WORKSHEET TASKS

Version 1.0
BSc Computing for Games
Unreal Blueprints Worksheet

Brian McDonald

Introduction

The goals of this series of workshops is to obtain a good working knowledge of Visual Scripting system in Unreal which is called Blueprints. This will enable you to not only create simple systems in a game (e.g. Triggers) but create full games.

Blueprints is the Visual Scripting language which is shipped inside Unreal Engine 4. This language is node based, where functions and variables can be represented as nodes on the graph and the relationship between these are defined by connections. These connections also allow you to easily see the flow of data through your code.

'We find you need to make a game wrong at least two or three times before you find the right path. ... We took a lot of opportunity to design and explore, knowing that a lot of it would be thrown away."

— Ken Wong, lead designer ***Monument Valley***

Objectives

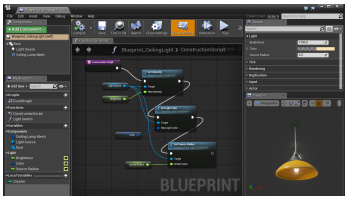
(A) **Understand** rhe Gameplay architecture of the Unreal Engine
(B) **Understand** the syntax of the Blueprints visual scripting system
(C) **Implement** Unreal Actors using Blueprints
(D) **Understand** the basics of the collision system in Unreal
(E) **Understand** how to debug Unreal Blueprints.

Worksheet Setup

This is a continuation of worksheet 1, you should add functionality into the project from worksheet 1.

Worksheet Tasks

1. As individuals follow these tutorial videos, you can add the content of these to the existing map or a new one
   (A) **Introduction to Blueprints** - `https://docs.unrealengine.com/latest/INT/Videos/PLZlv_N0_O1gY35ezlSQn1sWOGfh4C7ewO/EFXMW_UEDco/index.html`
   (B) **Introduction to Level Blueprints** - `https://docs.unrealengine.com/latest/INT/Videos/PLZlv_N0_O1gY35ezlSQn1sWOGfh4C7ewO/_zoyaVdqHQ8/index.html`
   (C) **Toggle a light** - `https://docs.unrealengine.com/latest/INT/Videos/PLZlv_N0_O1gY35ezlSQn1sWOGfh4C7ewO/gHdwOiR0D0A/index.html`
   (D) **Class Blueprints** - `https://docs.unrealengine.com/latest/INT/Videos/PLZlv_N0_O1gY35ezlSQn1sWOGfh4C7ewO/5YooEu-ktww/index.html`
   (E) **Components and Blueprints** - `https://docs.unrealengine.com/latest/INT/Videos/PLZlv_N0_O1gY35ezlSQn1sWOGfh4C7ewO/5YooEu-ktww/index.html`



Unreal Engine Blueprints

   (F) **Blueprint Functionality** - https://docs.unrealengine.com/latest/INT/Videos/PLZlv_N0_O1gY35ezlSQn1sWOGfh4C7ewO/9nMnQE-Zg-o/index.html
2. Split into Pairs (or Mobs), ideally with someone who is familiar with Unreal. Carry out the following tasks
   (A) An Actor which acts like a pickup and **disapears** when collided with by the player
   (B) An Actor which gets **destoryed** when hit by a bullet
   (C) An Actor which acts like a **launchpad** when the player steps on it
   (D) An Actor which **follows** the player and is destoryed when it collides with the player
   (E) An Actor which has **health** and when hit by a projectile loses some health

Additional Guidance

When you are coding it might be difficult to figure out the state of the application, it is often a good idea to set a break point or use Print String function.

Additional Resources

- Introduction to Blueprints in Unreal https://www.pluralsight.com/courses/introduction-blueprint-unreal-engine-1688
- Creating Gameplay Systems in Unreal https://www.pluralsight.com/courses/gameplay-systems-blueprint-features-unreal-engine-1861