Audio-Visual Elements

9th Week, 2021

UNREAL ENGINE

Audio in UE4 (1)

- Sounds make your game more believable and immersive, which will provide a much better experience for your player.

- Video games usually have two types of sounds:
  - 2D sounds are usually used for music.
  - 3D sounds are usually used for sound effects.

- The main file types: .**wav** and .**mp3**

Audio in UE4 (2)

› Some of assets and classes related to audio in UE4

- **Sound Base**: Represents an asset that contains audio.
- **Sound Wave**: Represents an audio file that has been imported into UE4. Inherits from **Sound Base**.
- **Sound Cue**: An audio asset that can contain logic related to things such as attenuation, looping, sound mixing, and other audio-related functionality. It inherits from **Sound Base**.
- **Sound Class**: An asset that allows you to separate your audio files into groups and manage some of their settings, such as volume and pitch.
- **Sound Attenuation**: An asset that allows you to specify how a 3D sound will behave
- **Audio Component**: An actor component that allows you to manage the playback of audio files and their properties.

Exercise 9.01: Importing au Audio File

ThirdPersonExampleMap
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
10
10°
0.25
4
Folder
New Folder
Create a new folder in /Game.
Import Asset
Import to /Game...
Create Basic Asset
Blueprint Class
Level
Material
Particle System
Create Advanced Asset
Animation
Artificial Intelligence
Blendables
Blueprints
Editor Utilities
Foliage
FX
Live Link
Materials & Textures
Media
Miscellaneous
Paper2D
Physics
Sounds
User Interface
Right-Click
World Outliner
Search...
Label
Type
ThirdPersonExampleMap (World
ArenaGeometry
Folder
Arena
Folder
Floor
StaticMeshAc
Wall6
StaticMeshAc
Wall7
StaticMeshAc
Wall8
StaticMeshAc
Wall9
StaticMeshAc
Walkway
Folder
27 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
Search Paths
Content
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Filters
Search Content
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPerson CPP
6 items
View Options

ThirdPersonExampleMap

DDC | Dodgeball

File | Edit | Window | Help

Place Actors

Search Classes

Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes

Empty | Empty | Empty | Point | Playe | Cube | Spher | Cylinc | Cone | Plane

Save Current | Source Control | Modes | Content | Marketplace | Settings | Blueprints | Cinematics | Build | Compile

Perspective | Lit | Show | 10 | 10° | 0.25 | 4

Third Pe

World Outliner

Search...

Label	Type
ThirdPersonExampleMap (World	
ArenaGeometry	Folder
Arena	Folder
Floor	StaticMeshAc
Wall6	StaticMeshAc
Wall7	StaticMeshAc
Wall8	StaticMeshAc
Wall9	StaticMeshAc
Walkway	Folder

27 actors | View Options

Details | World Settings

Select an object to view details.

Content Browser

Add/Import | Save All | Content

Search Paths

Content
- Geometry
- Mannequin
- Physics
- StarterContent
- ThirdPerson
- ThirdPersonCPP
  - Blueprints
  - Maps
- C++ Classes

Filters | Search Content

Geometry | Mannequin | NewFolder | Physics | StarterContent | ThirdPerson | ThirdPerson CPP

7 items (1 selected) | View Options

ThirdPersonExampleMap

File Edit Window Help

Place Actors

Search Classes

Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes

Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane

Save Current | Source Control | Modes | Content | Marketplace | Settings | Blueprints | Cinematics | Build | Compile

Perspective | Lit | Show | 10 | 10° | 0.25 | 4

Third Pe

World Outliner

Search...

Label	Type
ThirdPersonExampleMap (World	
ArenaGeometry	Folder
Arena	Folder
Floor	StaticMeshAc
Wall6	StaticMeshAc
Wall7	StaticMeshAc
Wall8	StaticMeshAc
Wall9	StaticMeshAc
Walkway	Folder

27 actors | View Options

Details | World Settings

Select an object to view details.

Content Browser

Add/Import | Save All | Content

Search Paths

Content
- Audio
- Geometry
- Mannequin
- Physics
- StarterContent
- ThirdPerson
- ThirdPersonCPP
  - Blueprints
  - Maps

C++ Classes

Filters | Search Content

Audio | Geometry | Mannequin | Physics | StarterContent | ThirdPerson | ThirdPerson CPP

7 items (1 selected) | View Options

재생
Audio
파일
홈
공유
보기
음악 도구
즐겨찾기에 고정
복사
붙여넣기
잘라내기
경로 복사
바로 가기 붙여넣기
클립보드
이동 위치
복사 위치
삭제
이름 바꾸기
구성
새 폴더
새로 만들기
속성
열기
모두 선택
선택 안 함
선택 영역 반전
선택
« Dodgeball › Content › Audio
Audio 검색
즐겨찾기
바탕 화면
다운로드
문서
사진
동영상
음악
OneDrive - Personal
BOUNCE.wav
1개 항목
1개 항목 선택함 24.4KB

ThirdPersonExampleMap

DDC | Dodgeball

File | Edit | Window | Help

Place Actors

Search Classes

Recently Placed | Basic | Lights | Cinematic | Visual Effects | Geometry | Volumes | All Classes

Empty | Empty | Empty | Point | Playe | Cube | Spher | Cylinc | Cone | Plane

Save Current | Source Control | Modes | Content | Marketplace | Settings | Blueprints | Cinematics | Build | Compile

Perspective | Lit | Show | 10 | 10° | 0.25 | 4

Third Pe

World Outliner

Search...

Label	Type
ThirdPersonExampleMap (World	
ArenaGeometry	Folder
Arena	Folder
Floor	StaticMeshAc
Wall6	StaticMeshAc
Wall7	StaticMeshAc
Wall8	StaticMeshAc
Wall9	StaticMeshAc
Walkway	Folder

27 actors | View Options

Details | World Settings

Select an object to view details.

Content Browser

Add/Import | Save All | Content

Search Paths

Content
- Audio
- Geometry
- Mannequin
- Physics
- StarterContent
- ThirdPerson
- ThirdPersonCPP
  - Blueprints
  - Maps

C++ Classes

Filters | Search Content

Audio | Geometry | Mannequin | Physics | StarterContent | ThirdPerson | ThirdPerson CPP

7 items (1 selected)

A change to a source content file has been detected.
Would you like to import it?

Import | Don't Import | Don't ask again | What Changed?

ThirdPersonExampleMap
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
10
10°
0.25
4
Third Pe
World Outliner
Search...
Label
Type
ThirdPersonExampleMap (World
ArenaGeometry
Folder
Arena
Folder
Floor
StaticMeshAc
Wall6
StaticMeshAc
Wall7
StaticMeshAc
Wall8
StaticMeshAc
Wall9
StaticMeshAc
Walkway
Folder
27 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
Audio
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Filters
Search Audio
Play selected Sound Wave
BOUNCE
1 item (1 selected)
View Options

BOUNCE

File Edit Asset Window Help

Asset Type: SoundWave

Save Browse

Details

Search Details

Format

Is Ambisonics

Quality

Playback

Streaming

Sound

Group: Default

Looping

Volume: 1.0

Pitch: 1.0

Class: None

None

Loading

Loading Behavior Override: Inherited

Subtitles

Mature

Manual Word Wrap

Single Line

Spoken Text

Subtitle Priority: 10000.0

Subtitles: 0 Array elements

Comment

ThirdPersonExampleMap
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
Folder
New Folder
Import Asset
Import to /Game/Audio...
Create Basic Asset
Blueprint Class
Level
Material
Particle System
Create Advanced Asset
Animation
Artificial Intelligence
Blendables
Blueprints
Editor Utilities
Foliage
FX
Live Link
Materials & Textures
Media
Miscellaneous
Paper2D
Physics
Sounds
User Interface
Sound Attenuation
Sound Concurrency
Sound Cue
Analysis
Classes
Dialogue
Effects
Mix
Source
Synthesis
Sound Class
Sound Class Mix
Sound Class
hold (Ctrl + Alt) for more
Right-Click
World Outliner
Search...
Label
Type
ThirdPersonExampleMap (World
ArenaGeometry
Folder
Arena
Floor
StaticMeshAc
Wall6
Wall7
Wall8
Wall9
Walkway
27 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
Audio
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Filters
BOUNCE
1 item
View Options

ThirdPersonExampleMap

DDC | Dodgeball

File | Edit | Window | Help

Place Actors

Search Classes

Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes

Empty | Empty | Empty | Point | Playe | Cube | Spher | Cylinc | Cone | Plane

Save Current | Source Control | Modes | Content | Marketplace | Settings | Blueprints | Cinematics | Build | Compile

Perspective | Lit | Show | 10 | 10° | 0.25 | 4

Third Pe

World Outliner

Search...

Label	Type
ThirdPersonExampleMap (World	
ArenaGeometry	Folder
Arena	Folder
Floor	StaticMeshAc
Wall6	StaticMeshAc
Wall7	StaticMeshAc
Wall8	StaticMeshAc
Wall9	StaticMeshAc
Walkway	Folder

27 actors | View Options

Details | World Settings

Select an object to view details.

Content Browser

Add/Import | Save All | Content ▸ Audio

Search Paths

Content
- Audio
- Geometry
- Mannequin
- Physics
- StarterContent
- ThirdPerson
- ThirdPersonCPP
  - Blueprints
  - Maps

C++ Classes

Filters | Search Audio

BOUNCE | wSoundClass

2 items (1 selected) | View Options

ThirdPersonExampleMap
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
10
10°
0.25
4
Third Pe
World Outliner
Search...
Label
Type
ThirdPersonExampleMap (World
ArenaGeometry
Folder
Arena
Folder
Floor
StaticMeshAc
Wall6
StaticMeshAc
Wall7
StaticMeshAc
Wall8
StaticMeshAc
Wall9
StaticMeshAc
Walkway
Folder
27 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
Audio
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Filters
Search Audio
BOUNCE
Dodgeball
2 items (1 selected)
View Options

BOUNCE

File Edit Asset Window Help

Asset Type: SoundWave

Save Browse

Details

Search Details

Format

Is Ambisonics

Quality

Playback

Streaming

Sound

Group: Default

Looping

Volume: 1.0

Pitch: 1.0

Class: None

None

Create New Asset

Sound Class

Current Asset

Copy

Paste

Clear

Browse

Search Assets

Dodgeball
Sound Class

1 item

View Options

Dodgeball (Sound Class)

Path: /Game/Audio

Cooking Filepath Length: 109 / 260

Loading

Loading Behavior Override: Inherited

Subtitles

Mature

Manual Word Wrap

Single Line

Spoken Text

Subtitle Priority: 10000.0

Subtitles: 0 Array elements

Comment

BOUNCE*

File Edit Asset Window Help

Asset Type: SoundWave

Save Browse

De this asset (Ctrl+S)

Search Details

Format

Is Ambisonics

Quality

Playback

Streaming

Sound

Group: Default

Looping

Volume: 1.0

Pitch: 1.0

Class: Dodgeball

Loading

Loading Behavior Override: Inherited

Subtitles

Mature

Manual Word Wrap

Single Line

Spoken Text

Subtitle Priority: 10000.0

Subtitles: 0 Array elements

Comment

Exercise 9.02 Playing a Sound When The Dodgeball Bounces off a Surface

파일(F) 편집(E) 보기(V) Git(G) 프로젝트(P) 빌드(B) 디버그(D) 테스트(S) 분석(N) 도구(T) 확장(X) 창(W) 도움말(H) 검색 (Ctrl+Q) Dodgeball

Develop | Win64 | 로컬 Windows 디버거 | Live Share

RestartWidget.h | RestartWidget.cpp | HealthComponent.h | DodgeballProjectile.cpp | DodgeballProjectile.h*

Dodgeball | ADodgeballProjectile::USoundBase

```
#pragma once

#include "CoreMinimal.h"
#include "GameFramework/Actor.h"
#include "DodgeballProjectile.generated.h"

UCLASS()
class DODGEBALL_API ADodgeballProjectile : public AActor
{
    GENERATED_BODY()

private:
    UPROPERTY(VisibleAnywhere, BlueprintReadOnly, Category = Dodgeball, meta = (AllowPrivateAccess = "true"))
    class USphereComponent* SphereComponent;

    UPROPERTY(VisibleAnywhere, BlueprintReadOnly, Category = Dodgeball, meta = (AllowPrivateAccess = "true"))
    class UProjectileMovementComponent* ProjectileMovement;

public:
    // Sets default values for this actor's properties
    ADodgeballProjectile();

protected:
    // Called when the game starts or when spawned
    virtual void BeginPlay() override;

    // The damage the dodgeball will deal to the player's character
    UPROPERTY(EditAnywhere, Category = Damage)
    float Damage = 34.f;

    // The sound the dodgeball will make when it bounces off of a surface
    UPROPERTY(EditAnywhere, Category = Sound)
    class USoundBase* BounceSound;
```

Ctrl+S

100 % | 문제가 검색되지 않음 | 줄: 35 문자: 32 열: 35 탭 CRLF

솔루션 탐색기

솔루션 탐색기 검색(Ctrl+;)

- 솔루션 'Dodgeball' (2/2개 프로젝트)
  - Engine
    - UE4
  - Games
    - Dodgeball
      - 참조
      - 외부 종속성
      - Config
      - Source
        - Dodgeball
          - Dodgeball.Build.cs
          - Dodgeball.cpp
          - Dodgeball.h
          - DodgeballCharacter.cpp
          - DodgeballCharacter.h
          - DodgeballFunctionLibrary.
          - DodgeballFunctionLibrary.
          - DodgeballGameMode.cpp
          - DodgeballGameMode.h
          - DodgeballPlayerController
          - DodgeballPlayerController
          - DodgeballProjectile.cpp
          - DodgeballProjectile.h
          - EnemyCharacter.cpp
          - EnemyCharacter.h
          - HealthComponent.cpp
          - HealthComponent.h
          - HealthInterface.cpp

솔루션 탐색기 | Git 변경 내용

준비 | 소스 제어에 추가

파일(F) 편집(E) 보기(V) Git(G) 프로젝트(P) 빌드(B) 디버그(D) 테스트(S) 분석(N) 도구(T) 확장(X) 창(W) 도움말(H) 검색 (Ctrl+Q) Dodgeball

Develop | Win64 | 로컬 Windows 디버거 | Live Share

RestartWidget.h | RestartWidget.cpp | HealthComponent.h | DodgeballProjectile.cpp* | DodgeballProjectile.h

Dodgeball | ADodgeballProjectile | OnHit(UPrimitiveComponent * HitComp, AActor *

```
// Fill out your copyright notice in the Description page of Project Settings.


#include "DodgeballProjectile.h"
#include "Components/SphereComponent.h"
#include "DodgeballCharacter.h"
#include "GameFramework/ProjectileMovementComponent.h"
#include "HealthComponent.h"
#include "Kismet/GameplayStatics.h"

// Sets default values
ADodgeballProjectile::ADodgeballProjectile()
{
    // Set this actor to call Tick() every frame.  You can turn this off to improve performance if you don't need it.
    PrimaryActorTick.bCanEverTick = true;

    SphereComponent = CreateDefaultSubobject<USphereComponent>(TEXT("Sphere Collision"));
    SphereComponent->SetSphereRadius(35.f);
    SphereComponent->SetCollisionProfileName(FName("Dodgeball"));
    SphereComponent->SetSimulatePhysics(true);
    //Simulation generates Hit events
    SphereComponent->SetNotifyRigidBodyCollision(true);

    // Listen to the OnComponentHit event by binding it to our function
    SphereComponent->OnComponentHit.AddDynamic(this, &ADodgeballProjectile::OnHit);

    // Set this Sphere Component as the root component,
    // otherwise collision won't behave properly
    RootComponent = SphereComponent;

    ProjectileMovement = CreateDefaultSubobject<UProjectileMovementComponent>(TEXT("Projectile Movement"));
    ProjectileMovement->InitialSpeed = 1500.f;

}
```

100 % | 문제가 검색되지 않음 | 줄: 55 | 문자: 116 | 열: 122 | 혼합 | CRLF

솔루션 탐색기

솔루션 탐색기 검색(Ctrl+;)

- 솔루션 'Dodgeball' (2/2개 프로젝트)
  - Engine
    - UE4
  - Games
    - Dodgeball
      - 참조
      - 외부 종속성
      - Config
      - Source
        - Dodgeball
          - Dodgeball.Build.cs
          - Dodgeball.cpp
          - Dodgeball.h
          - DodgeballCharacter.cpp
          - DodgeballCharacter.h
          - DodgeballFunctionLibrary.
          - DodgeballFunctionLibrary.
          - DodgeballGameMode.cpp
          - DodgeballGameMode.h
          - DodgeballPlayerControlle
          - DodgeballPlayerControlle
          - DodgeballProjectile.cpp
          - DodgeballProjectile.h
          - EnemyCharacter.cpp
          - EnemyCharacter.h
          - HealthComponent.cpp
          - HealthComponent.h
          - HealthInterface.cpp

솔루션 탐색기 | Git 변경 내용

저장되었습니다. | 소스 제어에 추가

파일(F) 편집(E) 보기(V) Git(G) 프로젝트(P) 빌드(B) 디버그(D) 테스트(S) 분석(N) 도구(T) 확장(X) 창(W) 도움말(H) 검색 (Ctrl+Q) Dodgeball

Develop | Win64 | 로컬 Windows 디버거 | Live Share

RestartWidget.h | RestartWidget.cpp | HealthComponent.h | DodgeballProjectile.cpp* | DodgeballProjectile.h

Dodgeball | ADodgeballProjectile | OnHit(UPrimitiveComponent * HitComp, AActor *

```
35
36  // Called when the game starts or when spawned
37  void ADodgeballProjectile::BeginPlay()
38  {
39      Super::BeginPlay();
40
41      SetLifeSpan(5.f);
42  }
43
44  // Called every frame
45  void ADodgeballProjectile::Tick(float DeltaTime)
46  {
47      Super::Tick(DeltaTime);
48
49  }
50
51  void ADodgeballProjectile::OnHit(UPrimitiveComponent* HitComp, AActor* OtherActor, UPrimitiveComponent* OtherComp,
52                                   FVector NormalImpulse, const FHitResult& Hit)
53  {
54      if (BounceSound != nullptr && NormalImpulse.Size() > 600.0f) {
55          UGameplayStatics::PlaySoundAtLocation(this, BounceSound, GetActorLocation(), 1.0f, FMath::RandRange(0.7f, 1.3f));
56      }
57
58      ADodgeballCharacter* Player = Cast<ADodgeballCharacter>(OtherActor);
59      if (Player != nullptr) {
60          UHealthComponent* HealthComponent = Player->FindComponentByClass<UHealthComponent>();
61          if (HealthComponent != nullptr) {
62              HealthComponent->LoseHealth(Damage);
63          }
64          Destroy();
65      }
66  }
67
```

Ctrl+S

100 % | 문제가 검색되지 않음 | 줄: 55 | 문자: 116 | 열: 122 | 혼합 | CRLF

솔루션 탐색기

솔루션 탐색기 검색(Ctrl+;)

- 솔루션 'Dodgeball' (2/2개 프로젝트)
  - Engine
    - UE4
  - Games
    - Dodgeball
      - 참조
      - 외부 종속성
      - Config
      - Source
        - Dodgeball
          - Dodgeball.Build.cs
          - Dodgeball.cpp
          - Dodgeball.h
          - DodgeballCharacter.cpp
          - DodgeballCharacter.h
          - DodgeballFunctionLibrary.
          - DodgeballFunctionLibrary.
          - DodgeballGameMode.cpp
          - DodgeballGameMode.h
          - DodgeballPlayerControlle
          - DodgeballPlayerControlle
          - DodgeballProjectile.cpp
          - DodgeballProjectile.h
          - EnemyCharacter.cpp
          - EnemyCharacter.h
          - HealthComponent.cpp
          - HealthComponent.h
          - HealthInterface.cpp

솔루션 탐색기 | Git 변경 내용

준비 | 소스 제어에 추가

파일(F) 편집(E) 보기(V) Git(G) 프로젝트(P) 빌드(B) 디버그(D) 테스트(S) 분석(N) 도구(T) 확장(X) 창(W) 도움말(H) 검색 (Ctrl+Q) Dodgeball

Develop Live Share

- 솔루션 빌드(B) Ctrl+Shift+B
- 솔루션 다시 빌드
- 솔루션 정리(C)
- 솔루션의 전체 프로그램 데이터베이스 파일 빌드
- 솔루션에서 코드 분석 실행(Y) Alt+F11
- Dodgeball 빌드(U) Ctrl+B
- Dodgeball 다시 빌드(E)
- Dodgeball 정리(N)
- Dodgeball에서 코드 분석 실행(A)
- 프로젝트만(J)
- 일괄 빌드(T)...
- 구성 관리자(O)...
- 컴파일(M) Ctrl+F7
- 파일에서 코드 분석 실행(F) Ctrl+Shift+Alt+F7

RestartWidget.h RestartWidget.cpp Hea

Dodgeball ponent * HitComp, AActor *

```
35
36  // Called when the game starts or w
37  void ADodgeballProjectile::BeginPla
38  {
39      Super::BeginPlay();
40
41      SetLifeSpan(5.f);
42  }
43
44  // Called every frame
45  void ADodgeballProjectile::Tick(flo
46  {
47      Super::Tick(DeltaTime);
48
49  }
50
51  void ADodgeballProjectile::OnHit(UPrimitiveComponent* HitComp, AActor* OtherActor, UPrimitiveComponent* OtherComp,
52                                   FVector NormalImpulse, const FHitResult& Hit)
53  {
54      if (BounceSound != nullptr && NormalImpulse.Size() > 600.0f) {
55          UGameplayStatics::PlaySoundAtLocation(this, BounceSound, GetActorLocation(), 1.0f, FMath::RandRange(0.7f, 1.3f));
56      }
57
58      ADodgeballCharacter* Player = Cast<ADodgeballCharacter>(OtherActor);
59      if (Player != nullptr) {
60          UHealthComponent* HealthComponent = Player->FindComponentByClass<UHealthComponent>();
61          if (HealthComponent != nullptr) {
62              HealthComponent->LoseHealth(Damage);
63          }
64          Destroy();
65      }
66  }
67
```

100 % 문제가 검색되지 않음 줄: 55 문자: 116 열: 122 혼합 CRLF

솔루션 탐색기

솔루션 탐색기 검색(Ctrl+;)

- 솔루션 'Dodgeball' (2/2개 프로젝트)
  - Engine
    - UE4
  - Games
    - Dodgeball
      - 참조
      - 외부 종속성
      - Config
      - Source
        - Dodgeball
          - Dodgeball.Build.cs
          - Dodgeball.cpp
          - Dodgeball.h
          - DodgeballCharacter.cpp
          - DodgeballCharacter.h
          - DodgeballFunctionLibrary.
          - DodgeballFunctionLibrary.
          - DodgeballGameMode.cpp
          - DodgeballGameMode.h
          - DodgeballPlayerController
          - DodgeballPlayerController
          - DodgeballProjectile.cpp
          - DodgeballProjectile.h
          - EnemyCharacter.cpp
          - EnemyCharacter.h
          - HealthComponent.cpp
          - HealthComponent.h
          - HealthInterface.cpp

솔루션 탐색기 Git 변경 내용

저장되었습니다. 소스 제어에 추가

ThirdPersonExampleMap
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
10
10°
0.25
4
Third Pe
World Outliner
Search...
Label
Type
ThirdPersonExampleMap (World
ArenaGeometry
Folder
Arena
Folder
Floor
StaticMeshAc
Wall6
StaticMeshAc
Wall7
StaticMeshAc
Wall8
StaticMeshAc
Wall9
StaticMeshAc
Walkway
Folder
27 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
ThirdPersonCPP
Blueprints
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Dodgeball
Filters
Search Blueprints
BP_Dodgeball GameMode
BP_Dodgeball PlayerController
BP_Dodgeball Projectile
BP_Enemy Character
BP_GhostWall
BP_HUDWidget
BP_Restart Widget
BP_VictoryBox
BP_Wall
ThirdPerson Character
10 items (1 selected)
View Options

BP_DodgeballProjectile

File Edit Asset View Debug Window Help

Parent class: Dodgeball Projectile

Components

+ Add Component | Search

BP_DodgeballProjectile(self)

Sphere Component (Sphere Colli

Sphere

Projectile Movement (Projectile M

Compile | Save | Browse | Find | Hide Unrelated | Class Settings | Class Defaults | Simulation | Play

Viewport | Construction Scrip | Event Graph

BP_DodgeballProjectile > Event Graph

Zoom 1:1

Right-Click to Create New Nodes.

This node is disabled and will not be called.
Drag off pins to build functionality.

Event ActorBeginOverlap

Other Actor

This node is disabled and will not be called.
Drag off pins to build functionality.

Event Tick

Delta Seconds

BLUEPRINT

My Blueprint

+ Add New | Search

Graphs

EventGraph

Event BeginPlay

Event ActorBeginOverlap

Event Tick

Functions (18 Overridable)

ConstructionScript

Macros

Variables

Components

Sphere

Event Dispatchers

Details

Search Details

Actor Tick

Start with Tick Enabled ☑

Tick Interval (secs) 0.0

Allow Tick Before Begin ☐

Damage

Damage 34.0

Sound

Bounce Sound None None

Replication

Only Relevant to Owner ☐

Always Relevant ☐

Replicate Movement ☐

Net Load on Client ☑

Net Use Owner Relevan ☐

Replay Rewindable ☐

Replicates ☐

Net Dormancy Awake

Net Cull Distance Squar 225000000.0

Net Update Frequency 100.0

Min Net Update Frequen 2.0

Net Priority 1.0

Rendering

Actor Hidden In Game ☐

Editor Billboard Scale 1.0

Collision

Generate Overlap Event ☐

BP_DodgeballProjectile

File Edit Asset View Debug Window Help

Parent class: Dodgeball Projectile

Components

+ Add Component | Search

BP_DodgeballProjectile(self)

Sphere Component (Sphere Colli

Sphere

Projectile Movement (Projectile M

My Blueprint

+ Add New | Search

Graphs

EventGraph

Event BeginPlay

Event ActorBeginOverlap

Event Tick

Functions (18 Overridable)

ConstructionScript

Macros

Variables

Components

Sphere

Event Dispatchers

Compile | Save | Browse | Find | Hide Unrelated | Class Settings | Class Defaults | Simulation | Play

Viewport | Construction Scrip | Event Graph

BP_DodgeballProjectile > Event Graph

Zoom 1:1

Right-Click to Create New Nodes.

This node is disabled and will not be called.
Drag off pins to build functionality.

Event ActorBeginOverlap

Other Actor

This node is disabled and will not be called.
Drag off pins to build functionality.

Event Tick

Delta Seconds

BLUEPRINT

Details

Search Details

Actor Tick

Start with Tick Enabled

Tick Interval (secs) 0.0

Allow Tick Before Begin

Damage

Damage 34.0

Sound

Bounce Sou

None

Replicati

Only Releva

Always Rele

Replicate M

Net Load on

Net Use Owi

Replay Rewi

Replicates

Net Dorman

Net Cull Dist

Net Update

Min Net Upd

Net Priority

Renderin

Actor Hidde

Editor Billboa

Collision

Generate Overlap Event

Create New Asset

Sound Cue

Source Bus

Current Asset

Copy

Paste

Clear

Browse

Search Assets

BOUNCE
Sound Wave

Collapse01
Sound Wave

Collapse02
Sound Wave

Collapse_Cue
Sound Cue

Explosion01
Sound Wave

Explosion02
Sound Wave

Explosion_Cue
Sound Cue

Fire01

25 items

View Options

BP_DodgeballProjectile*

File Edit Asset View Debug Window Help

Parent class: Dodgeball Projectile

Components

+ Add Component | Search

BP_DodgeballProjectile(self)

Sphere Component (Sphere Colli

Sphere

Projectile Movement (Projectile M

Compile | Save | Browse | Find | Hide Unrelated | Class Settings | Class Defaults | Simulation | Play

needs to be recompiled

(Ctrl + Alt) for more

Event Graph

BP_DodgeballProjectile > Event Graph

Zoom 1:1

Right-Click to Create New Nodes.

This node is disabled and will not be called.
Drag off pins to build functionality.

Event ActorBeginOverlap

Other Actor

This node is disabled and will not be called.
Drag off pins to build functionality.

Event Tick

Delta Seconds

BLUEPRINT

My Blueprint

+ Add New | Search

Graphs

EventGraph

Event BeginPlay

Event ActorBeginOverlap

Event Tick

Functions (18 Overridable)

ConstructionScript

Macros

Variables

Components

Sphere

Event Dispatchers

Details

Search Details

Actor Tick

Start with Tick Enabled

Tick Interval (secs) 0.0

Allow Tick Before Begin

Damage

Damage 34.0

Sound

Bounce Sound BOUNCE

Replication

Only Relevant to Owner

Always Relevant

Replicate Movement

Net Load on Client

Net Use Owner Relevan

Replay Rewindable

Replicates

Net Dormancy Awake

Net Cull Distance Squar 225000000.0

Net Update Frequency 100.0

Min Net Update Frequen 2.0

Net Priority 1.0

Rendering

Actor Hidden In Game

Editor Billboard Scale 1.0

Collision

Generate Overlap Event

ThirdPersonExampleMap*
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Click for Mouse Control
Third Person
World Outliner
Search...
Label
Type
ThirdPersonExampleMap (World
ArenaGeometry
Folder
Arena
Folder
Floor
StaticMeshAc
Wall6
StaticMeshAc
Wall7
StaticMeshAc
Wall8
StaticMeshAc
Wall9
StaticMeshAc
Walkway
Folder
37 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
ThirdPersonCPP
Blueprints
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Dodgeball
Filters
Search Blueprints
BP_Dodgeball GameMode
BP_Dodgeball PlayerController
BP_Dodgeball Projectile
BP_Enemy Character
BP_GhostWall
BP_HUDWidget
BP_Restart Widget
BP_VictoryBox
BP_Wall
ThirdPerson Character
10 items (1 selected)
View Options

Sound Attenuation

› A Sound Attenuation asset
  – To specify how you want a specific sound change volume as its distance from the listener increases

ThirdPersonExampleMap*
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
10
10°
0.25
4
Third Person
World Outliner
Search...
Label
Type
ThirdPersonExampleMap (World
ArenaGeometry
Folder
Arena
Folder
Floor
StaticMeshAc
Wall6
StaticMeshAc
Wall7
StaticMeshAc
Wall8
StaticMeshAc
Wall9
StaticMeshAc
Walkway
Folder
26 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
Audio
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Filters
Search Audio
BOUNCE
Dodgeball
ndAttenuation
3 items (1 selected)
View Options

ThirdPersonExampleMap*
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
10
10°
0.25
4
Third Person
World Outliner
Search...
Label
Type
ThirdPersonExampleMap (World
ArenaGeometry
Folder
Arena
Folder
Floor
StaticMeshAc
Wall6
StaticMeshAc
Wall7
StaticMeshAc
Wall8
StaticMeshAc
Wall9
StaticMeshAc
Walkway
Folder
26 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
Audio
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Dodgeball
Filters
Search Audio
BOUNCE
Bounce Attenuation
Dodgeball
3 items (1 selected)
View Options

BounceAttenuation*

File Edit Asset Window Help

Asset Type: SoundAttenuation

Save Browse

De this asset (Ctrl+S)

Search Details

Attenuation (Volume)

Enable Volume Attenuation	☑
Attenuation Function	Linear
Attenuation Shape	Sphere
Inner Radius	200.0
Falloff Distance	1500.0

Attenuation (Spatialization)

Enable Spatialization	☑
Spatialization Method	Panning
Binaural Radius	0.0
Non-Spatialized Radius	0.0
3D Stereo Spread	200.0
Normalize 3D Stereo Sounds	☐
Spatialization Plugin Settings	0 Array elements

Attenuation (Air Absorption)

Enable Air Absorption	☐
Min Distance Range	3000.0
Max Distance Range	6000.0
Low Pass Cutoff Frequency Min	20000.0
Low Pass Cutoff Frequency Max	20000.0
High Pass Cutoff Frequency Min	0.0
High Pass Cutoff Frequency Max	0.0
Enable Log Frequency Scaling	☐
Absorption Method	Linear

Attenuation (Focus)

Enable Listener Focus	☐

Exercise 9.03 Turning The Bounce Sound into a 3D Sound

파일(F) 편집(E) 보기(V) Git(G) 프로젝트(P) 빌드(B) 디버그(D) 테스트(S) 분석(N) 도구(T) 확장(X) 창(W) 도움말(H) 검색 (Ctrl+Q) Dodgeball

Develop | Win64 | 로컬 Windows 디버거 | Live Share

RestartWidget.h | RestartWidget.cpp | HealthComponent.h | DodgeballProjectile.cpp | DodgeballProjectile.h*

Dodgeball | ADodgeballProjectile::USoundAttenuation

```
8
9   UCLASS()
10  class DODGEBALL_API ADodgeballProjectile : public AActor
11  {
12      GENERATED_BODY()
13
14  private:
15      UPROPERTY(VisibleAnywhere, BlueprintReadOnly, Category = Dodgeball, meta = (AllowPrivateAccess = "true"))
16      class USphereComponent* SphereComponent;
17
18      UPROPERTY(VisibleAnywhere, BlueprintReadOnly, Category = Dodgeball, meta = (AllowPrivateAccess = "true"))
19      class UProjectileMovementComponent* ProjectileMovement;
20
21  public:
22      // Sets default values for this actor's properties
23      ADodgeballProjectile();
24
25  protected:
26      // Called when the game starts or when spawned
27      virtual void BeginPlay() override;
28
29      // The damage the dodgeball will deal to the player's character
30      UPROPERTY(EditAnywhere, Category = Damage)
31      float Damage = 34.f;
32
33      // The sound the dodgeball will make when it bounces off of a surface
34      UPROPERTY(EditAnywhere, Category = Sound)
35      class USoundBase* BounceSound;
36
37      // The sound attenuation of the previous sound
38      UPROPERTY(EditAnywhere, Category = Sound)
39      class USoundAttenuation* BounceSoundAttenuation;
40
41  public:
42      // Called every frame
```

Ctrl+S

100 % | 문제가 검색되지 않음 | 줄: 39 문자: 50 열: 53 탭 CRLF

솔루션 탐색기

솔루션 탐색기 검색(Ctrl+;)

- 솔루션 'Dodgeball' (2/2개 프로젝트)
  - Engine
    - UE4
  - Games
    - Dodgeball
      - 참조
      - 외부 종속성
      - Config
      - Source
        - Dodgeball
          - Dodgeball.Build.cs
          - Dodgeball.cpp
          - Dodgeball.h
          - DodgeballCharacter.cpp
          - DodgeballCharacter.h
          - DodgeballFunctionLibrary.
          - DodgeballFunctionLibrary.
          - DodgeballGameMode.cpp
          - DodgeballGameMode.h
          - DodgeballPlayerControlle
          - DodgeballPlayerControlle
          - DodgeballProjectile.cpp
          - DodgeballProjectile.h
          - EnemyCharacter.cpp
          - EnemyCharacter.h
          - HealthComponent.cpp
          - HealthComponent.h
          - HealthInterface.cpp

솔루션 탐색기 | Git 변경 내용

준비 | 소스 제어에 추가

파일(F) 편집(E) 보기(V) Git(G) 프로젝트(P) 빌드(B) 디버그(D) 테스트(S) 분석(N) 도구(T) 확장(X) 창(W) 도움말(H) 검색 (Ctrl+Q) Dodgeball

Develop | Win64 | 로컬 Windows 디버거 | Live Share

RestartWidget.h | RestartWidget.cpp | HealthComponent.h | DodgeballProjectile.cpp* | DodgeballProjectile.h

Dodgeball | ADodgeballProjectile | OnHit(UPrimitiveComponent * HitComp, AActor *

```
35
36  // Called when the game starts or when spawned
37  void ADodgeballProjectile::BeginPlay()
38  {
39      Super::BeginPlay();
40
41      SetLifeSpan(5.f);
42  }
43
44  // Called every frame
45  void ADodgeballProjectile::Tick(float DeltaTime)
46  {
47      Super::Tick(DeltaTime);
48
49  }
50
51  void ADodgeballProjectile::OnHit(UPrimitiveComponent* HitComp, AActor* OtherActor, UPrimitiveComponent* OtherComp,
52                                   FVector NormalImpulse, const FHitResult& Hit)
53  {
54      if (BounceSound != nullptr && NormalImpulse.Size() > 600.0f) {
55          UGameplayStatics::PlaySoundAtLocation(this, BounceSound, GetActorLocation(), 1.0f, FMath::RandRange(0.7f, 1.3f),
56                                                0.0f, BounceSoundAttenuation);
57      }
58
59      ADodgeballCharacter* Player = Cast<ADodgeballCharacter>(OtherActor);
60      if (Player != nullptr) {
61          UHealthComponent* HealthComponent = Player->FindComponentByClass<UHealthComponent>();
62          if (HealthComponent != nullptr) {
63              HealthComponent->LoseHealth(Damage);
64          }
65          Destroy();
66      }
67  }
68
```

Ctrl+S

100 % | 문제가 검색되지 않음 | 줄: 56 | 문자: 42 | 열: 75 | 혼합 | CRLF

솔루션 탐색기

솔루션 탐색기 검색(Ctrl+;)

- 솔루션 'Dodgeball' (2/2개 프로젝트)
  - Engine
    - UE4
  - Games
    - Dodgeball
      - 참조
      - 외부 종속성
      - Config
      - Source
        - Dodgeball
          - Dodgeball.Build.cs
          - Dodgeball.cpp
          - Dodgeball.h
          - DodgeballCharacter.cpp
          - DodgeballCharacter.h
          - DodgeballFunctionLibrary.
          - DodgeballFunctionLibrary.
          - DodgeballGameMode.cpp
          - DodgeballGameMode.h
          - DodgeballPlayerControlle
          - DodgeballPlayerControlle
          - DodgeballProjectile.cpp
          - DodgeballProjectile.h
          - EnemyCharacter.cpp
          - EnemyCharacter.h
          - HealthComponent.cpp
          - HealthComponent.h
          - HealthInterface.cpp

솔루션 탐색기 | Git 변경 내용

IntelliSense: '사용할 수 있는 멤버가 없습니다.' | 소스 제어에 추가

파일(F) 편집(E) 보기(V) Git(G) 프로젝트(P) 빌드(B) 디버그(D) 테스트(S) 분석(N) 도구(T) 확장(X) 창(W) 도움말(H) 검색 (Ctrl+Q) Dodgeball

Develop Live Share

- 솔루션 빌드(B) Ctrl+Shift+B
- 솔루션 다시 빌드
- 솔루션 정리(C)
- 솔루션의 전체 프로그램 데이터베이스 파일 빌드
- 솔루션에서 코드 분석 실행(Y) Alt+F11
- Dodgeball 빌드(U) Ctrl+B
- Dodgeball 다시 빌드(E)
- Dodgeball 정리(N)
- Dodgeball에서 코드 분석 실행(A)
- 프로젝트만(J)
- 일괄 빌드(T)...
- 구성 관리자(O)...
- 컴파일(M) Ctrl+F7
- 파일에서 코드 분석 실행(F) Ctrl+Shift+Alt+F7

RestartWidget.h RestartWidget.cpp Hea

Dodgeball ponent * HitComp, AActor *

```
35
36  // Called when the game starts or w
37  void ADodgeballProjectile::BeginPla
38  {
39      Super::BeginPlay();
40
41      SetLifeSpan(5.f);
42  }
43
44  // Called every frame
45  void ADodgeballProjectile::Tick(flo
46  {
47      Super::Tick(DeltaTime);
48
49  }
50
51  void ADodgeballProjectile::OnHit(UPrimitiveComponent* HitComp, AActor* OtherActor, UPrimitiveComponent* OtherComp,
52                                   FVector NormalImpulse, const FHitResult& Hit)
53  {
54      if (BounceSound != nullptr && NormalImpulse.Size() > 600.0f) {
55          UGameplayStatics::PlaySoundAtLocation(this, BounceSound, GetActorLocation(), 1.0f, FMath::RandRange(0.7f, 1.3f),
56                                                0.0f, BounceSoundAttenuation);
57      }
58
59      ADodgeballCharacter* Player = Cast<ADodgeballCharacter>(OtherActor);
60      if (Player != nullptr) {
61          UHealthComponent* HealthComponent = Player->FindComponentByClass<UHealthComponent>();
62          if (HealthComponent != nullptr) {
63              HealthComponent->LoseHealth(Damage);
64          }
65          Destroy();
66      }
67  }
68
```

100 % 문제가 검색되지 않음 줄: 56 문자: 42 열: 75 혼합 CRLF

솔루션 탐색기

솔루션 탐색기 검색(Ctrl+;)

- 솔루션 'Dodgeball' (2/2개 프로젝트)
  - Engine
    - UE4
  - Games
    - Dodgeball
      - 참조
      - 외부 종속성
      - Config
      - Source
        - Dodgeball
          - Dodgeball.Build.cs
          - Dodgeball.cpp
          - Dodgeball.h
          - DodgeballCharacter.cpp
          - DodgeballCharacter.h
          - DodgeballFunctionLibrary.
          - DodgeballFunctionLibrary.
          - DodgeballGameMode.cpp
          - DodgeballGameMode.h
          - DodgeballPlayerControlle
          - DodgeballPlayerControlle
          - DodgeballProjectile.cpp
          - DodgeballProjectile.h
          - EnemyCharacter.cpp
          - EnemyCharacter.h
          - HealthComponent.cpp
          - HealthComponent.h
          - HealthInterface.cpp

솔루션 탐색기 Git 변경 내용

저장되었습니다. 소스 제어에 추가

ThirdPersonExampleMap*
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
10
10°
0.25
4
Third Person
World Outliner
Search...
Label
Type
ThirdPersonExampleMap (World
ArenaGeometry
Folder
Arena
Folder
Floor
Wall6
Wall7
Wall8
Wall9
Walkway
Folder
26 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
ThirdPersonCPP
Blueprints
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Dodgeball
Filters
Search Blueprints
BP_Dodgeball GameMode
BP_Dodgeball PlayerController
BP_Dodgeball Projectile
BP_Enemy Character
BP_GhostWall
BP_HUDWidget
BP_Restart Widget
BP_VictoryBox
BP_Wall
ThirdPerson Character
10 items (1 selected)
View Options

BP_DodgeballProjectile
File Edit Asset View Debug Window Help
Parent class: Dodgeball Projectile
Components
Add Component
Search
BP_DodgeballProjectile(self)
Sphere Component (Sphere Collis
Sphere
Projectile Movement (Projectile M
My Blueprint
Add New
Search
Graphs
EventGraph
Event BeginPlay
Event ActorBeginOverlap
Event Tick
Functions (18 Overridable)
ConstructionScript
Macros
Variables
Components
Sphere
Event Dispatchers
Compile
Save
Browse
Find
Hide Unrelated
Class Settings
Class Defaults
Simulation
Play
Viewport
Construction Scrip
Event Graph
BP_DodgeballProjectile > Event Graph
Zoom 1:1
Right-Click to Create New Nodes.
This node is disabled and will not be called.
Drag off pins to build functionality.
Event ActorBeginOverlap
Other Actor
This node is disabled and will not be called.
Drag off pins to build functionality.
Event Tick
Delta Seconds
BLUEPRINT
Details
Search Details
Actor Tick
Start with Tick Enabled
Tick Interval (secs)
0.0
Allow Tick Before Begin
Damage
Damage
34.0
Sound
Bounce Sound
BOUNCE
Bounce Sound Attenuati
None
None
Replication
Only Relevant to Owner
Always Relevant
Replicate Movement
Net Load on Client
Net Use Owner Relevan
Replay Rewindable
Replicates
Net Dormancy
Awake
Net Cull Distance Squar
225000000.0
Net Update Frequency
100.0
Min Net Update Frequen
2.0
Net Priority
1.0
Rendering
Actor Hidden In Game

BP_DodgeballProjectile

File Edit Asset View Debug Window Help

Parent class: Dodgeball Projectile

Components

+ Add Component | Search

BP_DodgeballProjectile(self)

Sphere Component (Sphere Colli

Sphere

Projectile Movement (Projectile M

Compile | Save | Browse | Find | Hide Unrelated | Class Settings | Class Defaults | Simulation | Play

Viewport | Construction Scrip | Event Graph

BP_DodgeballProjectile > Event Graph

Zoom 1:1

Right-Click to Create New Nodes.

This node is disabled and will not be called.
Drag off pins to build functionality.

Event ActorBeginOverlap

Other Actor

This node is disabled and will not be called.
Drag off pins to build functionality.

Event Tick

Delta Seconds

Details

Search Details

Actor Tick

Start with Tick Enabled

Tick Interval (secs) 0.0

Allow Tick Before Begin

Damage

Damage 34.0

Sound

Bounce Sound

BOUNCE

None

Create New Asset

Sound Attenuation

Current Asset

Copy

Paste

Clear

Browse

Search Assets

BounceAttenuation
Sound Attenuation

1 item

View Options

BounceAttenuation (Sound Attenuation)

Path: /Game/Audio
Cooking Filepath Length: 117 / 260

My Blueprint

+ Add New | Search

Graphs

EventGraph

Event BeginPlay

Event ActorBeginOverlap

Event Tick

Functions (18 Overridable)

ConstructionScript

Macros

Variables

Components

Sphere

Event Dispatchers

BLUEPR

BP_DodgeballProjectile*

File Edit Asset View Debug Window Help

Parent class: Dodgeball Projectile

Compile Save Browse Find Hide Unrelated Class Settings Class Defaults Simulation Play

needs to be recompiled
(Ctrl + Alt) for more

Event Graph

BP_DodgeballProjectile > Event Graph

Zoom 1:1

Right-Click to Create New Nodes.

This node is disabled and will not be called.
Drag off pins to build functionality.

Event ActorBeginOverlap

Other Actor

This node is disabled and will not be called.
Drag off pins to build functionality.

Event Tick

Delta Seconds

BLUEPRINT

Components

+ Add Component

Search

BP_DodgeballProjectile(self)

- Sphere Component (Sphere Collis
  - Sphere
- Projectile Movement (Projectile M

My Blueprint

+ Add New

Search

Graphs

- EventGraph
  - Event BeginPlay
  - Event ActorBeginOverlap
  - Event Tick

Functions (18 Overridable)

- ConstructionScript

Macros

Variables

Components

- Sphere

Event Dispatchers

Details

Search Details

Actor Tick

Start with Tick Enabled	☑
Tick Interval (secs)	0.0
Allow Tick Before Begin	☐

Damage

Damage	34.0

Sound

Bounce Sound	BOUNCE
Bounce Sound Attenuati	BounceAttenuation

Replication

Only Relevant to Owner	☐
Always Relevant	☐
Replicate Movement	☐
Net Load on Client	☑
Net Use Owner Relevan	☐
Replay Rewindable	☐
Replicates	☐
Net Dormancy	Awake
Net Cull Distance Squar	225000000.0
Net Update Frequency	100.0
Min Net Update Frequen	2.0
Net Priority	1.0

Rendering

Actor Hidden In Game	☐

ThirdPersonExampleMap*
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Third Person
World Outliner
Search...
Label
Type
ThirdPersonExampleMap (World
ArenaGeometry
Folder
Arena
Folder
Floor
StaticMeshAc
Wall6
StaticMeshAc
Wall7
StaticMeshAc
Wall8
StaticMeshAc
Wall9
StaticMeshAc
Walkway
Folder
37 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
ThirdPersonCPP
Blueprints
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Dodgeball
Filters
Search Blueprints
BP_Dodgeball GameMode
BP_Dodgeball PlayerController
BP_Dodgeball Projectile
BP_Enemy Character
BP_GhostWall
BP_HUDWidget
BP_Restart Widget
BP_VictoryBox
BP_Wall
ThirdPerson Character
10 items (1 selected)
View Options

Exercise 9.04 Adding Background Music To Our Game

ThirdPersonExampleMap*

DDC | Dodgeball

File | Edit | Window | Help

Place Actors

Search Classes

Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes

Empty | Empty | Empty | Point | Playe | Cube | Spher | Cylinc | Cone | Plane

Save Current | Source Control | Modes | Content | Marketplace | Settings | Blueprints | Cinematics | Build | Compile

Perspective | Lit | Show | 10 | 10° | 0.25 | 4

Third Person

World Outliner

Search...

Label	Type
ThirdPersonExampleMap (World	
ArenaGeometry	Folder
Arena	Folder
Floor	StaticMeshAc
Wall6	StaticMeshAc
Wall7	StaticMeshAc
Wall8	StaticMeshAc
Wall9	StaticMeshAc
Walkway	Folder

26 actors | View Options

Details | World Settings

Select an object to view details.

Content Browser

Add/Import | Save All | Content ▸ Audio

Search Paths

Content
- Audio
- Geometry
- Mannequin
- Physics
- StarterContent
- ThirdPerson
- ThirdPersonCPP
  - Blueprints
  - Maps

C++ Classes
- Dodgeball

Filters | Search Audio

BOUNCE | Bounce Attenuation | Dodgeball

3 items

A change to a source content file has been detected.
Would you like to import it?

Import | Don't Import | Don't ask again | What Changed?

ThirdPersonExampleMap*
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
10
10°
0.25
4
Third Person
World Outliner
Search...
Label
Type
ThirdPersonExampleMap (World
ArenaGeometry
Folder
Arena
Folder
Floor
StaticMeshAc
Wall6
StaticMeshAc
Wall7
StaticMeshAc
Wall8
StaticMeshAc
Wall9
StaticMeshAc
Walkway
Folder
26 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
Audio
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Dodgeball
Filters
Search Audio
BOUNCE
Bounce Attenuation
Dodgeball
VGMA_21_Day__11
Play selected Sound Wave
4 items (1 selected)
View Options

ThirdPersonExampleMap*
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
10
10°
0.25
4
Third Person
World Outliner
Search...
Label
Type
ThirdPersonExampleMap (World
ArenaGeometry
Folder
Arena
Folder
Floor
StaticMeshAc
Wall6
StaticMeshAc
Wall7
StaticMeshAc
Wall8
StaticMeshAc
Wall9
StaticMeshAc
Walkway
Folder
26 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
C++ Classes
Dodgeball
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Dodgeball
Filters
Search Dodgeball
Dodgeball Character
Dodgeball FunctionLibrary
Dodge GameM
Folder
New Folder
C++ Class
New C++ Class...
odgeball rojectile
Enemy Character
Health Component
HealthInterface
HUDWidget
LookAtActor Component
RestartWidget
Right-Click
Create a new class in /Classes_Game/Dodgeball.
13 items
View Options

Add C++ Class

Choose Parent Class

This will add a C++ header and source code file to your game project.

Show All Classes

None

An empty C++ class with a default constructor and destructor.

Character

A character is a type of Pawn that includes the ability to walk around.

Pawn

A Pawn is an actor that can be 'possessed' and receive input from a controller.

Actor

An Actor is an object that can be placed or spawned in the world.

Actor Component

An ActorComponent is a reusable component that can be added to any actor.

Selected Class Actor

Selected Class Source Actor.h

Next > | Create Class | Cancel

Add C++ Class

Name Your New Actor

Enter a name for your new class. Class names may only contain alphanumeric characters, and may not contain a space.
When you click the "Create" button below, a header (.h) file and a source (.cpp) file will be made using this name.

Name	MusicManager	Dodgeball (Runtime)	Public Private
Path	C:/Users/sunje/Desktop/Unreal/Dodgeball/Source/Dodgeball/	Choose Folder	
Header File	C:/Users/sunje/Desktop/Unreal/Dodgeball/Source/Dodgeball/MusicManager.h		
Source File	C:/Users/sunje/Desktop/Unreal/Dodgeball/Source/Dodgeball/MusicManager.cpp		

Back | Create Class | Cancel

파일 수정 감지
'Dodgeball' 프로젝트가 환경 외부에서 수정되었습니다.
디스크에서 업데이트된 프로젝트를 로드하려면 [다시 로드]를 누르세요.
디스크에서 모든 항목을 다시 로드하려면 모든 외부 변경 및 작업이 완료된 후 [모두 다시 로드]를 누르세요
외부 변경을 무시하려면 [무시]를 누르세요. 변경 내용은 다음에 프로젝트를 열 때 사용됩니다.
다시 로드(R)
모두 다시 로드(A)
무시(I)
모두 무시(L)

파일(F) 편집(E) 보기(V) Git(G) 프로젝트(P) 빌드(B) 디버그(D) 테스트(S) 분석(N) 도구(T) 확장(X) 창(W) 도움말(H) 검색 (Ctrl+Q) Dodgeball

Develop Win64 로컬 Windows 디버거 Live Share

MusicManager.h* RestartWidget.h RestartWidget.cpp HealthComponent.h DodgeballProjectile.cpp

Dodgeball AMusicManager::UAudioComponent

```
// Fill out your copyright notice in the Description page of Project Settings.

#pragma once

#include "CoreMinimal.h"
#include "GameFramework/Actor.h"
#include "MusicManager.generated.h"

UCLASS()
class DODGEBALL_API AMusicManager : public AActor
{
    GENERATED_BODY()

public:
    // Sets default values for this actor's properties
    AMusicManager();

protected:
    // Called when the game starts or when spawned
    virtual void BeginPlay() override;

    UPROPERTY(VisibleAnywhere, BlueprintReadOnly)
    class UAudioComponent* AudioComponent;

public:
    // Called every frame
    virtual void Tick(float DeltaTime) override;

};
```

Ctrl+S

100 % 1 0 줄: 23 문자: 40 열: 43 탭 CRLF

솔루션 탐색기

솔루션 탐색기 검색(Ctrl+;)

솔루션 'Dodgeball' (2/2개 프로젝트)
- Engine
  - UE4
- Games
  - Dodgeball
    - 참조
    - 외부 종속성
    - Config
    - Source
      - Dodgeball
        - Dodgeball.Build.cs
        - Dodgeball.cpp
        - Dodgeball.h
        - DodgeballCharacter.cpp
        - DodgeballCharacter.h
        - DodgeballFunctionLibrary.
        - DodgeballFunctionLibrary.
        - DodgeballGameMode.cpp
        - DodgeballGameMode.h
        - DodgeballPlayerControlle
        - DodgeballPlayerControlle
        - DodgeballProjectile.cpp
        - DodgeballProjectile.h
        - EnemyCharacter.cpp
        - EnemyCharacter.h
        - HealthComponent.cpp
        - HealthComponent.h
        - HealthInterface.cpp

솔루션 탐색기 Git 변경 내용

준비 소스 제어에 추가

파일(F) 편집(E) 보기(V) Git(G) 프로젝트(P) 빌드(B) 디버그(D) 테스트(S) 분석(N) 도구(T) 확장(X) 창(W) 도움말(H) 검색 (Ctrl+Q) Dodgeball

Develop Win64 로컬 Windows 디버거 Live Share

MusicManager.cpp* MusicManager.h RestartWidget.h RestartWidget.cpp HealthComponent.h

Dodgeball → AMusicManager AMusicManager()

```
// Fill out your copyright notice in the Description page of Project Settings.


#include "MusicManager.h"
#include "Components/AudioComponent.h"

// Sets default values
AMusicManager::AMusicManager()
{
    // Set this actor to call Tick() every frame.  You can turn this off to improve performance if you don't need it.
    PrimaryActorTick.bCanEverTick = false;

    AudioComponent = CreateDefaultSubobject<UAudioComponent>(TEXT("Audio Component"));

}

// Called when the game starts or when spawned
void AMusicManager::BeginPlay()
{
    Super::BeginPlay();

}

// Called every frame
void AMusicManager::Tick(float DeltaTime)
{
    Super::Tick(DeltaTime);

}


```

Ctrl+S

100 % 문제가 검색되지 않음 줄: 13 문자: 84 열: 87 혼합 CRLF

솔루션 탐색기

솔루션 탐색기 검색(Ctrl+;)

- 솔루션 'Dodgeball' (2/2개 프로젝트)
  - Engine
    - UE4
  - Games
    - Dodgeball
      - 참조
      - 외부 종속성
      - Config
      - Source
        - Dodgeball
          - Dodgeball.Build.cs
          - Dodgeball.cpp
          - Dodgeball.h
          - DodgeballCharacter.cpp
          - DodgeballCharacter.h
          - DodgeballFunctionLibrary.
          - DodgeballFunctionLibrary.
          - DodgeballGameMode.cpp
          - DodgeballGameMode.h
          - DodgeballPlayerControlle
          - DodgeballPlayerControlle
          - DodgeballProjectile.cpp
          - DodgeballProjectile.h
          - EnemyCharacter.cpp
          - EnemyCharacter.h
          - HealthComponent.cpp
          - HealthComponent.h
          - HealthInterface.cpp

솔루션 탐색기 Git 변경 내용

준비 소스 제어에 추가

파일(F) 편집(E) 보기(V) Git(G) 프로젝트(P) 빌드(B) 디버그(D) 테스트(S) 분석(N) 도구(T) 확장(X) 창(W) 도움말(H) 검색 (Ctrl+Q) Dodgeball

Develop Live Share

솔루션 빌드(B) Ctrl+Shift+B
솔루션 다시 빌드
솔루션 정리(C)
솔루션의 전체 프로그램 데이터베이스 파일 빌드
솔루션에서 코드 분석 실행(Y) Alt+F11
Dodgeball 빌드(U) Ctrl+B
Dodgeball 다시 빌드(E)
Dodgeball 정리(N)
Dodgeball에서 코드 분석 실행(A)
프로젝트만(J)
일괄 빌드(T)...
구성 관리자(O)...
컴파일(M) Ctrl+F7
파일에서 코드 분석 실행(F) Ctrl+Shift+Alt+F7

MusicManager.cpp MusicManager.h

Dodgeball

```
// Fill out your copyright notice i


#include "MusicManager.h"
#include "Components/AudioComponent

// Sets default values
AMusicManager::AMusicManager()
{
    // Set this actor to call Tick(                                  't need it.
    PrimaryActorTick.bCanEverTick =

    AudioComponent = CreateDefaultS

}

// Called when the game starts or when spawned
void AMusicManager::BeginPlay()
{
    Super::BeginPlay();

}

// Called every frame
void AMusicManager::Tick(float DeltaTime)
{
    Super::Tick(DeltaTime);

}
```

100 % 문제가 검색되지 않음 줄: 13 문자: 84 열: 87 혼합 CRLF

솔루션 탐색기

솔루션 탐색기 검색(Ctrl+;)

- 솔루션 'Dodgeball' (2/2개 프로젝트)
  - Engine
    - UE4
  - Games
    - Dodgeball
      - 참조
      - 외부 종속성
      - Config
      - Source
        - Dodgeball
          - Dodgeball.Build.cs
          - Dodgeball.cpp
          - Dodgeball.h
          - DodgeballCharacter.cpp
          - DodgeballCharacter.h
          - DodgeballFunctionLibrary.
          - DodgeballFunctionLibrary.
          - DodgeballGameMode.cpp
          - DodgeballGameMode.h
          - DodgeballPlayerControlle
          - DodgeballPlayerControlle
          - DodgeballProjectile.cpp
          - DodgeballProjectile.h
          - EnemyCharacter.cpp
          - EnemyCharacter.h
          - HealthComponent.cpp
          - HealthComponent.h
          - HealthInterface.cpp

솔루션 탐색기 Git 변경 내용

저장되었습니다. 소스 제어에 추가

ThirdPersonExampleMap*

File Edit Window Help

Place Actors

Search Classes

Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes

Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane

Save Current | Source Control | Modes | Content | Marketplace | Settings | Blueprints | Cinematics | Build | Compile

Perspective | Lit | Show

Folder
New Folder
Import Asset
Import to /Game/ThirdPersonCPP/Blueprints...
Create Basic Asset
Blueprint Class
Level
Material
Particle System
Create Advanced Asset
Animation
Artificial Intelligence
Blendables
Blueprints
Editor Utilities
Foliage
FX
Live Link
Materials & Textures
Media
Miscellaneous
Paper2D
Physics
Sounds
User Interface

Blueprints are special assets that provide an intuitive, node-based interface that can be used to create new types of Actors and script level events; giving designers and gameplay programmers the tools to quickly create and iterate gameplay from within Unreal Editor without ever needing to write a line of code.

hold (Ctrl + Alt) for more

World Outliner

Search...

Label	Type
ThirdPersonExampleMap (World	
ArenaGeometry	Folder
Arena	Folder
Floor	StaticMeshAc
Wall6	StaticMeshAc
Wall7	StaticMeshAc
Wall8	StaticMeshAc
Wall9	StaticMeshAc
Walkway	Folder

26 actors | View Options

Content Browser

Add/Import | Save All | Content ▸ ThirdPersonCPP ▸ B

Search Paths

Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Dodgeball

Filters | Search Blueprints

BP_Dodgeball GameMode | BP_Dodgeball PlayerController | BP_Dodgeba Projectile | BP_VictoryBox | BP_Wall | ThirdPerson Character

10 items | View Options

Right-Click

Pick Parent Class
Common Classes
Actor
An Actor is an object that can be placed or spawned in the world.
Pawn
A Pawn is an actor that can be 'possessed' and receive input from a controller.
Character
A character is a type of Pawn that includes the ability to walk around.
Player Controller
A Player Controller is an actor responsible for controlling a Pawn used by the player.
Game Mode Base
Game Mode Base defines the game being played, its rules, scoring, and other facets of the game type.
Actor Component
An ActorComponent is a reusable component that can be added to any actor.
Scene Component
A Scene Component is a component that has a scene transform and can be attached to other scene
All Classes
mu
Object
Actor
MusicManager
AnimNotify
AnimNotify_PauseClothingSimulation (Pause Clothing Simulation)
AnimNotify_ResetClothingSimulation (Reset Clothing Simulation)
AnimNotify_ResumeClothingSimulation (Resume Clothing Simulation)
Visual
Widget
TextLayoutWidget
MultiLineEditableText (Editable Text (Multi-Line))
MultiLineEditableTextBox (Text Box (Multi-Line))
12 items (1 selected)
View Options
Select
Cancel

ThirdPersonExampleMap*
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
10
10°
0.25
4
Third Person
World Outliner
Search...
Label
Type
ThirdPersonExampleMap (World
ArenaGeometry
Folder
Arena
Folder
Floor
StaticMeshAc
Wall6
StaticMeshAc
Wall7
StaticMeshAc
Wall8
StaticMeshAc
Wall9
StaticMeshAc
Walkway
Folder
26 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
ThirdPersonCPP
Blueprints
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Dodgeball
Filters
Search Blueprints
BP_Dodgeball GameMode
BP_Dodgeball PlayerController
BP_Dodgeball Projectile
BP_Enemy Character
BP_GhostWall
BP_HUDWidget
BP_Restart Widget
BP_VictoryBox
BP_Wall
NewBlueprint
ThirdPerson Character
11 items (1 selected)
View Options

ThirdPersonExampleMap*
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
10
10°
0.25
4
Third Person
World Outliner
Search...
Label
Type
ThirdPersonExampleMap (World
ArenaGeometry
Folder
Arena
Folder
Floor
StaticMeshAc
Wall6
StaticMeshAc
Wall7
StaticMeshAc
Wall8
StaticMeshAc
Wall9
StaticMeshAc
Walkway
Folder
26 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
ThirdPersonCPP
Blueprints
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Dodgeball
Filters
Search Blueprints
BP_Dodgeball GameMode
BP_Dodgeball PlayerController
BP_Dodgeball Projectile
BP_Enemy Character
BP_GhostWall
BP_HUDWidge
BP_Music Manager
BP_Restart Widget
BP_VictoryBox
BP_Wall
ThirdPerson Character
11 items (1 selected)
View Options

BP_MusicManager*

File Edit Asset View Debug Window Help

Parent class: Music Manager

Components

+ Add Component | Search

BP_MusicManager(self)

Audio Component (Audio Compo

My Blueprint

+ Add New | Search

Graphs

EventGraph

Event BeginPlay

Event ActorBeginOverlap

Event Tick

Functions (18 Overridable)

ConstructionScript

Macros

Variables

Event Dispatchers

Compile | Save | Browse | Find | Hide Unrelated | Class Settings | Class Defaults | Simulation | Play

Viewport | Construction Scrip | Event Graph

Perspective | Lit | 10 | 10° | 0.25 | 4

Details

Search Details

Variable

Variable Name: AudioComponent

Tooltip:

Category: MusicManager

Editable when Inherited: ☑

Transform

Scale: X 1.0 Y 1.0 Z 1.0

Sockets

Parent Socket:

Sound

Sound: None | None

Override Subtitle Priority: ☐

Is UISound: ☐

Override Priority: ☐

Suppress Subtitles: ☐

Volume Multiplier: 1.0

Envelope Follower Attac: 10

Envelope Follower Relea: 100

Priority: 1.0

Subtitle Priority: 10000.0

Source Effect Chain: None | None

Pitch Multiplier: 1.0

Attenuation

Allow Spatialization: ☑

Override Attenuation: ☐

BP_MusicManager*

File Edit Asset View Debug Window Help

Parent class: Music Manager

Components

+ Add Component | Search

BP_MusicManager(self)

Audio Component (Audio Compo

Compile | Save | Browse | Find | Hide Unrelated | Class Settings | Class Defaults | Simulation | Play

Viewport | Construction Scrip | Event Graph

Perspective | Lit | 10 | 10° | 0.25 | 4

Details

Search Details

Variable

Variable Name: AudioComponent

Tooltip

Category: MusicManager

Editable when Inherited

Transform

Scale: X 1.0 Y 1.0 Z 1.0

Sockets

Parent Socket

Sound

None

My Blueprint

+ Add New | Search

Graphs

EventGraph

Event BeginPlay

Event ActorBeginOverlap

Event Tick

Functions (18 Overridable)

ConstructionScript

Macros

Variables

Event Dispatchers

Create New Asset

Sound Cue

Source Bus

Current Asset

Copy

Paste

Clear

Browse

Search Assets

Sound Wave

Starter_Music01

Sound Wave

Starter_Music_Cue

Sound Cue

Starter_Wind05

Sound Wave

Starter_Wind06

Sound Wave

Steam01

Sound Wave

Steam01_Cue

Sound Cue

VGMA_21_Day__11

Sound Wave

26 items

View Options

VGMA_21_Day__11 (Sound Wave)

Path: /Game/Audio

Cooking Filepath Length: 115 / 260

Duration: 89.521629

Sample Rate: 44,100

Looping: False

Mature: False

Num Channels: 2

Compression: 40

Class: None

Total Samples: 3,947,903.750000

Max Distance: 0.000000

Source File: VGMA 21 Day #11.wav

BP_MusicManager*
File
Edit
Asset
View
Debug
Window
Help
Parent class: Music Manager
Components
+ Add Component
Search
BP_MusicManager(self)
Audio Component (Audio Compo
Compile
Save
Browse
Find
Hide Unrelated
Class Settings
Class Defaults
Simulation
Play
needs to be recompiled
(Ctrl + Alt) for more
Event Graph
10
10°
0.25
4
My Blueprint
+ Add New
Search
Graphs
EventGraph
Event BeginPlay
Event ActorBeginOverlap
Event Tick
Functions (18 Overridable)
ConstructionScript
Macros
Variables
Event Dispatchers
Details
Search Details
Variable
Variable Name
AudioComponent
Tooltip
Category
MusicManager
Editable when Inherited
Transform
Scale
X 1.0
Y 1.0
Z 1.0
Sockets
Parent Socket
Sound
Sound
VGMA_21_Day__11
Override Subtitle Priority
Is UISound
Override Priority
Suppress Subtitles
Volume Multiplier
1.0
Envelope Follower Attac
10
Envelope Follower Relea
100
Priority
1.0
Subtitle Priority
10000.0
Source Effect Chain
None
None
Pitch Multiplier
1.0
Attenuation
Allow Spatialization
Override Attenuation

ThirdPersonExampleMap*
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
10
10°
0.25
4
Third Person
World Outliner
Search...
Label
Type
ThirdPersonExampleMap (World
ArenaGeometry
Folder
Arena
Folder
Floor
StaticMeshAc
Wall6
StaticMeshAc
Wall7
StaticMeshAc
Wall8
StaticMeshAc
Wall9
StaticMeshAc
Walkway
Folder
26 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
ThirdPersonCPP
Blueprints
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Dodgeball
Filters
Search Blueprints
BP_Dodgeball GameMode
BP_Dodgeball PlayerController
BP_Dodgeball Projectile
BP_Enemy Character
BP_GhostWall
BP_HUDWidget
BP_Music Manager
BP_Restart Widget
BP_VictoryBox
BP_Wall
ThirdPerson Character
11 items (1 selected)
View Options

ThirdPersonExampleMap*

File Edit Window Help

Place Actors

Search Classes

Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes

Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane

Save Current | Source Control | Modes | Content | Marketplace | Settings | Blueprints | Cinematics | Build | Compile

Perspective | Lit | Show

Third Person

Content Browser

Add/Import | Save All | Content ▸ ThirdPersonCPP ▸ Blueprints

Search Paths

Content
- Audio
- Geometry
- Mannequin
- Physics
- StarterContent
- ThirdPerson
- ThirdPersonCPP
  - Blueprints
  - Maps

C++ Classes
- Dodgeball

Filters | Search Blueprints

BP_Dodgeball GameMode | BP_Dodgeball PlayerController | BP_Dodgeball Projectile | BP_Enemy Character | BP_GhostWall | BP_HUDWidget | BP_Music Manager | BP_Restart Widget | BP_VictoryBox | BP_Wall | ThirdPerson Character

11 items (1 selected) | View Options

World Outliner

Search...

Label	Type
AtmosphericFog	AtmosphericF
SphereReflectionCapt	SphereReflec
1M_Cube_Chamfer	StaticMeshAc
BP_EnemyCharacter	Edit BP_Ene
BP_GhostWall	Edit BP_Gho
BP_MusicManager	Edit BP_Mu
BP_VictoryBox	Edit BP_Vict
BP_Wall	Edit BP_Wal
DocumentationActor1	Documentatic

27 actors (1 selected) | View Options

Details | World Settings

BP_MusicManager

+ Add Component | Edit Blueprint

Search Components

BP_MusicManager(self)

Search Details

Transform

Location	-780.0	550.0	130.0
Rotation	0.0°	0.0°	0.0°
Scale	1.0	1.0	1.0

Sound

Sound: VGMA_21_Day__1

Override Subtitle F
Is UISound
Override Priority
Suppress Subtitles
Volume Multiplier 1.0
Envelope Follower 10
Envelope Follower 100

Particle Systems (1)

- A particle
  - Essentially a position in a 3D space that can be represented with an image
- A Particle System
  - A collection of many particles, potentially with different images, shapes, colors, and sizes

Particle Systems (2)

< Two different Particle Systems in UE4 >

Exercise 9.05 Spawning a Particle System When The Dodgeball Hits The Player

파일(F) 편집(E) 보기(V) Git(G) 프로젝트(P) 빌드(B) 디버그(D) 테스트(S) 분석(N) 도구(T) 확장(X) 창(W) 도움말(H) 검색 (Ctrl+Q) Dodgeball

Develop | Win64 | 로컬 Windows 디버거 | Live Share

MusicManager.cpp | MusicManager.h | RestartWidget.cpp | HealthComponent.h | DodgeballProjectile.h*

Dodgeball | ADodgeballProjectile::UParticleSystem

```
public:
    // Sets default values for this actor's properties
    ADodgeballProjectile();

protected:
    // Called when the game starts or when spawned
    virtual void BeginPlay() override;

    // The damage the dodgeball will deal to the player's character
    UPROPERTY(EditAnywhere, Category = Damage)
    float Damage = 34.f;

    // The sound the dodgeball will make when it bounces off of a surface
    UPROPERTY(EditAnywhere, Category = Sound)
    class USoundBase* BounceSound;

    // The sound attenuation of the previous sound
    UPROPERTY(EditAnywhere, Category = Sound)
    class USoundAttenuation* BounceSoundAttenuation;

    // The particle system the dodgeball will spawn when it hits the player
    UPROPERTY(EditAnywhere, Category = Particles)
    class UParticleSystem* HitParticles;

public:
    // Called every frame
    virtual void Tick(float DeltaTime) override;

    UFUNCTION()
    void OnHit(UPrimitiveComponent* HitComp, AActor* OtherActor, UPrimitiveComponent* OtherComp, FVector NormalImpulse,
               const FHitResult& Hit);

    FORCEINLINE UProjectileMovementComponent* GetProjectileMovementComponent() const
    {
```

Ctrl+S

100 % | 문제가 검색되지 않음 | 줄: 43 문자: 38 열: 41 탭 CRLF

솔루션 탐색기 검색(Ctrl+;)

- 솔루션 'Dodgeball' (2/2개 프로젝트)
  - Engine
    - UE4
  - Games
    - Dodgeball
      - 참조
      - 외부 종속성
      - Config
      - Source
        - Dodgeball
          - Dodgeball.Build.cs
          - Dodgeball.cpp
          - Dodgeball.h
          - DodgeballCharacter.cpp
          - DodgeballCharacter.h
          - DodgeballFunctionLibrary.
          - DodgeballFunctionLibrary.
          - DodgeballGameMode.cpp
          - DodgeballGameMode.h
          - DodgeballPlayerControlle
          - DodgeballPlayerControlle
          - DodgeballProjectile.cpp
          - DodgeballProjectile.h
          - EnemyCharacter.cpp
          - EnemyCharacter.h
          - HealthComponent.cpp
          - HealthComponent.h
          - HealthInterface.cpp

솔루션 탐색기 | Git 변경 내용

준비 | 소스 제어에 추가

파일(F) 편집(E) 보기(V) Git(G) 프로젝트(P) 빌드(B) 디버그(D) 테스트(S) 분석(N) 도구(T) 확장(X) 창(W) 도움말(H) 검색 (Ctrl+Q) Dodgeball

Develop | Win64 | 로컬 Windows 디버거 | Live Share

MusicManager.cpp | MusicManager.h | HealthComponent.h | DodgeballProjectile.h | DodgeballProjectile.cpp*

Dodgeball | ADodgeballProjectile | OnHit(UPrimitiveComponent * HitComp, AActor

```
void ADodgeballProjectile::BeginPlay()
{
    Super::BeginPlay();

    SetLifeSpan(5.f);
}

// Called every frame
void ADodgeballProjectile::Tick(float DeltaTime)
{
    Super::Tick(DeltaTime);

}

void ADodgeballProjectile::OnHit(UPrimitiveComponent* HitComp, AActor* OtherActor, UPrimitiveComponent* OtherComp,
                                 FVector NormalImpulse, const FHitResult& Hit)
{
    if (BounceSound != nullptr && NormalImpulse.Size() > 6000.0f) {
        UGameplayStatics::PlaySoundAtLocation(this, BounceSound, GetActorLocation(), 1.0f, FMath::RandRange(0.7f, 1.3f),
                                              0.0f, BounceSoundAttenuation);
    }

    ADodgeballCharacter* Player = Cast<ADodgeballCharacter>(OtherActor);
    if (Player != nullptr) {
        UHealthComponent* HealthComponent = Player->FindComponentByClass<UHealthComponent>();
        if (HealthComponent != nullptr) {
            HealthComponent->LoseHealth(Damage);
        }
        if (HitParticles != nullptr) {
            UGameplayStatics::SpawnEmitterAtLocation(GetWorld(), HitParticles, GetActorTransform());
        }
        Destroy();
    }
}
```

Ctrl+S

100 % | 문제가 검색되지 않음 | 줄: 66 문자: 92 열: 101 혼합 CRLF

솔루션 탐색기

솔루션 탐색기 검색(Ctrl+;)

- 솔루션 'Dodgeball' (2/2개 프로젝트)
  - Engine
    - UE4
  - Games
    - Dodgeball
      - 참조
      - 외부 종속성
      - Config
      - Source
        - Dodgeball
          - Dodgeball.Build.cs
          - Dodgeball.cpp
          - Dodgeball.h
          - DodgeballCharacter.cpp
          - DodgeballCharacter.h
          - DodgeballFunctionLibrary.
          - DodgeballFunctionLibrary.
          - DodgeballGameMode.cpp
          - DodgeballGameMode.h
          - DodgeballPlayerControlle
          - DodgeballPlayerControlle
          - DodgeballProjectile.cpp
          - DodgeballProjectile.h
          - EnemyCharacter.cpp
          - EnemyCharacter.h
          - HealthComponent.cpp
          - HealthComponent.h
          - HealthInterface.cpp

솔루션 탐색기 | Git 변경 내용

준비 | 소스 제어에 추가

파일(F) 편집(E) 보기(V) Git(G) 프로젝트(P) 빌드(B) 디버그(D) 테스트(S) 분석(N) 도구(T) 확장(X) 창(W) 도움말(H) 검색 (Ctrl+Q) Dodgeball

Develop Live Share

MusicManager.cpp MusicManager.h

Dodgeball

```
void ADodgeballProjectile::BeginPla
{
    Super::BeginPlay();

    SetLifeSpan(5.f);
}

// Called every frame
void ADodgeballProjectile::Tick(flo
{
    Super::Tick(DeltaTime);

}

void ADodgeballProjectile::OnHit(UP
{
    if (BounceSound != nullptr && NormalImpulse.Size() > 6000.0f) {
        UGameplayStatics::PlaySoundAtLocation(this, BounceSound, GetActorLocation(), 1.0f, FMath::RandRange(0.7f, 1.3f),
                                              0.0f, BounceSoundAttenuation);
    }

    ADodgeballCharacter* Player = Cast<ADodgeballCharacter>(OtherActor);
    if (Player != nullptr) {
        UHealthComponent* HealthComponent = Player->FindComponentByClass<UHealthComponent>();
        if (HealthComponent != nullptr) {
            HealthComponent->LoseHealth(Damage);
        }
        if (HitParticles != nullptr) {
            UGameplayStatics::SpawnEmitterAtLocation(GetWorld(), HitParticles, GetActorTransform());
        }
        Destroy();
    }
}
```

솔루션 빌드(B)	Ctrl+Shift+B
솔루션 다시 빌드	
솔루션 정리(C)	
솔루션의 전체 프로그램 데이터베이스 파일 빌드	
솔루션에서 코드 분석 실행(Y)	Alt+F11
Dodgeball 빌드(U)	Ctrl+B
Dodgeball 다시 빌드(E)	
Dodgeball 정리(N)	
Dodgeball에서 코드 분석 실행(A)	
프로젝트만(J)	
일괄 빌드(T)...	
구성 관리자(O)...	
컴파일(M)	Ctrl+F7
파일에서 코드 분석 실행(F)	Ctrl+Shift+Alt+F7

솔루션 탐색기

솔루션 탐색기 검색(Ctrl+;)

- 솔루션 'Dodgeball' (2/2개 프로젝트)
  - Engine
    - UE4
  - Games
    - Dodgeball
      - 참조
      - 외부 종속성
      - Config
      - Source
        - Dodgeball
          - Dodgeball.Build.cs
          - Dodgeball.cpp
          - Dodgeball.h
          - DodgeballCharacter.cpp
          - DodgeballCharacter.h
          - DodgeballFunctionLibrary.
          - DodgeballFunctionLibrary.
          - DodgeballGameMode.cpp
          - DodgeballGameMode.h
          - DodgeballPlayerControlle
          - DodgeballPlayerControlle
          - DodgeballProjectile.cpp
          - DodgeballProjectile.h
          - EnemyCharacter.cpp
          - EnemyCharacter.h
          - HealthComponent.cpp
          - HealthComponent.h
          - HealthInterface.cpp

100 % 문제가 검색되지 않음 줄: 66 문자: 92 열: 101 혼합 CRLF

솔루션 탐색기 Git 변경 내용

저장되었습니다. 소스 제어에 추가

ThirdPersonExampleMap*
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
World Outliner
Search...
Label
Type
AtmosphericFog
SphereReflectionCapt
1M_Cube_Chamfer
BP_EnemyCharacter
BP_GhostWall
BP_MusicManager
BP_VictoryBox
BP_Wall
DocumentationActor1
27 actors (1 selected)
View Options
Details
World Settings
BP_MusicManager
Add Component
Edit Blueprint
Search Components
BP_MusicManager(self)
Search Details
Transform
Location
Rotation
Scale
Sound
Override Subtitle F
Is UISound
Override Priority
Suppress Subtitles
Volume Multiplier
Envelope Follower
Envelope Follower
Content Browser
Add/Import
Save All
Content
ThirdPersonCPP
Blueprints
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Dodgeball
Filters
Search Blueprints
BP_Dodgeball GameMode
BP_Dodgeball PlayerController
BP_Dodgeball Projectile
BP_Enemy Character
BP_GhostWall
BP_HUDWidget
BP_Music Manager
BP_Restart Widget
BP_VictoryBox
BP_Wall
ThirdPerson Character
11 items (1 selected)
View Options

BP_DodgeballProjectile
File Edit Asset View Debug Window Help
Parent class: Dodgeball Projectile
Components
Add Component
Search
BP_DodgeballProjectile(self)
Sphere Component (Sphere Collis
Sphere
Projectile Movement (Projectile M
Compile
Save
Browse
Find
Hide Unrelated
Class Settings
Class Defaults
Simulation
Play
Viewport
Construction Scrip
Event Graph
BP_DodgeballProjectile > Event Graph
Zoom 1:1
Right-Click to Create New Nodes.
This node is disabled and will not be called.
Drag off pins to build functionality.
Event ActorBeginOverlap
Other Actor
This node is disabled and will not be called.
Drag off pins to build functionality.
Event Tick
Delta Seconds
BLUEPRINT
My Blueprint
Add New
Search
Graphs
EventGraph
Event BeginPlay
Event ActorBeginOverlap
Event Tick
Functions (18 Overridable)
ConstructionScript
Macros
Variables
Components
Sphere
Event Dispatchers
Details
Search Details
Damage
Damage
34.0
Actor Tick
Start with Tick Enabled
Tick Interval (secs)
0.0
Allow Tick Before Begin
Sound
Bounce Sound
BOUNCE
Bounce Sound Attenuati
BounceAttenuation
Particles
Hit Particles
None
None
Replication
Only Relevant to Owner
Always Relevant
Replicate Movement
Net Load on Client
Net Use Owner Relevan
Replay Rewindable
Replicates
Net Dormancy
Awake
Net Cull Distance Squar
225000000.0
Net Update Frequency
100.0

BP_DodgeballProjectile

File Edit Asset View Debug Window Help

Parent class: Dodgeball Projectile

Components

+ Add Component | Search

BP_DodgeballProjectile(self)

Sphere Component (Sphere Collis

Sphere

Projectile Movement (Projectile M

My Blueprint

+ Add New | Search

Graphs

EventGraph

Event BeginPlay

Event ActorBeginOverlap

Event Tick

Functions (18 Overridable)

ConstructionScript

Macros

Variables

Components

Sphere

Event Dispatchers

Compile | Save | Browse | Find | Hide Unrelated | Class Settings | Class Defaults | Simulation | Play

Viewport | Construction Scrip | Event Graph

BP_DodgeballProjectile > Event Graph

Zoom 1:1

Right-Click to Create New Nodes.

This node is disabled and will not be called.
Drag off pins to build functionality.

Event ActorBeginOverlap

Other Actor

This node is disabled and will not be called.
Drag off pins to build functionality.

Event Tick

Delta Seconds

BLUEPRINT

Details

Search Deta

Damage

Damage

Actor Tic

Start with Ti

Tick Interva

Allow Tick B

Sound

Bounce Sou

Bounce Sou

Particles

Hit Particles

Replication

Only Relevant to Owner

Always Relevant

Replicate Movement

Net Load on Client

Net Use Owner Relevan

Replay Rewindable

Replicates

Net Dormancy: Awake

Net Cull Distance Squar: 225000000.0

Net Update Frequency: 100.0

Create New Asset

Particle System

Current Asset

Copy

Paste

Clear

Browse

Search Assets

P_Ambient_Dust
Particle System

P_Explosion
Particle System

P_Fire
Particle System

P_Smoke
Particle System

P_Sparks
Particle System

P_Steam_Lit
Particle System

6 items | View Options

P_Explosion (Particle System)

Path: /Game/StarterContent/Particles
Cooking Filepath Length: 130 / 260
Delay: 0.000000
System Update Mode: Real Time
Has GPUEmitter: True

BP_DodgeballProjectile
File
Edit
Asset
View
Debug
Window
Help
Parent class: Dodgeball Projectile
Components
Add Component
Search
BP_DodgeballProjectile(self)
Sphere Component (Sphere Collis
Sphere
Projectile Movement (Projectile M
Compile
Save
Browse
Find
Hide Unrelated
Class Settings
Class Defaults
Simulation
Play
needs to be recompiled
(Ctrl + Alt) for more
Event Graph
BP_DodgeballProjectile > Event Graph
Zoom 1:1
Right-Click to Create New Nodes.
This node is disabled and will not be called.
Drag off pins to build functionality.
Event ActorBeginOverlap
Other Actor
This node is disabled and will not be called.
Drag off pins to build functionality.
Event Tick
Delta Seconds
BLUEPRINT
My Blueprint
Add New
Search
Graphs
EventGraph
Event BeginPlay
Event ActorBeginOverlap
Event Tick
Functions (18 Overridable)
ConstructionScript
Macros
Variables
Components
Sphere
Event Dispatchers
Details
Search Details
Damage
Damage
34.0
Actor Tick
Start with Tick Enabled
Tick Interval (secs)
0.0
Allow Tick Before Begin
Sound
Bounce Sound
BOUNCE
Bounce Sound Attenuati
BounceAttenuation
Particles
Hit Particles
P_Explosion
Replication
Only Relevant to Owner
Always Relevant
Replicate Movement
Net Load on Client
Net Use Owner Relevan
Replay Rewindable
Replicates
Net Dormancy
Awake
Net Cull Distance Squar
225000000.0
Net Update Frequency
100.0

ThirdPersonExampleMap*
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Shift+F1 for Mouse Cursor
World Outliner
Search...
Label
Type
AtmosphericFog
SphereReflectionCapt
1M_Cube_Chamfer
AIController
BP_DodgeballGameMod
BP_DodgeballPlayerCor
BP_EnemyCharacter
BP_GhostWall
BP_MusicManager
38 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
ThirdPersonCPP
Blueprints
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Dodgeball
Filters
Search Blueprints
BP_Dodgeball GameMode
BP_Dodgeball PlayerController
BP_Dodgeball Projectile
BP_Enemy Character
BP_GhostWall
BP_HUDWidget
BP_Music Manager
BP_Restart Widget
BP_VictoryBox
BP_Wall
ThirdPerson Character
11 items (1 selected)
View Options

Activity 9.01 Playing a Sound When The Dodgeball Hits The Player

ThirdPersonExampleMap*

File Edit Window Help

Place Actors

Search Classes

Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes

Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane

Save Current | Source Control | Modes | Content | Marketplace | Settings | Blueprints | Cinematics | Build | Compile

Perspective | Lit | Show | 10 | 10° | 0.25 | 4

Third Person

World Outliner

Search...

Label	Type
AtmosphericFog	Atmospheric
SphereReflectionCapt	SphereReflec
1M_Cube_Chamfer	StaticMeshAc
BP_EnemyCharacter	Edit BP_Ene
BP_GhostWall	Edit BP_Ghc
BP_MusicManager	Edit BP_Mu
BP_VictoryBox	Edit BP_Vict
BP_Wall	Edit BP_Wal
DocumentationActor1	Documentatic

27 actors (1 selected) View Options

Details | World Settings

BP_MusicManager

+ Add Component | Edit Blueprint

Search Components

BP_MusicManager(self)

Search Details

Transform

Location	-780.0	550.0	130.0
Rotation	0.0°	0.0°	0.0°
Scale	1.0	1.0	1.0

Sound

Sound VGMA_21_Day__1

Override Subtitle F

Is UISound

Override Priority

Content Browser

Add/Import | Save All | Content ▸ Audio

Search Paths

Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Dodgeball

Filters | Search Audio

BOUNCE | Bounce Attenuation | Dodgeball | VGMA_21_Day__11

4 items

A change to a source content file has been detected.
Would you like to import it?

Import | Don't Import | Don't ask again | What Changed?

ThirdPersonExampleMap*

File Edit Window Help

Place Actors

Search Classes

Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes

Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane

Save Current | Source Control | Modes | Content | Marketplace | Settings | Blueprints | Cinematics | Build | Compile

Perspective | Lit | Show | 10 | 10° | 0.25 | 4

Third Person

World Outliner

Search...

Label	Type
AtmosphericFog	Atmospheric
SphereReflectionCapt	SphereReflec
1M_Cube_Chamfer	StaticMeshAc
BP_EnemyCharacter	Edit BP_Ene
BP_GhostWall	Edit BP_Ghc
BP_MusicManager	Edit BP_Mu
BP_VictoryBox	Edit BP_Vict
BP_Wall	Edit BP_Wal
DocumentationActor1	Documentatic

27 actors (1 selected) View Options

Details | World Settings

BP_MusicManager

+ Add Component | Edit Blueprint

Search Components

BP_MusicManager(self)

Search Details

Transform

Location	-780.0	550.0	130.0
Rotation	0.0 °	0.0 °	0.0 °
Scale	1.0	1.0	1.0

Sound

Sound: VGMA_21_Day__1

Override Subtitle F
Is UISound
Override Priority
Suppress Subtitles
Volume Multiplier 1.0
Envelope Follower 10
Envelope Follower 100

Content Browser

Add/Import | Save All | Content ▸ Audio

Search Paths

Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Dodgeball

Filters | Search Audio

BOUNCE | Bounce Attenuation | Dodgeball | VGMA_21_Day__11 | PUNCH

Play selected Sound Wave

5 items (1 selected) View Options

ThirdPersonExampleMap*
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
10
10°
0.25
4
Third Person
World Outliner
Search...
Label
Type
AtmosphericFog
SphereReflectionCapt
1M_Cube_Chamfer
BP_EnemyCharacter
BP_GhostWall
BP_MusicManager
BP_VictoryBox
BP_Wall
DocumentationActor1
27 actors (1 selected)
View Options
Details
World Settings
BP_MusicManager
Add Component
Edit Blueprint
Search Components
BP_MusicManager(self)
Search Details
Transform
Location
Rotation
Scale
-780.0
550.0
130.0
0.0
0.0
0.0
1.0
1.0
1.0
Sound
Sound
VGMA_21_Day__1
Override Subtitle F
Is UISound
Override Priority
Suppress Subtitles
Volume Multiplier
1.0
Envelope Follower
10
Envelope Follower
100
Content Browser
Add/Import
Save All
C++ Classes
Dodgeball
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Dodgeball
Filters
Search Dodgeball
Dodgeball Character
Dodgeball FunctionLibrary
Dodgeball GameMode
Dodgeball PlayerController
Dodgeball Projectile
Enemy Character
Health Component
HealthInterface
HUDWidget
LookAtActor Component
MusicManager
14 items (1 selected)
View Options

파일(F) 편집(E) 보기(V) Git(G) 프로젝트(P) 빌드(B) 디버그(D) 테스트(S) 분석(N) 도구(T) 확장(X) 창(W) 도움말(H) 검색 (Ctrl+Q) Dodgeball

Develop | Win64 | 로컬 Windows 디버거 | Live Share

MusicManager.cpp | MusicManager.h | HealthComponent.h | DodgeballProjectile.h* | DodgeballProjectile.cpp

Dodgeball | ADodgeballProjectile::USoundBase

```
20
21  public:
22      // Sets default values for this actor's properties
23      ADodgeballProjectile();
24
25  protected:
26      // Called when the game starts or when spawned
27      virtual void BeginPlay() override;
28
29      // The damage the dodgeball will deal to the player's character
30      UPROPERTY(EditAnywhere, Category = Damage)
31      float Damage = 34.f;
32
33      // The sound the dodgeball will make when it bounces off of a surface
34      UPROPERTY(EditAnywhere, Category = Sound)
35      class USoundBase* BounceSound;
36
37      // The sound attenuation of the previous sound
38      UPROPERTY(EditAnywhere, Category = Sound)
39      class USoundAttenuation* BounceSoundAttenuation;
40
41      // The particle system the dodgeball will spawn when it hits the player
42      UPROPERTY(EditAnywhere, Category = Particles)
43      class UParticleSystem* HitParticles;
44
45      // The sound the dodgeball will make when it hits the player
46      UPROPERTY(EditAnywhere, Category = Sound)
47      class USoundBase* DamageSound;
48
49  public:
50      // Called every frame
51      virtual void Tick(float DeltaTime) override;
52
53      UFUNCTION()
54      void OnHit(UPrimitiveComponent* HitComp, AActor* OtherActor, UPrimitiveComponent* OtherComp, FVector NormalImpulse,
```

Ctrl+S

100 % | 문제가 검색되지 않음 | 줄: 47 문자: 32 열: 35 탭 CRLF

솔루션 탐색기

솔루션 탐색기 검색(Ctrl+;)

- 솔루션 'Dodgeball' (2/2개 프로젝트)
  - Engine
    - UE4
  - Games
    - Dodgeball
      - 참조
      - 외부 종속성
      - Config
      - Source
        - Dodgeball
          - Dodgeball.Build.cs
          - Dodgeball.cpp
          - Dodgeball.h
          - DodgeballCharacter.cpp
          - DodgeballCharacter.h
          - DodgeballFunctionLibrary.
          - DodgeballFunctionLibrary.
          - DodgeballGameMode.cpp
          - DodgeballGameMode.h
          - DodgeballPlayerControlle
          - DodgeballPlayerControlle
          - DodgeballProjectile.cpp
          - DodgeballProjectile.h
          - EnemyCharacter.cpp
          - EnemyCharacter.h
          - HealthComponent.cpp
          - HealthComponent.h
          - HealthInterface.cpp

솔루션 탐색기 | Git 변경 내용

준비 | 소스 제어에 추가

파일(F) 편집(E) 보기(V) Git(G) 프로젝트(P) 빌드(B) 디버그(D) 테스트(S) 분석(N) 도구(T) 확장(X) 창(W) 도움말(H) 검색 (Ctrl+Q) Dodgeball

Develop | Win64 | 로컬 Windows 디버거 | Live Share

MusicManager.cpp | MusicManager.h | HealthComponent.h | DodgeballProjectile.h | DodgeballProjectile.cpp*

Dodgeball | ADodgeballProjectile | OnHit(UPrimitiveComponent * HitComp, AActor

```
43
44      // Called every frame
45      void ADodgeballProjectile::Tick(float DeltaTime)
46      {
47          Super::Tick(DeltaTime);
48
49      }
50
51      void ADodgeballProjectile::OnHit(UPrimitiveComponent* HitComp, AActor* OtherActor, UPrimitiveComponent* OtherComp,
52                                       FVector NormalImpulse, const FHitResult& Hit)
53      {
54          if (BounceSound != nullptr && NormalImpulse.Size() > 6000.0f) {
55              UGameplayStatics::PlaySoundAtLocation(this, BounceSound, GetActorLocation(), 1.0f, FMath::RandRange(0.7f, 1.3f),
56                                                    0.0f, BounceSoundAttenuation);
57          }
58
59          ADodgeballCharacter* Player = Cast<ADodgeballCharacter>(OtherActor);
60          if (Player != nullptr) {
61              UHealthComponent* HealthComponent = Player->FindComponentByClass<UHealthComponent>();
62              if (HealthComponent != nullptr) {
63                  HealthComponent->LoseHealth(Damage);
64              }
65              if (HitParticles != nullptr) {
66                  UGameplayStatics::SpawnEmitterAtLocation(GetWorld(), HitParticles, GetActorTransform());
67              }
68              if (DamageSound != nullptr) {
69                  UGameplayStatics::PlaySound2D(this, DamageSound);
70              }
71              Destroy();
72          }
73      }
74
```

Ctrl+S

100 % | 문제가 검색되지 않음 | 줄: 69 | 문자: 53 | 열: 62 | 혼합 | CRLF

솔루션 탐색기

솔루션 탐색기 검색(Ctrl+;)

- 솔루션 'Dodgeball' (2/2개 프로젝트)
  - Engine
    - UE4
  - Games
    - Dodgeball
      - 참조
      - 외부 종속성
      - Config
      - Source
        - Dodgeball
          - Dodgeball.Build.cs
          - Dodgeball.cpp
          - Dodgeball.h
          - DodgeballCharacter.cpp
          - DodgeballCharacter.h
          - DodgeballFunctionLibrary.
          - DodgeballFunctionLibrary.
          - DodgeballGameMode.cpp
          - DodgeballGameMode.h
          - DodgeballPlayerControlle
          - DodgeballPlayerControlle
          - DodgeballProjectile.cpp
          - DodgeballProjectile.h
          - EnemyCharacter.cpp
          - EnemyCharacter.h
          - HealthComponent.cpp
          - HealthComponent.h
          - HealthInterface.cpp

솔루션 탐색기 | Git 변경 내용

저장되었습니다. | 소스 제어에 추가

파일(F) 편집(E) 보기(V) Git(G) 프로젝트(P) 빌드(B) 디버그(D) 테스트(S) 분석(N) 도구(T) 확장(X) 창(W) 도움말(H) 검색 (Ctrl+Q) Dodgeball

Develop Live Share

- 솔루션 빌드(B) Ctrl+Shift+B
- 솔루션 다시 빌드
- 솔루션 정리(C)
- 솔루션의 전체 프로그램 데이터베이스 파일 빌드
- 솔루션에서 코드 분석 실행(Y) Alt+F11
- Dodgeball 빌드(U) Ctrl+B
- Dodgeball 다시 빌드(E)
- Dodgeball 정리(N)
- Dodgeball에서 코드 분석 실행(A)
- 프로젝트만(J)
- 일괄 빌드(T)...
- 구성 관리자(O)...
- 컴파일(M) Ctrl+F7
- 파일에서 코드 분석 실행(F) Ctrl+Shift+Alt+F7

MusicManager.cpp MusicManager.h

Dodgeball

```
43
44      // Called every frame
45      void ADodgeballProjectile::Tick(flo
46      {
47          Super::Tick(DeltaTime);
48
49      }
50
51      void ADodgeballProjectile::OnHit(UP
52      {
53          if (BounceSound != nullptr && N
54              UGameplayStatics::PlaySounc
55
56          }
57
58          ADodgeballCharacter* Player = Cast<ADodgeballCharacter>(OtherActor);
59          if (Player != nullptr) {
60              UHealthComponent* HealthComponent = Player->FindComponentByClass<UHealthComponent>();
61              if (HealthComponent != nullptr) {
62                  HealthComponent->LoseHealth(Damage);
63              }
64              if (HitParticles != nullptr) {
65                  UGameplayStatics::SpawnEmitterAtLocation(GetWorld(), HitParticles, GetActorTransform());
66              }
67              if (DamageSound != nullptr) {
68                  UGameplayStatics::PlaySound2D(this, DamageSound);
69              }
70              Destroy();
71          }
72      }
73
74
```

nent * HitComp, AActor

cherComp,

ge(0.7f, 1.3f),

100 % 문제가 검색되지 않음 줄: 69 문자: 53 열: 62 혼합 CRLF

솔루션 탐색기

솔루션 탐색기 검색(Ctrl+;)

- 솔루션 'Dodgeball' (2/2개 프로젝트)
  - Engine
    - UE4
  - Games
    - Dodgeball
      - 참조
      - 외부 종속성
      - Config
      - Source
        - Dodgeball
          - Dodgeball.Build.cs
          - Dodgeball.cpp
          - Dodgeball.h
          - DodgeballCharacter.cpp
          - DodgeballCharacter.h
          - DodgeballFunctionLibrary.
          - DodgeballFunctionLibrary.
          - DodgeballGameMode.cpp
          - DodgeballGameMode.h
          - DodgeballPlayerController
          - DodgeballPlayerController
          - DodgeballProjectile.cpp
          - DodgeballProjectile.h
          - EnemyCharacter.cpp
          - EnemyCharacter.h
          - HealthComponent.cpp
          - HealthComponent.h
          - HealthInterface.cpp

솔루션 탐색기 Git 변경 내용

저장되었습니다. 소스 제어에 추가

ThirdPersonExampleMap*
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
World Outliner
Search...
Label
Type
AtmosphericFog
SphereReflectionCapt
1M_Cube_Chamfer
BP_EnemyCharacter
BP_GhostWall
BP_MusicManager
BP_VictoryBox
BP_Wall
DocumentationActor1
27 actors (1 selected)
View Options
Details
World Settings
BP_MusicManager
Add Component
Edit Blueprint
Search Components
BP_MusicManager(self)
Search Details
Transform
Location
Rotation
Scale
Sound
Override Subtitle F
Is UISound
Override Priority
Suppress Subtitles
Volume Multiplier
Envelope Follower
Envelope Follower
Content Browser
Add/Import
Save All
Content
ThirdPersonCPP
Blueprints
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Dodgeball
Filters
Search Blueprints
BP_Dodgeball GameMode
BP_Dodgeball PlayerController
BP_Dodgeball Projectile
BP_Enemy Character
BP_GhostWall
BP_HUDWidget
BP_Music Manager
BP_Restart Widget
BP_VictoryBox
BP_Wall
ThirdPerson Character
11 items (1 selected)
View Options

BP_DodgeballProjectile

File Edit Asset View Debug Window Help

Parent class: Dodgeball Projectile

Components

+ Add Component | Search

BP_DodgeballProjectile(self)

Sphere Component (Sphere Collis

Sphere

Projectile Movement (Projectile M

My Blueprint

+ Add New | Search

Graphs

EventGraph

Event BeginPlay

Event ActorBeginOverlap

Event Tick

Functions (18 Overridable)

ConstructionScript

Macros

Variables

Components

Sphere

Event Dispatchers

Compile | Save | Browse | Find | Hide Unrelated | Class Settings | Class Defaults | Simulation | Play

Viewport | Construction Scrip | Event Graph

BP_DodgeballProjectile > Event Graph

Zoom 1:1

Right-Click to Create New Nodes.

This node is disabled and will not be called.
Drag off pins to build functionality.

Event ActorBeginOverlap

Other Actor

This node is disabled and will not be called.
Drag off pins to build functionality.

Event Tick

Delta Seconds

BLUEPRINT

Details

Search Details

Damage

Damage 34.0

Actor Tick

Start with Tick Enabled

Tick Interval (secs) 0.0

Allow Tick Before Begin

Sound

Bounce Sound BOUNCE

Bounce Sound Attenuati BounceAttenuation

Damage Sound None

Particles

Hit Particles P_Explosion

Replication

Only Relevant to Owner

Always Relevant

Replicate Movement

Net Load on Client

Net Use Owner Relevan

Replay Rewindable

Replicates

BP_DodgeballProjectile

File Edit Asset View Debug Window Help

Components

+ Add Component | Search

BP_DodgeballProjectile(self)

Sphere Component (Sphere Collis

Sphere

Projectile Movement (Projectile M

My Blueprint

+ Add New | Search

Graphs

EventGraph

Event BeginPlay

Event ActorBeginOverlap

Event Tick

Functions (18 Overridable)

ConstructionScript

Macros

Variables

Components

Sphere

Event Dispatchers

Compile | Save | Browse | Find | Hide Unrelated | Class Settings | Class Defaults | Simulation | Play

Viewport | Construction Scrip | Event Graph

BP_DodgeballProjectile > Event Graph

Zoom 1:1

Right-Click to Create New Nodes.

This node is disabled and will not be called.
Drag off pins to build functionality.

Event ActorBeginOverlap

Other Actor

This node is disabled and will not be called.
Drag off pins to build functionality.

Event Tick

Delta Seconds

BLUEPRINT

Details

Search Deta

Damage

Damage

Actor Tic

Start with Ti

Tick Interva

Allow Tick B

Sound

Bounce Sou

Bounce Sou

Damage Sound

Particles

Hit Particles

Replication

Only Relevant to Owner

Always Relevant

Replicate Movement

Net Load on Client

Net Use Owner Relevan

Replay Rewindable

Replicates

Create New Asset

Sound Cue

Source Bus

Current Asset

Copy

Paste

Clear

Browse

Search Assets

Light01_Cue
Sound Cue

Light02
Sound Wave

Light02_Cue
Sound Cue

PUNCH
Sound Wave

Smoke01
Sound Wave

Smoke01_Cue
Sound Cue

Starter_Background_Cue
Sound Cue

Starter_Birds01

27 items | View Options

PUNCH (Sound Wave)

Path: /Game/Audio
Cooking Filepath Length: 105 / 260
Duration: 0.301859
Sample Rate: 44,100
Looping: False
Mature: False
Num Channels: 1
Compression: 40
Class: None
Total Samples: 13,312.000000
Max Distance: 0.000000
Source File: PUNCH.wav

BP_DodgeballProjectile
File
Edit
Asset
View
Debug
Window
Help
Parent class: Dodgeball Projectile
Components
Add Component
Search
BP_DodgeballProjectile(self)
Sphere Component (Sphere Collis
Sphere
Projectile Movement (Projectile M
Compile
Save
Browse
Find
Hide Unrelated
Class Settings
Class Defaults
Simulation
Play
needs to be recompiled
(Ctrl + Alt) for more
Event Graph
BP_DodgeballProjectile > Event Graph
Zoom 1:1
Right-Click to Create New Nodes.
This node is disabled and will not be called.
Drag off pins to build functionality.
Event ActorBeginOverlap
Other Actor
This node is disabled and will not be called.
Drag off pins to build functionality.
Event Tick
Delta Seconds
BLUEPRINT
My Blueprint
Add New
Search
Graphs
EventGraph
Event BeginPlay
Event ActorBeginOverlap
Event Tick
Functions (18 Overridable)
ConstructionScript
Macros
Variables
Components
Sphere
Event Dispatchers
Details
Search Details
Damage
Damage
34.0
Actor Tick
Start with Tick Enabled
Tick Interval (secs)
0.0
Allow Tick Before Begin
Sound
Bounce Sound
BOUNCE
Bounce Sound Attenuati
BounceAttenuation
Damage Sound
PUNCH
Particles
Hit Particles
P_Explosion
Replication
Only Relevant to Owner
Always Relevant
Replicate Movement
Net Load on Client
Net Use Owner Relevan
Replay Rewindable
Replicates

ThirdPersonExampleMap*

DDC | Dodgeball

File | Edit | Window | Help

Place Actors

Search Classes

Recently Placed | Basic | Lights | Cinematic | Visual Effects | Geometry | Volumes | All Classes

Empty | Empty | Empty | Point | Playe | Cube | Spher | Cylinc | Cone | Plane

Save Current | Source Control | Modes | Content | Marketplace | Settings | Blueprints | Cinematics | Build | Compile

Shift+F1 for Mouse Cursor

Third Person

World Outliner

Search...

Label	Type
AtmosphericFog	AtmosphericF
SphereReflectionCapt	SphereReflec
1M_Cube_Chamfer	StaticMeshAc
AIController	AIController
BP_DodgeballGameMod	Edit BP_Doc
BP_DodgeballPlayerCor	Edit BP_Doc
BP_EnemyCharacter	Edit BP_Ene
BP_GhostWall	Edit BP_Ghc
BP_MusicManager	Edit BP_Mu

38 actors | View Options

Details | World Settings

Select an object to view details.

Content Browser

Add/Import | Save All | Content ▸ ThirdPersonCPP ▸ Blueprints

Search Paths

- Content
  - Audio
  - Geometry
  - Mannequin
  - Physics
  - StarterContent
  - ThirdPerson
  - ThirdPersonCPP
    - Blueprints
    - Maps
- C++ Classes
  - Dodgeball

Filters | Search Blueprints

BP_Dodgeball GameMode | BP_Dodgeball PlayerController | BP_Dodgeball Projectile | BP_Enemy Character | BP_GhostWall | BP_HUDWidget | BP_Music Manager | BP_Restart Widget | BP_VictoryBox | BP_Wall | ThirdPerson Character

11 items (1 selected) | View Options

연습 과제

› Activity 9.01까지 모두 완성한 **Dodgeball** 프로젝트를 제출하시오.

› 제출 방법: “프로젝트 폴더” 전체 압축
→ 압축 파일 내에서 다음 “5개 폴더” 삭제
1) Content 폴더 안 StarterContent 폴더
2) Intermediate 폴더
3) Saved 폴더
4) Binary 폴더
5) .vs 폴더
→ 압축파일 업로드

Level Design (1)

- A specific Game Design discipline that focuses on building levels in a game
- The goal of a Level Designer
  - To make a level that is fun to play
  - Introduces new gameplay concepts to the player by using the game mechanics built for that game for that game
  - Contains good pacing (a good balance of action-packed and relaxed gameplay sequences)
- A level blockout
  - A very simple and boiled down version of the level that uses most of the elements that the final level will contain, but it is made using only simple shapes and geometry

Level Design (2)

< An example of a level blockout made in UE4 using BSP Brushes >

Exercise 9.06 Building a Level Blockout

- Creating a new level blockout
  - It will contain some structure, where the player will start in a certain place in the level.
  - It will have to go through a series of obstacles to reach the end of the level.
- To make a level that the player will be able to complete
  - We will be using all the mechanics and objects that we built in the last few chapters

ThirdPersonExampleMap
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
Common
Edit...
Rename F2
Duplicate Ctrl+W
Save Ctrl+S
Delete Delete
Asset Actions
Asset Localization
Explore
Show in Folder View Ctrl+B
Show in Explorer
References
Copy Reference
Copy File Path
Reference Viewer... Alt+Shift+R
Size Map... Alt+Shift+M
Audit Assets... Alt+Shift+A
Shader Cook Statistics... Ctrl+Alt+Shift+S
Open World.h
Connect To Source Control...
Rename the selected item.
World Outliner
Search...
Label
Type
ThirdPersonExampleMap (World
ArenaGeometry Folder
Arena Folder
Floor StaticMeshAc
Wall6 StaticMeshAc
Wall7 StaticMeshAc
Wall8 StaticMeshAc
Wall9 StaticMeshAc
Walkway Folder
27 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Filters
Build Data Registry
Right-Click
2 items (1 selected)
View Options

Level1
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
10
10°
0.25
4
Third Person
World Outliner
Search...
Label
Type
Level1 (Editor)
World
ArenaGeometry
Folder
Arena
Folder
Floor
Wall6
Wall7
Wall8
Wall9
Walkway
Folder
27 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
ThirdPersonCPP
Maps
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Filters
Search Maps
Level1
Map Build Data Registry
Level1_Built Data
2 items (1 selected)
View Options

Level1
File
Edit
Window
Help
DDC
Dodgeball
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
Common
Edit...
Rename F2
Duplicate Ctrl+W
Save Ctrl+S
Delete Delete
Asset Actions
Asset Localization
Explore
Show in Folder View Ctrl+B
Show in Explorer
References
Copy Reference
Copy File Path
Reference Viewer... Alt+Shift+R
Size Map... Alt+Shift+M
Audit Assets... Alt+Shift+A
Shader Cook Statistics... Ctrl+Alt+Shift+S
Open World.h
Connect To Source Control...
Create a copy of the selected item(s).
World Outliner
Search...
Label
Type
Level1 (Editor)
ArenaGeometry
Arena
Floor
Wall6
Wall7
Wall8
Wall9
Walkway
27 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
Search Paths
Filters
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Level1
Data
Right-Click
2 items (1 selected)
View Options

Level1

DDC | Dodgeball

File | Edit | Window | Help

Place Actors

Search Classes

Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes

Empty | Empty | Empty | Point | Playe | Cube | Spher | Cylinc | Cone | Plane

Save Current | Source Control | Modes | Content | Marketplace | Settings | Blueprints | Cinematics | Build | Compile

Perspective | Lit | Show | 10 | 10° | 0.25 | 4

Third Person

World Outliner

Search...

Label	Type
Level1 (Editor)	World
ArenaGeometry	Folder
Arena	Folder
Floor	StaticMeshAc
Wall6	StaticMeshAc
Wall7	StaticMeshAc
Wall8	StaticMeshAc
Wall9	StaticMeshAc
Walkway	Folder

27 actors | View Options

Details | World Settings

Select an object to view details.

Content Browser

Add/Import | Save All | Content ▸ ThirdPersonCPP ▸ Maps

Search Paths

- Content
  - Audio
  - Geometry
  - Mannequin
  - Physics
  - StarterContent
  - ThirdPerson
  - ThirdPersonCPP
    - Blueprints
    - Maps
- C++ Classes

Filters | Search Maps

Level1 | Level1_Built Data | Level2

3 items (1 selected) | View Options

Level1
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
10
10°
0.25
4
Third Person
World Outliner
Search...
Label
Type
Level1 (Editor)
World
ArenaGeometry
Folder
Arena
Folder
Floor
Wall6
Wall7
Wall8
Wall9
Walkway
Folder
27 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
ThirdPersonCPP
Maps
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Filters
Search Maps
Level1
Map Build Data Registry
Level1_Built Data
Level2
3 items (1 selected)
View Options

Save Content
Select content to save.
Asset
Owner
File
Type
Level2
Level2
/Game/ThirdPersonCPP/Maps/L
(Level)
Save Selected
Don't Save
Cancel

Level2
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Perspective
Lit
Show
10
10°
0.25
4
Third Person
World Outliner
Search...
Label
Type
Level2 (Editor)
World
ArenaGeometry
Folder
Arena
Folder
Floor
Wall6
Wall7
Wall8
Wall9
Walkway
Folder
27 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Add/Import
Save All
Content
ThirdPersonCPP
Maps
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Filters
Search Maps
Level1
Map Build Data Registry
Level1_Built Data
Level2
3 items (1 selected)
View Options

Level2*

File Edit Window Help

DDC Dodgeball

Place Actors

Search Classes

Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes

Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane

Save Current | Source Control | Modes | Content | Marketplace | Settings | Blueprints | Cinematics | Build | Compile

Perspective | Lit | Show | 10 | 10° | 0.25 | 4

World Outliner

Search...

Label	Type
Level2 (Editor)	World
Lighting	Folder
RenderFX	Folder
BP_EnemyCharacter	Edit BP_Ener
BP_GhostWall	Edit BP_Gho
BP_MusicManager	Edit BP_Mus
BP_VictoryBox	Edit BP_Victo
BP_Wall	Edit BP_Wall
Floor	StaticMeshAct
NetworkPlayerStart	PlayerStart
SkySphereBlueprint	Edit BP_Sky_
ThirdPersonCharacter	Edit ThirdPer

15 actors (1 selected) View Options

Details | World Settings

Floor

+ Add Component | Blueprint/Add S

Search Components

Floor(Instance)

Search Details

Transform

Location -399.7 0.0 130.27

Rotation 0.0° 0.00° 0.0°

Scale 0.75 0.75 1.0

Mobility Stat Stat Mov

Static Mesh

Static Mesh TemplateFloor

Materials

CubeMaterial

Content Browser

Add/Import | Save All | Content ▸ ThirdPersonCPP ▸ Maps

Search Paths

Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes

Filters | Search Maps

Level1 | Map Build Data Registry Level1_Built Data | Level2

3 items (1 selected) View Options

Level2*
DDC
Dodgeball
File
Edit
Window
Help
Place Actors
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty
Empty
Empty
Point
Playe
Cube
Spher
Cylinc
Cone
Plane
Save Current
Source Control
Modes
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Compile
Builds all levels (precomputes lighting data and visibility d rates navigation networks and updates brush models.)
This action is not available while Play in Editor is active, stati is disabled in the project settings, or when previewing less than Shader Model 5
Perspective
Lit
Show
World Outliner
Search...
RenderFX
Folder
BP_EnemyCharacter
Edit BP_Ener
BP_GhostWall
Edit BP_Gho
BP_MusicManager
Edit BP_Mus
BP_VictoryBox
Edit BP_Victo
BP_Wall
Edit BP_Wall
Floor
StaticMeshAct
NetworkPlayerStart
PlayerStart
SkySphereBlueprint
Edit BP_Sky_
ThirdPersonCharacter
Edit ThirdPer
15 actors (1 selected)
View Options
Details
World Settings
Floor
+ Add Component
Blueprint/Add S
Search Components
Search Details
Transform
Location
-399.7
0.0
130.27
Rotation
0.0 °
0.00
0.0 °
Scale
0.75
0.75
1.0
Mobility
Stat
Stat
Mov
Static Mesh
Static Mesh
TemplateFloor
Materials
CubeMaterial
Content Browser
Add/Import
Save All
Content
ThirdPersonCPP
Maps
Search Paths
Content
Audio
Geometry
Mannequin
Physics
StarterContent
ThirdPerson
ThirdPersonCPP
Blueprints
Maps
C++ Classes
Filters
Search Maps
Level1
Map Build Data Registry
Level1_Built Data
Level2
3 items (1 selected)
View Options

Message Log

- Asset Tools
- Build and Submit Errors
- LiveLink
- Source Control (6)
- Blueprint Log
- Play In Editor
- Anim Blueprint Log
- Automation Testing Log
- Localization Service (1)
- Insights Log
- Asset Reimport
- Lighting Results
- Map Check (1)
- Load Errors
- Editor Errors
- Packaging Results
- Asset Check
- Slate Style Log
- HLOD Results
- Compiler Log
- UDN Parse Errors

• Map check complete: 0 Error(s), 0 Warning(s), took 0.339ms to complete.

Show

Level2 - 2021. 10. 25. 오후 6:44:46

< The created level – isometric view >

< The created level – top-down view with the player character marked with an arrow >