane and the ghosts can move only of the raycasts do not collide with the level pieces. The player when it collides with other game objects such as level pieces it stops, with pills and ghosts a trigger is activated.

2.4 Textures and sprites

My sprites are found in the Sprites folder and are png and jpg files that I downloaded from the internet from the tutorials I used and from free repositories. What changed from Submission 1 is that in the end I did not create any assets myself.

2.5 Animations

The animation lecture was very technical and my animations are less so as the animation editor in unity is made to be very simple. My animations are made from putting sprites at key frames and looping the animation.

3 Discussion and reflection

After the feedback for Submission 1 I added a High-score menu with the ranking based on time completion. Background music and menu music was added and it can be controlled individually. An extra feature from the game is an Easter egg that I added, if you type secret in the game scene the sprites for the ghosts change to corona sprites. This was the extra feature I added to satisfy the feedback.

The most difficult part was after transitioning from tutorials[1] [2] to free coding. I have had bugs to solve with the scoreboard, audio control, respawining, editor bugs on linux, and sprite import problems.

Future work is polishing the art-style, fixing more bugs and adding more functionality to the game.

I managed to build the game for windows and for linux on various unity versions so I hope there will be no build problems. Submission 2 is Andrei Neagu's Pacman and submission 3 is Submission 3 Technical Details. The link for the project is here `https://github.com/neaguandrei101/1DV437`

References

[1] "Pacman tutorial." https://www.education-ecosystem.com/shieldgenerator7/RL7zy-how-to-create-pacman-game-unity-c/. Accessed: 2020-09-04.

[2] "High score table tutorial." https://www.youtube.com/watch?v=iAbaqGYdnyI&t=8s. Accessed: 2020-09-04.