

Creating A Simple 2D Platformer Game Using Construct 2

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Abstract—The Game Industry is one of the fastest growing industries in the world today. A lot of people, even from outside IT, wants to be able to build their own game. Construct 2 is a HTML5 game creator platform that requires no coding. It gives the users outside the IT industry an opportunity to be able to use it to build their own games. Construct 2 is easy and simple to use, has stunning visual effects, flexible behaviours, multiplatform export, powerful event system, easy extensibility, and not to mention the instant preview. This makes Construct 2 one of the go-to game developing platform. Construct 2 helps ease the process of making a game and gives an idea to its users on how to think logically. The basic use of Construct 2 and the steps done to build a simple 2 dimensional platformer game is documented here. It shows that Construct 2 is simple and easy to use, however a bit restricted in some places with little room to explore and innovate. Some other game developing platform provides better functions. Construct 2 is very suitable for simpler games, and does gives satisfactory results. It's however unsuitable for much more complicated games.

Keywords—Construct 2, 2 Dimensional, Platformer Game

I. INTRODUCTION

Everybody play games, from the old to the young, everyone enjoys the fun experience a game gives. It started from a simple game of tag into now a digital game. Nowadays, everyone has at least one to two games in their phone, something to pass time. Some, are very serious in their gaming, even turning it into their jobs. With so many consumers in the world, the gaming industry has turned into one of the biggest and fastest growing industry in the world.

People wants to be able to create and build their own games. Designers, programmers, hobbyist, even ambitious students wants to be able to create their own games. However, most people think that the only people that are actually able to do that are people with programming skills. This is not true. There are lots of game creator platforms that are very easy to use. Although some of them still requires a little programming, it is fairly easier to use. Examples of these platforms are Unity, MonoGames, GameMaker: Studio, and Construct.

In this paper, we will talk about Construct 2. Construct 2 is one of the easiest game creator platform to use. It requires no

coding, or gives the user an idea of no coding, which will be discussed later. Construct 2 is a HTML5 game creator platform, which is quick and easy, has stunning visual effects, powerful event system and flexible behaviours, can be implemented in a wide range of platforms and easily extensible, and has instant preview. With its easy navigation, lots of people uses this platform.

Documentation and tutorials are spread throughout the internet, which makes it easy for other users to access. In this paper, the author will discuss the implementation of creating a simple 2D platformer game. This game is based on the tutorial given by RedFoc Tutorial in YouTube^[1] and a Beginner's Tutorial in the Construct 2 website^[2]. Readers will be able to find these tutorial and access it themselves in the internet.

II. ADVANTAGES OF USING CONSTRUCT 2

These are the advantages that are promised to its users on their website (<https://www.scirra.com/construct2>). We will be discussing each of these advantages below.

A. Quick and Easy

Construct 2 makes the process of creating games much easier. All the user needs to do is drag and drop objects, add behaviours and adjust additional things, and make it come alive by creating the events. Its tabbed interface makes it easy to navigate and everything is actually really easy to understand. It only took a few minutes for the author to understand how Construct 2 works. It may be different for others, but it wouldn't take as much time as other platforms might.

B. Powerful Event System

Event System is where users can make their games come to life. Users are helped to think in a logical way, just like how programmers should, using intuitive interface. All the users need to do is select a condition or trigger of an object or system, select the object, and then select the action. There are no cryptic programming language used at all. Users can also create groups and subevents. This is why earlier, the author wrote that users are made to think that they aren't coding, when actually they are. The Event System is where the coding

actually happens, it's just that Construct 2 helps users along the way by creating an intuitive interface for them to navigate. The Event System is a little bit harder to understand, but still very easy. The main idea of this is basically *If-Then-Else*.

C. Flexible Behaviours

Every object added to the game has their own behaviour, which users could set themselves. Movements, characteristics, features, could be set by users after adding the object to the game. Movements includes 8 directions, angles, speed, etc. Features includes their origin point, and utilities such as fade, dlash, wrap, pin, and drag & drop. Characteristics such as platform, solid, jump-thru, and others are also available to choose from. This makes it easier for users to create the game the way they want to.

D. Instant Preview

Construct 2 allows users to preview their games instantly at any time without any compiling or other time-consuming process. The idea is to create a game in prototype and iterative model. That way, users can see how their game is like and add new features along the way. Construct 2 will open a new window in the user's browser to preview the game.

E. Stunning Visual Effects

Construct 2 does have stunning visual effects. It's amazing what users could do and manipulate in this platform. Layers and layout could be created and stacked. Effects like warp, distort, blend, blur, mask, re-color, and much more are available to apply into the object. Users could see all these applied in their real time editor.

F. Multiplatform Export

Games are able to be published in multiple platforms in Construct 2. Selection of these platforms includes HTML5 Website, Chrome Webstore, Scirra Arcade, Kongregate, PhoneGap, AppMobi, CocoonJS, Windows Phone 8, iOS, and Android Apps. The author however have not tried this feature, except for the instant preview in the browser.

G. Easy Extensibility

There are a wide range of plugins available in the Construct 2. It is said to have over 20 built-in plugins available for users to choose from. However, if users use the Free Edition of Construct 2, some of these plugins aren't available.

III. BUILDING A SIMPLE 2D PLATFORMER GAME USING CONSTRUCT 2

There is no right way or order in creating a game in Construct 2. It all depends on the user themselves. The author tried creating a simple 2 dimensional platformer game following a tutorial by RedFoc Tutorials in YouTube. The tutorial also provides the assets^[3] used. Below, the author will explain the things done in the process of creating the game and the results.

The author created the game similar to the way the tutorial given by RedFoc Tutorial with a few explorations on the side.

Construct 2 did make the process really easy, and the interface supported the users and was intuitive and easy to navigate.

The author first created a New Project, which option was available to access the Start Page. Then, the author adjusted the layout size and layers. These settings were easy to find as they were all on the same page as the editor.

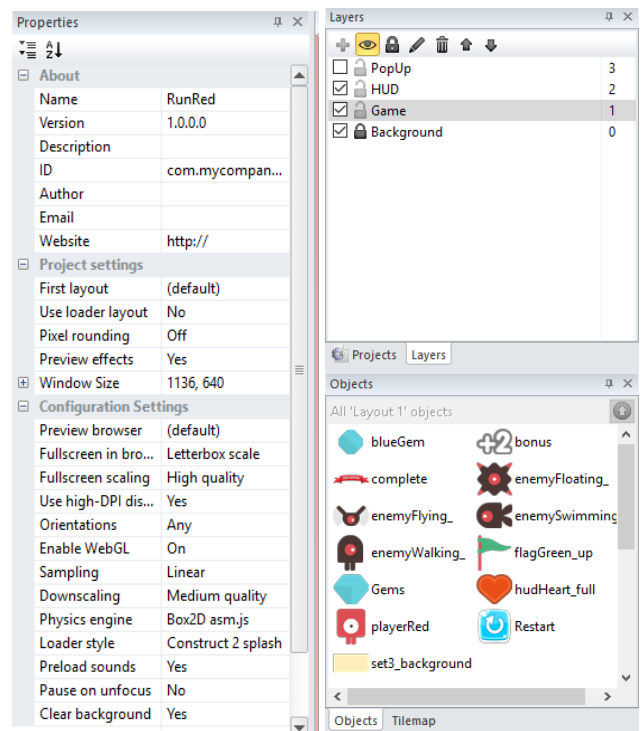


Fig. 1. Properties, Objects, Tilemap, Projects, and Layers Bar

The real time editor helped a lot as it showed the changes that happens. The author was able to easily drag and drop objects and created a layout of the game into the editor. New layers were added as well to make the game even more interactive.



Fig. 2. Real Time Editor

The author then started adding objects to the game, adjusted their Behaviours and Characteristics. These too were very easy to do and very intuitively done. Animations were created for each of the objects as well. For example, the Player Object has

different animation for different action (Walk, Fall, Dead, Stand, etc).

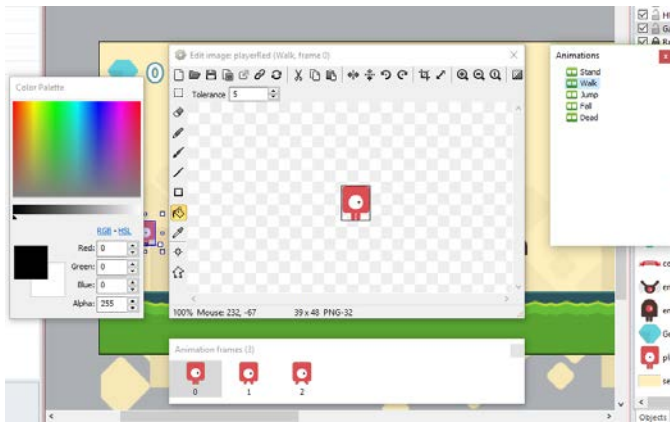


Fig. 3. Adding Behaviours, Characteristics, Animations, and Features to an Object

Then, Event Systems were made. This was fairly harder than the process of adding objects and behaviours. However, it is easier than doing coding to the game. The author explored a bit and was able to create groups of event. For example, the player animation was grouped into one, player control was in a different group, and so on. These groups helped the author differentiate the events. Subevents were a bit harder to make as the option was hard to find. It turned out that we had to click a condition (which needs subevents) and type 'S' at the same time to create subevents. Though after learning it, the process of making the Event System became faster.



Fig. 4. Event System (with subevents, conditions, actions, triggers, and groups)

Lastly, the author created a point system, a condition where the player either loses or wins, and a popup to show it. The Game Over condition is triggered when the life of the player is less than or equal to zero. This counter is created by creating a Global Variable in the Event System, which decreases everytime the player collides with the enemy. A Gem counter global variable is also made to count the gems collected by the player. Another thing the author also made is a Checkpoint in

the shape of a Flag Object. If the player collides with the Flag Object, the player completes the game.

Author also added a restart button. This button triggers the system to restart the whole layout. It also sets the Gem Counter and Life Counter into 0 and 3 each.

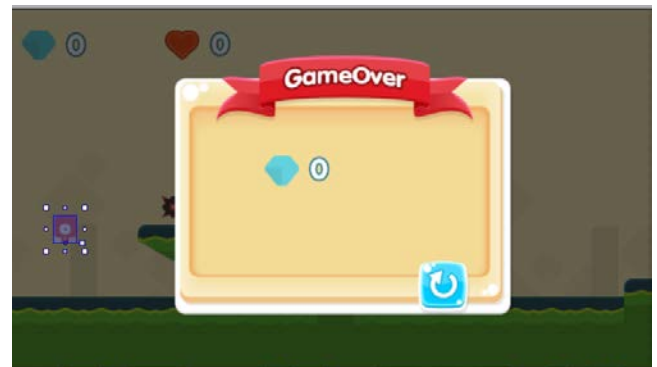


Fig. 5. PopUp and Point System

After all this is done, the simple 2 dimensional platform game is finished. Of course there are a lot more things that could be done. However because the constrictions of the Free Edition Construct 2, this was the final product. The author calls it **Run Red**. Below is the final product.

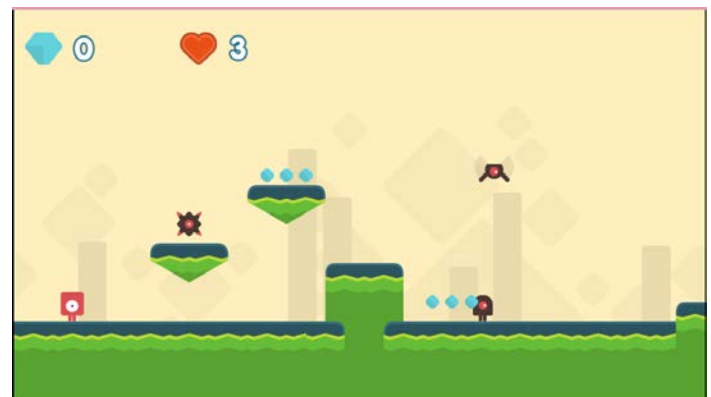


Fig. 6. Final Product

IV. RESULTS

Construct 2 was very easy to use. Compared to other platforms like Unity, which still requires coding, Construct 2 really does helps users create games quickly. This game was created in a few hours only. However, Construct 2 is not as flexible as Unity, and gives little room for more explorations and innovations.

The Free Edition of Construct 2 gives a few constrictions, like only a few number of layers are allowed, fewer plugins, and more. The Event System is also a bit hard to navigate, for example to add a Subevent, we need to left-click an event and type 'S', or to copy an object of event, we need to left-click while clicking control. These things are not intuitive and needs to be learnt and memorized.

Simple games like 2 Dimensional Platformer Games is easier to make using Construct 2. The author is very satisfied with the results. It does look like a real game created and sold on Application Stores. It took only little time and not many effort. The Construct 2 really helped eased the making process.

V. CONCLUSION

Construct 2 is a very quick and easy game creator that gives users a fun experience in creating a game and helps them code the game without thinking they are. It's easy to navigate and gives a lot of features. It does however gives a smaller room for users to explore and navigate. Construct 2 is good to make simple games, however if users want to create 3 Dimensional games, or much more complicated ones, use other game creator platforms. Construct 2 suits beginners and helps users learn the idea of how to create and code a game.

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STATEMENT

I hereby state that the paper I am writing is my own, not an adaptation, or a translation of someone else's paper, and not plagiarism.

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