“Programming” with Blueprints in Unreal Engine 4

Audience: Users relatively new to Unreal Engine 4, such as UNT Game Programming students.

This tutorial will introduce readers to the basics of Blueprints in Unreal Engine 4 (UE4) by helping the reader step-by-step create functioning collision triggers in the engine. The tutorial briefly walks the reader through booting up Unreal Engine and creating a new project before diving into Blueprints.

Blueprints function within UE4 as a visually appealing, simple alternative to coding, usually involving simple drags and drops of buttons to perform complex tasks in easy ways.

Most of the information, footage, and screenshots will be taken directly from the UE4 interface. This information will be displayed via a Prezi presentation in slideshow form, and will consist of text, still images, and short videos (no longer than 10 seconds for any video).

# Research

The Unreal Engine website has extensive tutorials regarding blueprints that go well beyond the scope of my tutorial. I will be recreating one of the “Introduction to Blueprints” tutorials but with a simpler focus; that Introduction series is comprised of nine videos, each upwards of ten minutes long, while my tutorial will be much shorter without regurgitating the same information.

# Audience

The target audience is people who have not used UE4 before or need a refresher on the very basics. As such, the language will be generalized, all acronyms will be explained, and game development slang will be avoided.

Blueprints allow the user to work with UE4 without needing to know how to code, meaning that the target audience is not necessarily programmers either; Computer Science and programming jargon will be avoided as well unless it is explained first.

# Purpose

This tutorial’s main purpose is to present UE4 as unintimidating and user-friendly to programmers and non-programmers alike. Unlike code, Blueprints are relatively easy to follow and much more visually appealing, and this tutorial aims to show how simple it can be to understand and use Blueprints to make an entertaining, if barebones, game.

This tutorial will be used to bring new users into Blueprint programming in Unreal Engine 4.

Outline

Each section will be several straightforward steps long.

1. Introduction
   1. What is UE4?  
      The UE4 Main Page will do it more justice than I can, but in short, UE4 is a powerful game engine that also strives for readability and ease of use.
   2. What can you do in UE4? (Video)  
      Fortnite, Dragon Ball FighterZ, Octopath Traveler, Street Fighter V, Snake Pass, Gears 4, PUBG  
      The goal of this tutorial is to make a platform move back and forth after the player presses a key. UE4 is big and scary, but if you look at it piecewise, it’s actually very user-friendly while not sacrificing variety in what kind of games are possible to make.
2. Getting Started
   1. Downloading and opening UE4
   2. Creating a new First-Person project
3. Working with Blueprints
   1. The Level Blueprint
   2. The Character Blueprint
   3. Matinees
4. Creating a Moving Platform
   1. Using a Matinee
   2. Playing a Matinee via Blueprints
   3. Done!
5. Further Applications
   1. Video: -running start-, a game made entirely out of just moving platforms and the default FPS blueprint
   2. Unreal Engine documentation  
      Easy-to-read, thorough, and covers many popular topics, such as main menus, pause menus, triggers, and more.