User guide
UE4 Game Firearm System

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Introduction

The Firearm system was designed and implemented to model the weapons of Doom 2016.

The Firearm system includes the following features:

Fire modes such as Automatic, Burst and Charge up

Hitscan or Solid Projectiles

Scope and Aim down sights

Multiple mode weapons

Recoil with Knockback

Aoe damage

Camera or Muzzle fire point and direction

The system is designed with features as Components.
Each feature is generally made into their own component, and the aim was to make it so components were drag and drop to enable the feature, however this aim was not realized.

Each weapon in the firearm system is derived from the weapon base class. To function, a weapon should consist of at least 4 components:
- The Ammo Component, which handles the ammunition of the weapon mode.
- The Bullet Component, which determines what bullet a weapon mode will fire.
- The Barrel Component, which manages the bullet spread, spawning projectiles/executing hitscans.
- The Trigger Component, which determines how the user interacts with the weapon mode.

Creating your own weapon

This is a step by step guide to creating a weapon for this firearm system.

Step 1: Create a Blueprint class based on the WeaponBase c++ class, located in C++ Classes/UE4Game/FirearmSystem.

Step 2: Set the Weapon skin by selecting a skeletal mesh in the GunMesh(Inherited) component.

Step 3: Setup collision profile in the GunMesh(Inherited) component so that the player can interact with it.
In Collision category:
        Select Collision Preset: Custom.
   Select Collision Enabled: Collision Enabled.
        Set Object Type to World Dynamic

Step 4: Add Mandatory Components and Setup Weapon Mode.
In order for the weapon to function, it needs a trigger component, a barrel component, an ammo component and a bullet component.

These mandatory components create a WeaponMode.

To add the weapon mode to the weapon: Implement the BeginPlay Event in Blueprint Graph of your Weapon Blueprint, and call AddWeaponMode.
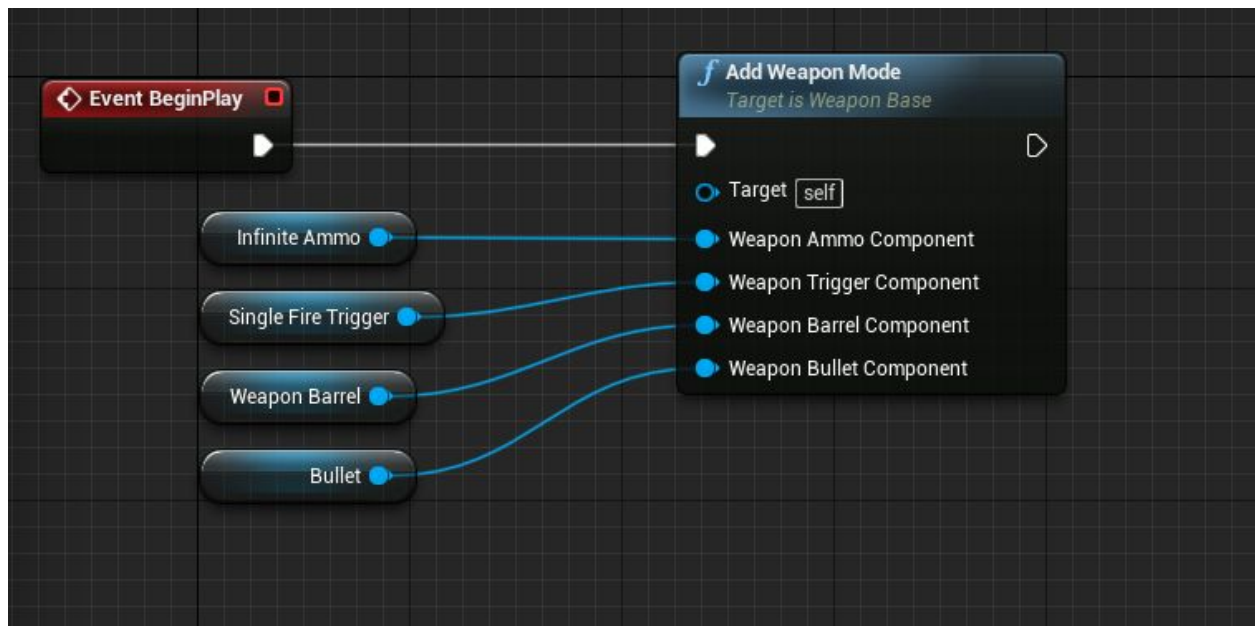
There are no restrictions on how many Weapon Modes a weapon can have.

Step 5: Optional Components and Customizing the Components.
Now you can have a look at the included optional components as well as setting the different properties of each component to make the desired weapon.

There are some debug options available. Under Barrel component Debug Category you can enable debug, which will display a debug line (if the bullet uses the Hitscan BulletType). You can also set a hit locator reference, which will display information about a hit.

Creating your own Solid Projectiles

Step 1:
Create a Blueprint class based on the BulletBase C++ class, located in C++ Classes/UE4Game/FirearmSystem.

Step 2: Set the Bullet mesh by selecting a skeletal mesh in the ProjectileMesh(Inherited) component.

Step 3: Tweak the values in the (Self) component to your liking.

Step 4: Add the AOE component if you wish and tweak those values.