

MOTIVATION

Unreal Engine 4, a leading game engine, lags behind the progress in VR hardware. The software lacks a full set of presets for creating interactions between gameplay elements and VR motion controllers.

GOAL

Design, implement, and polish a mechanic for picking up objects realistically.

TARGET AUDIENCE

Virtual reality developers and artists using Unreal Engine 4.

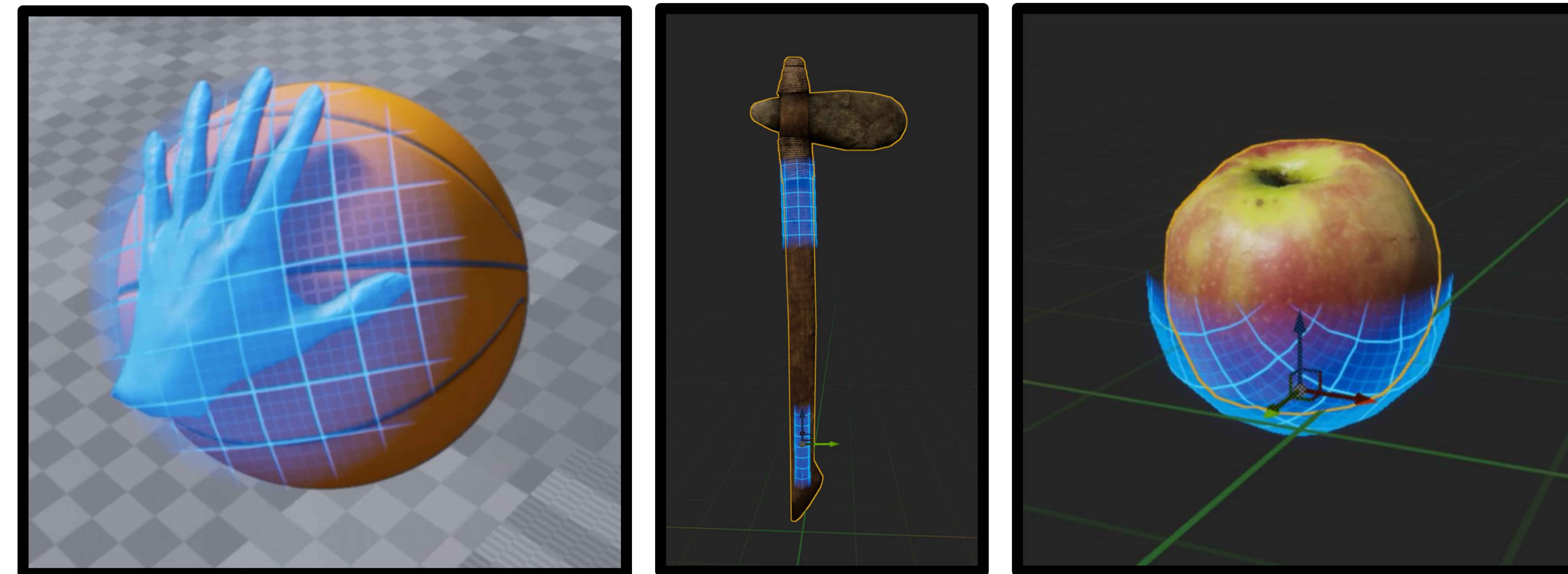
FEATURES

Surface shape approximation:

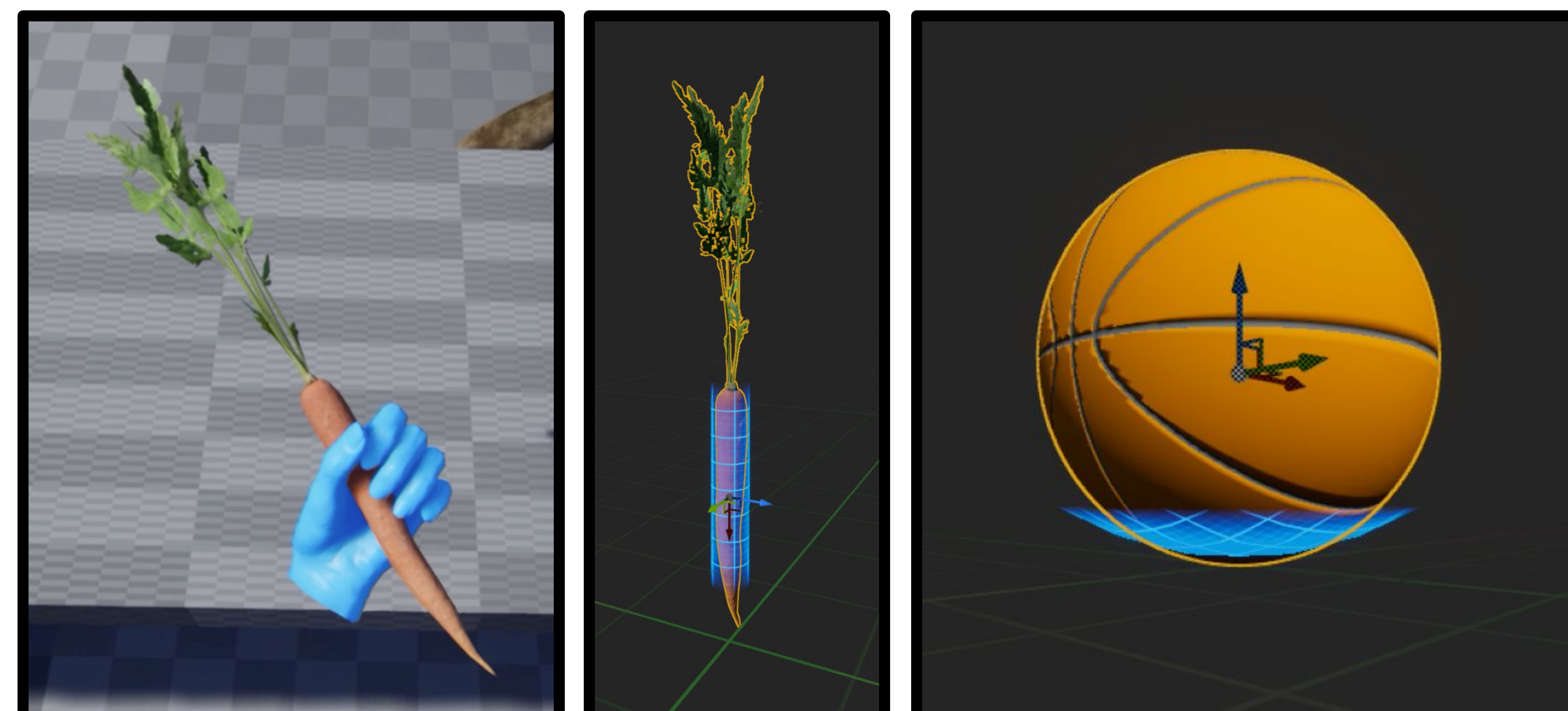
Ability to describe a grabbable surface as either a plane, sphere, or cylinder of various sizes. Digital hand realistically poses to grab approximation.

Weight simulation:

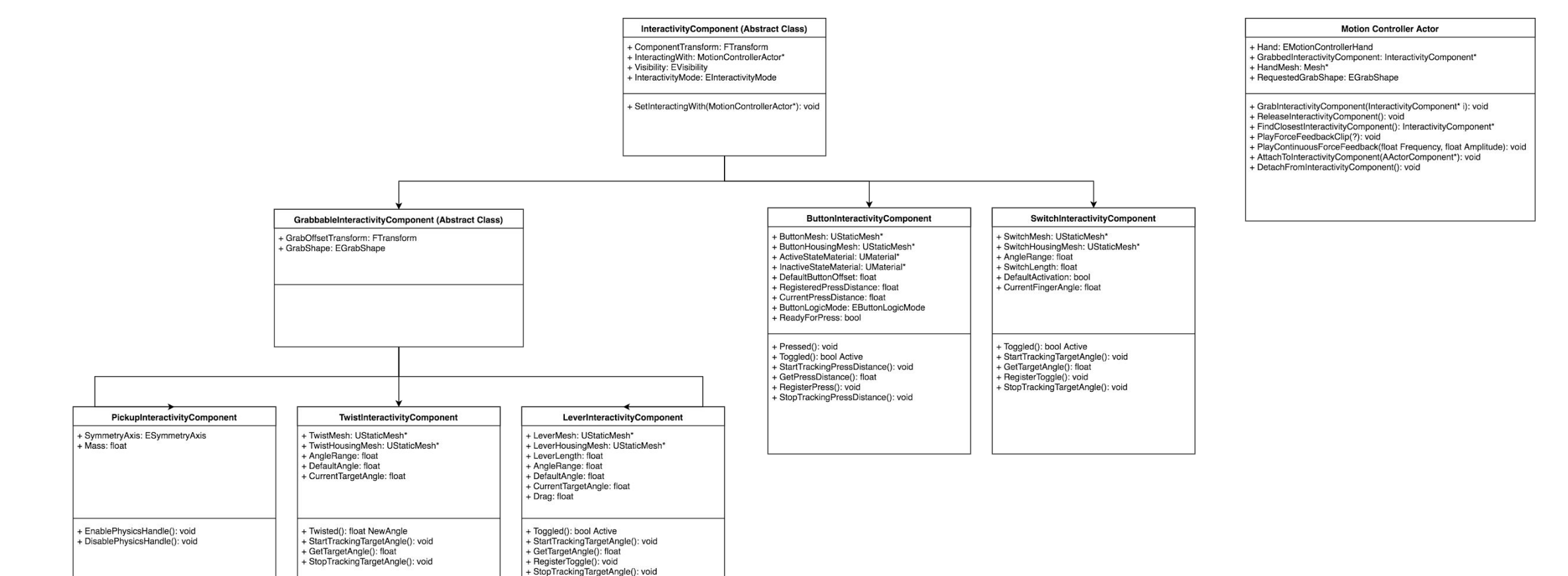
Heavier objects require more force to move and lighter objects require less force.



A PLUGIN FOR UNREAL ENGINE 4 TO HELP DEVELOPERS CREATE INTERACTIVE VIRTUAL REALITY EXPERIENCES.



ARCHITECTURE



Class Diagram

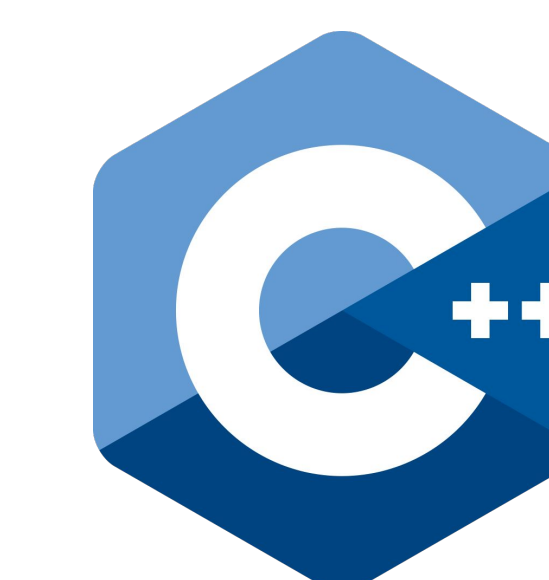
FUTURE IDEAS

- Haptic feedback based on collisions.
- More sophisticated interactions, such as buttons, levers, and dials.

TECHNOLOGIES



Unreal Engine 4
Game engine



C++
Programming language

UE4 Blueprints
Visual programming, prototyping