

Game Engines

Task 4



Evaluation

BEAT Stomper

Considering all the things I needed to achieve to create a mimic of the game, mine turned out rather well. The main hurdle was the massive amount of visual artefacts that needed to be implemented, which I could not create. I did manage to find and download the APK but when I took a good look at it, I could not make heads or tails of the code. It doesn't look like C#, nor Java, not any language I'm familiar with. There is also a peculiarly large number of script files. Assets were not included in the project folder, or at least, their file names and extensions weren't what you would expect an image or sound file to be saved as. With that being no help, I dove head first into one mother of a challenge.

The cube – whom I named Klay – initially would bounce the moment he landed back down on the platform. I needed him to land and stay put. It seemed that when two box colliders interact, they bounce off of each other, so I changed Klay's collider to a circle and the problem was solved.

The title and game screens would not function properly. I could not even change the text contents of the of the TextMeshPro object. After much mucking about, I decided to start from scratch as the code became an absolute mess. To fix these issues I had to use FindObjectByType and GameObject.Find methods to locate and fill the appropriate variables to thus manipulate the game objects, such as the title and game screens and practically everything else.

I had an issue with the camera snapping in place when Klay landed on a new platform – it moved upwards but rather suddenly. I used an IEnumerator method to have the camera move smoothly in position, and the platforms spawned and despawned just as planned.

The power up cube became a lightning bolt sprite to save time. My issue with this was that its collider was either not being triggered or there was simply something very wrong with the logic. I copy/pasted the code from the Platform script to the Jump Control script (i.e.: Klay's script) and it worked like a charm.

After getting the platforms to move left to right, Klay would not move along with them - he'd be sitting in the same location on the screen while the platform moved freely. I added code so that when he lands, he becomes a child of that platform. The immediate issue was that he'd become squashed according to the prefab's dimensions, so I added an empty to the prefab and made that the parent. Klay did not change size – good.

Another issue I had with the platforms was that Klay would often keep passing through them. I thought it was an issue with threads or which method was called first. Found out rather nonchalantly that his downward force was a tad too strong; I halved it and he stopped plunging to his death.

The power trip code refused to work. I first added upward force to Klay and even though he did shoot up as I had hoped I could not get him to move up in a straight line, so he'd land just about anywhere I needed him to land on the centre of the platform. I changed the camera's position to track Klay anyway but the code refused to run as expected. I eventually attempted to use the same code to move the camera up on Klay, changing it so that he shoots upwards, as well as have this exact same code on the camera – only the camera would move; Klay remained fixed to the platform he was already on. I had to compromise and add

a large '+20' on the game screen. The original BEAT Stomper inverts the colours when the power up is activated. After some research I found I had to add my own custom shader. Thankfully I found a ready-made one which was free to use and the creator insists they don't care for credit.

There's a small bug that I can't seem to fix: when Klay touches a power bolt (power cube + lightning bolt = language) the score should update with the correct amount but this sometimes doesn't happen immediately. The score would often update when Klay lands on the next platform. It's not game breaking; just annoying.

One final issue that was mostly a strange bug that would appear whenever it wanted to: the overlay colours would sometimes not change to the proper colours if you played a different level. That is, if you played the third level and were back at the title screen, and the randomiser picked the first level for you to play next, once you tap to start the game, the colours would remain the same as the last level you played. I changed the location of a small piece of code and this bug stopped appearing.

Funny thing about code is that I somehow managed to forget how to populate an array. Then I realised I needed a list instead. I also managed to constantly and persistently forget to add a semicolon. Debug.Log was my best friend the past two weeks.

All else considering, the main mechanic works well: jump up and slam down. The artefact spawner is a nice touch which I'm oddly proud of, but I was mostly excited when the music started playing as expected when the level starts. I tried to add a trail and particle effects whenever Klay hit something, but the trail refused to render for some reason and I could only manage a light shower of sparks anytime he landed – good enough. I knew I wasn't going to be able to mimic the original visually, which is why I added my own twist, and thus, the Cellout Edition was made – a tribute to one of my favourite bands.

What I didn't add, was an exit button, but then again the updated version of BEAT Stomper doesn't have one either.