# An Analysis of Game Design

A discussion on the design aspects of platformers

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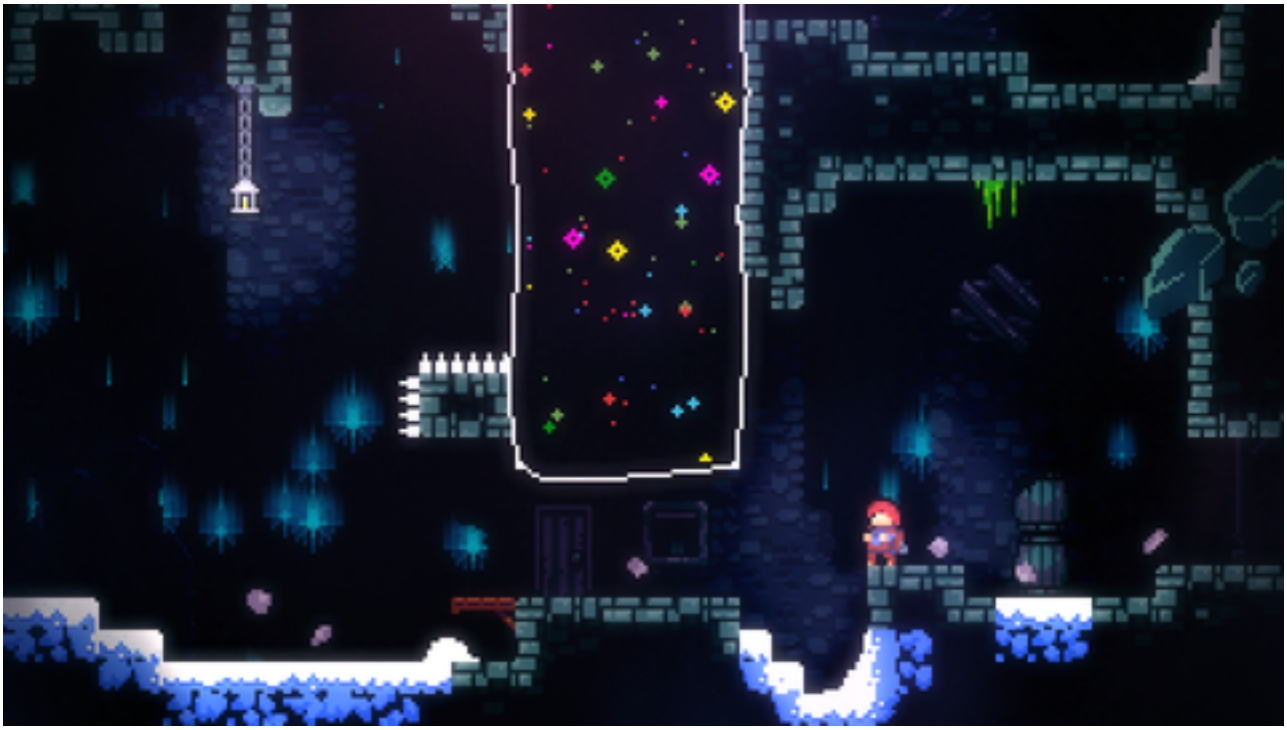
## Introduction

In October 1958, Physicist William Higinbotham created 'Tennis for two' which is thought to be the first ever video game. The idea was very simple: Two players on either side of the net adjust the angle of their shots and try to hit the ball over the net. Since then, more and more games were designed, some with very unique aspects to them, leading to the current day, where we have a vast ocean of games with tonnes of unique designs.

In this article, we'll be discussing some of the key design aspects of one specific genre, i.e., platformers.

# Platformers



Platformers are 2D, side-scrolling video games where the player controls one character. The objective of platformers is to reach set checkpoints in each level, usually indicating the end of that level.

## Examples

Classics like Super Mario Bros., Super Contra, Sonic the Hedgehog and Celeste illustrate the idea of platformers very clearly. We will use them as 'role-models' throughout our discussion.

## Structural Analysis

### Frequent Rewards

Platformers are usually designed with multiple levels (like in Super Mario Bros.). The idea behind multiple levels is to keep the player motivated to keep completing more and more levels. This reward system at small intervals is usually the safer and most commonly used method of designing platformers.

### Continuity

Straying slightly from the previous structure are games like Celeste, where the game is designed in a continuous manner. The rewards for completing 'levels' are placed relatively far apart. This kind of approach is usually backed with a very strong storyline to keep the player motivated instead of a frequent reward system. In Celeste, specifically, each 'scene' of the game itself is very challenging and hence sort of acts like a level in itself. Overcoming the challenge in each scene acts as an alternative to a level-by-level reward system even though no explicit reward is presented to the player. Along with this, Celeste is backed with a beautiful storyline that keeps the players more than just engaged.

### Rewarding with a high score

Apart from this, there are also infinite side-scrollers where the objective is to maximize your score. The motivation for the player to keep playing is to beat his/her own score each time or to beat scores of other players.

### Game Over

Most games have a very basic storyline to the least. The game usually ends

when the story comes to a conclusive end. The player usually completes the bigger objective that was known from the start (in most cases). For example, in Super Mario Bros., Mario wants to rescue Princess Peach. In Celeste, Madeline wants to climb to the top of a mountain. This sense of closure makes the player feel positive about the game and is possibly the safest strategy that game designers use in hopes that the player leaves positive reviews about the game and to make an overall good impression of the game.

As opposed to this, some designers like to make their video game open-ended. This is not a safe strategy at all as it can lead to dissatisfaction among the players. Then why make it open-ended at all? An open-ended game is, in most cases, backed with an absolutely great story/great gameplay. It works only when the game delivers enough to actually make the player think about the open ending. These kind of thoughts on the game are a sign of 'greatness of the game' in the video game community that all game designers aspire for. Note that the kind of open-endings we discussed are different from cliffhangers. An open-end is where the player is left uncertain as to what happened next. The player is never intended to know and the end is left open to interpretation. A cliffhanger, on the other hand is used to create a feeling of suspense, where the mystery element is known to be revealed in the future. This is usually done to create anticipation for the next video game in the series.

## Analysis of the game's elements

A games element include enemies/obstacles, power-ups and other things that the player can interact with. We'll discuss some platformer-specific elements.

### Ground

This may seem like an obvious aspect to most of the games, but it needs to be discussed as it is the most important element in any platformer. As the name suggests, platformers are based on the fact that the player interacts with the platform (ground). The key aspect of a platformer that separates it from other genres is the placement of the ground.

In most games, the ground is only used as a background factor. It doesn't usually play any role other than having something to stand on.

In platformers, however, the ground's placement itself poses a challenge to the player. The ground itself becomes one of the obstacles for the player. In Super Mario Bros., for example, there are gaps in the ground that Mario has to jump over in order to not die. The ground is also placed in other interesting ways to make getting things like power-ups harder. It is a designer's job to focus primarily on the ground's placement, before the other elements.

### Obstacles

Enemies or other forms of obstacles are also an integral part of platformers. The difficulty of a level primarily depends on the way these obstacles are placed and also on how the obstacles interact with the player. The choice of these obstacles and their placement should be done extrememly carefully as putting strong ones at the very beginning of the game could lead the player to think that the game is too hard and be demotivated. A weak set of obstacles

placed a long way from the beginning could make the player feel the opposite way and would lead to dissatisfaction. The safest strategy is to place them in an increasing order of difficulty. The obstacles can be of various types, some are destroyable like the enemies in Super Mario, some are not like the spikes in Celeste.

**The Player**

The player is completely controlled by the player and hence it is important for a game designer what freedoms the player needs to be given. In most platformers, the player is given the freedom of moving left-right and jumping. Here, too, the kind of jump the player makes is very important to the player as it determines the player's mastery of control throughout the entire game. Celeste, in particular, does an amazing job in the jump aspect. Different games also give other freedoms like the ability to fire a gun in Super Contra and shoot fireballs in Super Mario. Celeste gives the ability to dash and climb walls. Sonic gives the ability to roll. It is impossible to list down the possible freedoms as it is upto the designer's creativity.

**Death**

Deciding how the player dies is also extremely important as this can be the difference between an extremely hard game and an easy one. In games like Super Mario, a very beautiful system is implemented. You die immediately once you hit an enemy. But this can be avoided if you have the power of a mushroom. So this makes the game hard but if you play good enough to conserve a mushroom, then you're at low risk. Also in Super Mario, you have a limit to the number of times you can die, making the game very challenging. In Super Contra, a health system is used. In Celeste, you die immediately

when you hit an obstacle. No exceptions. But here, you can try a level infinite number of times. All of these different systems are designed very well, giving the player just the right amount of challenge that fits well with the game.

## Conclusion

We discussed some key aspects of platformers and why they are designed the way they are. There are a lot of more aspects that can be talked about but I shall end the discussion here as these are some general aspects that apply to most platformers.