

Multimedia and computer animation

Exercise - Dynamics

Useful classes - user input and level world

- UGameplayStatics
 - Provides access to the player's controller component, among other things (GetPlayerController)
 - Contains some other useful methods (game pause, time controls, level loading, etc.)
- UWorld
 - Reference to the level, can be obtained via GetWorld on an AActor (or its subclass) inside that world
 - Contains i.e.
 - SpawnActor
 - GetAllActorsOfClass

Sources:

- https://dev.epicgames.com/documentation/en-us/unreal-engine/API/Runtime/Engine/UGameplayStatics?application_version=5.6
- https://dev.epicgames.com/documentation/en-us/unreal-engine/API/Runtime/Engine/UWorld?application_version=5.6



Unreal Engine - physics

Physics engine:

- Unreal uses the Chaos Physics engine
- Non-deterministic, variable time step
- Separate world model (usually simplified)

Two main kinds of physics objects:

- Dynamic (Simulated)
- Kinematic

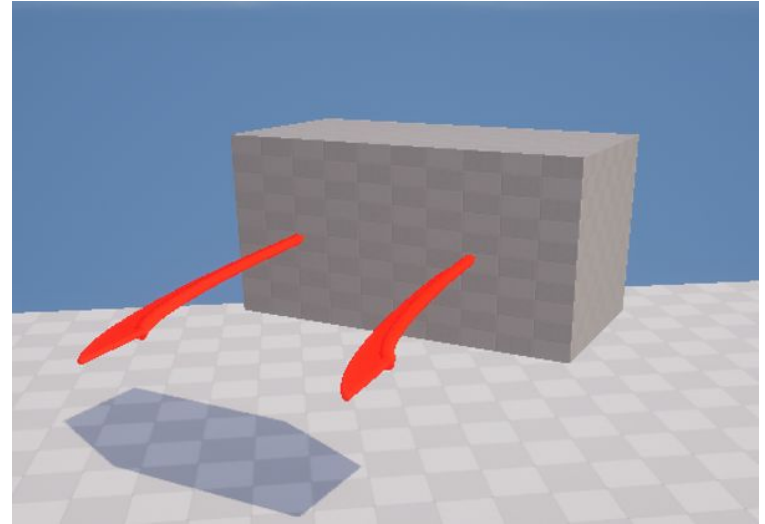
Sources:

- <https://dev.epicgames.com/documentation/en-us/unreal-engine/physics-in-unreal-engine>

Dynamics

Task - create a brick and make it move

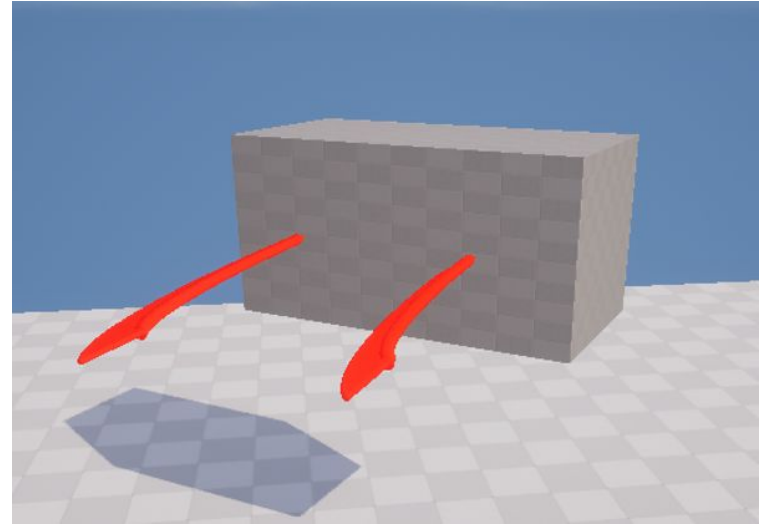
- Create a class derived from AActor
- Add a mesh (and scale it appropriately)
- Apply different forces when the user presses U and O (you can use other keys)



Dynamics

Task - create a brick and make it move

- Create a class derived from AActor
- Add a mesh (and scale it appropriately)
- Apply different forces when the user presses U and O (you can use other keys)



- Add arrows representing the applied force
- Make force parameters configurable in the editor