

Astronaut Adventure

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We add some functions to the basic game, including a second level, the recovery function, a more beautiful interface, audio, double jump and the exit function

The name of this game is *Astronaut Adventure* because the background of this game is that an astronaut is wandering in the universe (we found a resource based on an astronaut), and he needs to find the portal to get back to the spacecraft. In the first level, there are many obstacles on his way to the portal, and in the second level, the astronaut has to avoid the big stones and spikes. The first level is like *Super Mario Bros* and the second level is like *Flappy Bird*.

The core of the first level is the rational placement of the pedal and its up and down movement, the player needs to jump through the pedal by jumping. There are probably three parts, the first part is horizontal, there are multiple routes to pass; the second part is down, the intention is to create a sense of weightlessness, causing the player's tension and stimulation, so this part will be more lengthy; the third part it is rising, and in order to simplify the game, more long pedals are used.

The main technical points are:

1. Repeated up and down movement of the pedal, using the periodicity of the trigonometric function, such as `Mathf.Cos()`.
2. Let the lens follow the player smoothly, using the interpolation technique of `Mathf.Lerp()`.
3. Two jumps can be achieved, the second jump is based on the first jump, and the parameters of the two jumps are adjusted.

In the second level, you can press up arrow whenever you want to 'jump', and once you collide with a stone or a spike, you will die. It is just like *Flappy Bird*, but the obstacles are more difficult to get across in this game. We adjust some variables such as gravity, linear drag and angular drag to make

the effect more real and smooth.

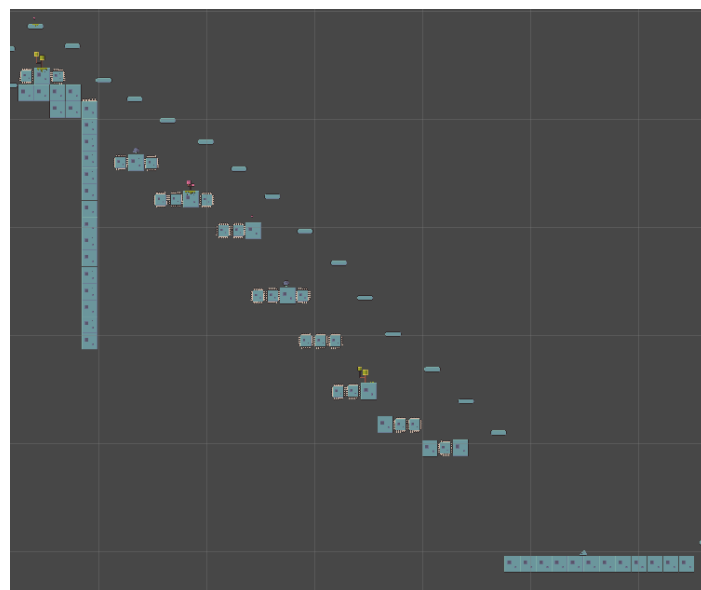
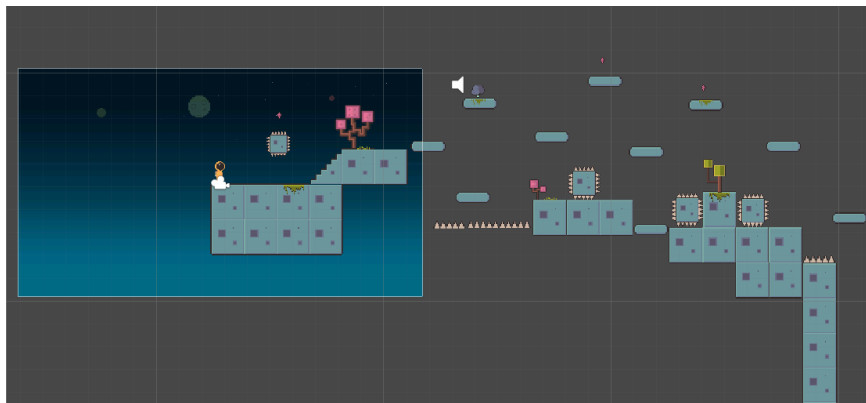
During we developing this game, there are also many difficulties. For example, it is hard to set the degree of difficulty. It costs us a lot of time to adjust the difficulty of this game. After many attempts, we reach this final version. Another problem is to add exit button to the game. We choose the plan that players can press esc during the game and they will back to the menu, and they can quit the game by clicking 'Exit' on the menu.

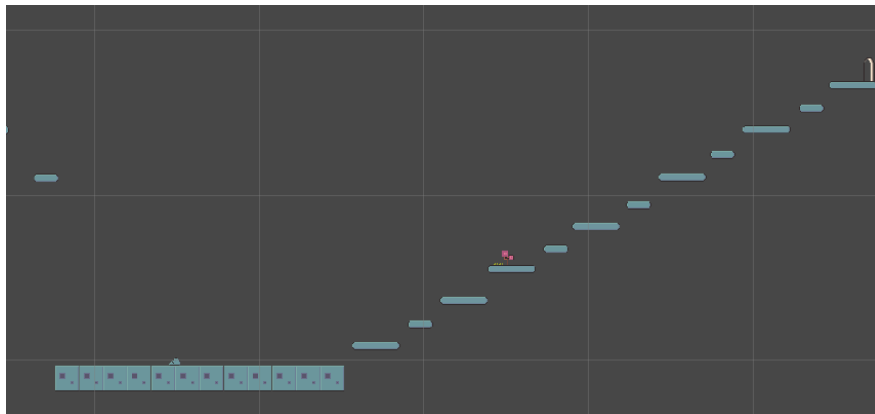
Our division of labour is as follow:

Yang Fuxiang : find the resource, develop the first level, add exit function, adjust the difficulty of the game.

Shi Jiyuan : develop the second level, add audio to the game, change the original pictures to the new ones.

the first level:





the second level:

