

COMP313
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ASSIGNMENT ONE: BUILD A GAME IN UNREAL ENGINE 4

Name of game: SIDE RUNNER:

Side runner is the short and simple side scroller style game i have chosen to create for COMP313 Assignment one. It implements a variety of basic features we were required to work on and represents my first experience with game creation in the Unreal Engine. The game is the outcome of several weeks work getting to know how to use the unreal engine and its blueprint style development workflow.

Below is a small write up of the implemented game features and how hard i found them to use.

Below the table is a more in depth write up of my experience in creating this game.

Game feature	Explanation	Difficulty
Movement Left, Right and Jump	This is the simple movement for the character. The basic inputs. Using the Side scroller starter pack from the UE4 booting menu this was easy to implement and easy to get going. I very much appreciate the ease of use UE4 offers in regards to getting a project started.	1/10
Blueprint Actors for pickups	This section represented one of the more time consuming parts of the game. This part is both the blueprint behind the pickup detailing what its effects are and what should change in the game as well as the visual effect. This involved learning about static meshes and how to apply visual elements.	6/10
Abilities: Low gravity, Fast Run, Slow time.	To make the game more exciting I opted to add a variety of effects or power ups the user could have, these are mapped to the 1 2 and 3 keys respectively. Each involves altering the game of the player in some way. This was by far the most interesting art of the game to create as it is affecting how the game runs in some way. I also tied this to a fuel system so users need some fuel to activate the ability. And of course this also meant adding other data such as a cooldown effect. A timer	7/10

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	showing the amount of time remaining and and on screen graphics to show that it is active.	
Buttons - events	As part of this process I needed to map the functions I had created to buttons. To create some interactive menus and screens that a user will expect to use in a game. This process of creating functions and then mapping those to visual elements to allow users to access the functions allowed me to apply some user design thinking and think about how users want to interact with the game. I think this stream of thinning will be very important in the final project.	2/10
Keys - events	I also had to map events and functions to keyboard inputs as this is how users will expect to interact with the game. This is of course assuming the game is accessed via the web or .exe on a laptop or desktop. I think next time developing a mobile game could be quite interesting. I found the process of mapping events to keyboard inputs quite simple, UE4 makes the visual blueprint linking functions easy to use.	1/10
Multiple levels	Designing multiple interactive levels and screens was quite an interesting art of the game development. It also allowed me to try out multiple ways of designing maps and implement different art styles. I downloaded multiple texture packs from the UE4 marketplace to add graphics to my game as i felt this allied me to produce a better and more exciting output.	6/10
Graphics Elements / Art	I immensely enjoyed the amount of assets available in UE4 and the ability to transform, rotate and scale objects. This allows you to very easily create and build complex and good looking maps.	5/10
Enemy characters	This was quite an inesting process to	6/10

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	create enemy AI elements. Almost all games implement this and it adds a lot of enjoyment to the game to have other actors moving around. I was able to copy the side scroller character class and utilize the abilities i had already created in the past to make enemies quickly. In the future i would invest more time in creating good looking Characters more to make the game feel more consistent and also add moving objects such as blocks objects the user could interact with.	
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Game Description

What is the main action in the game?

The main action in the game is sideways movement. This is a side scroller game such as Mario and the goal is simply to get to the end of the map. Along the way the user will interact with the map in a number of ways, they will need to pick up objects in the game such as health, fuel and coins. They will need to overcome environmental challenges such as large walls and large jumps. There will also be enemy AIs and environmental danger such as fire and explosions to contend with.

What was the hardest part of the game to get working in Unreal

The most complex part of the game to implement was likely the abilities. The 3 abilities implemented were, fast run, Low gravity and Time Slow down. These needed to be created in blueprints, interact with either the player or the game, be visually represented by a banner and also show the time remaining, change the player's fuel levels and also be interacted with via key presses. As this chain of events is so long it was the most complex part of the game to get working but adds a lot of interest to the game making it more attractive to users.

What is the most interesting part of the game

The abilities are also probably the most interesting part of the game to use. They add a lot more options to how the user can interact with the environment and makes the game a lot more interesting to use. Secondly also the map design, i spent a large amount of time creating the

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maps and playing with what i found to be interesting viudal elements that I thought users would enjoy having in the scene.

My Experience with UE4:

I found UE4 quite easy to get started in, the amount of content that is available to get new syers started is very good and the amount of support makes it a very good way to get designers into building games. The Blueprint design method makes it very easy to complete complicated actions and reduces the amount of time wasted learning syntax and eros that are a result of incorrect syntax or framing.

Ultimately I found that I was able to produce a good quality game that, while being rough around the edges and perhaps lacking in originality, was quite fun to play in and had enough interesting elements to make a user interested in playing it. I would love to spend more time refining this game and making it better, adding more menus options and maps.