



Smash The City

A High Performance Destruction
Physics Sandbox Game

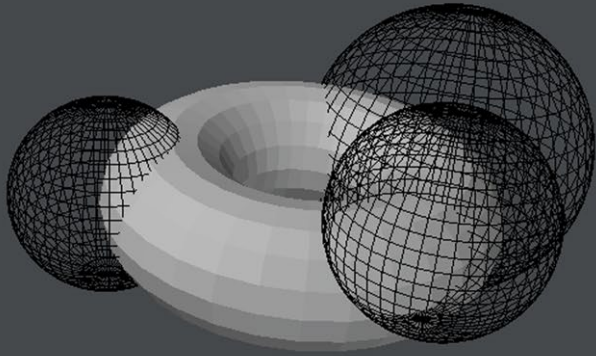
By: Chris Hahn and Matthew Wethington

What Is Voronoi Mesh Fracturing?



What Is Voronoi Mesh Fracturing?

- Take A Mesh And Fracture It Into A Bunch Of Smaller Pieces!



01

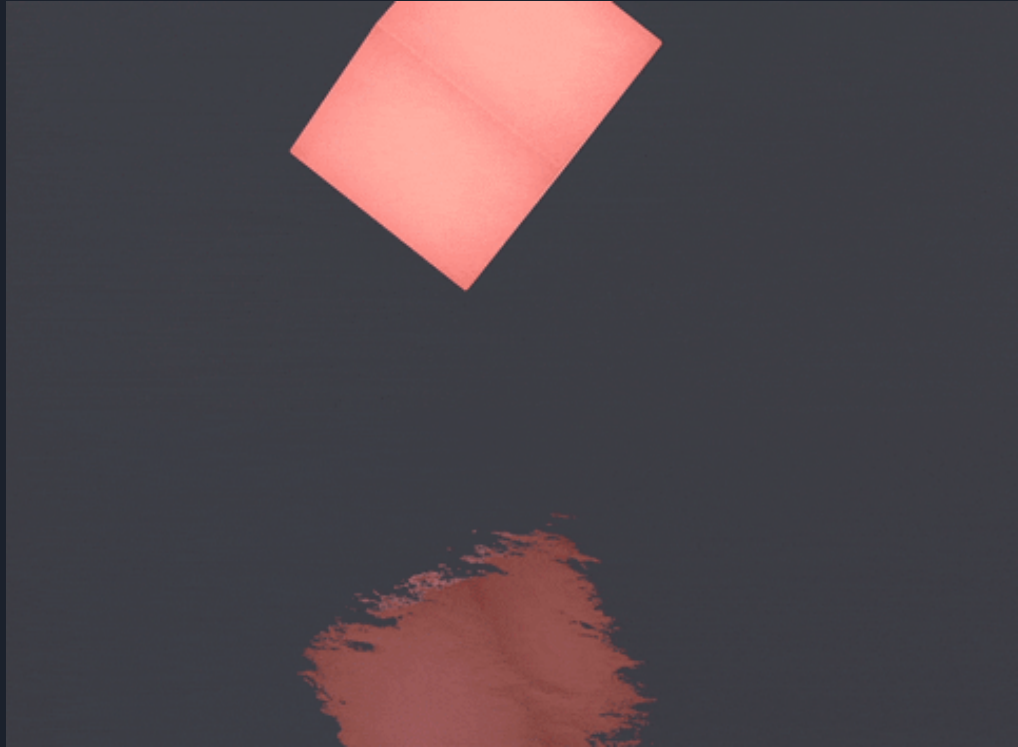


02



What Is Voronoi Mesh Fracturing?

- It's Essentially The Procedural Generation Of A Physics Based Animation.
- Voronoi Mesh Fracturing Is Used In Video Games, Movies, And Animations To Produce Realistic Destruction Effects.



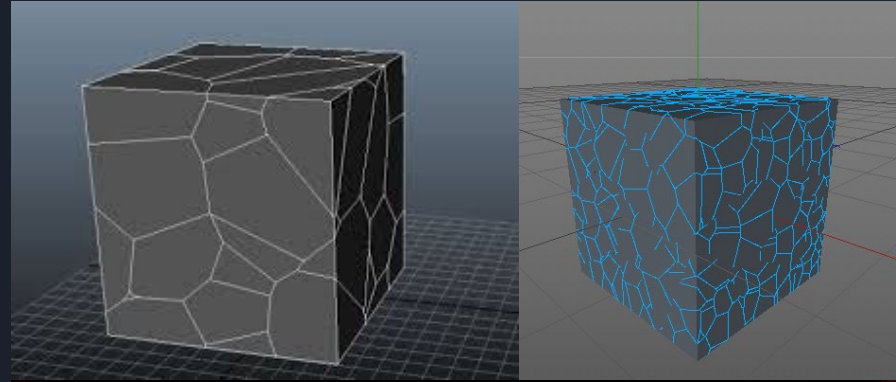
Importance Of Voronoi Mesh Fracturing In Relation To Video Games

- Enhances The Player's Experience
- Increases Immersion
- Can Be Used As A Gameplay Mechanic, Such As For Tactics In Combat
- Destruction Physics Look Awesome!
- In Our Game, The Destruction Physics Is Used As A Combat Tool

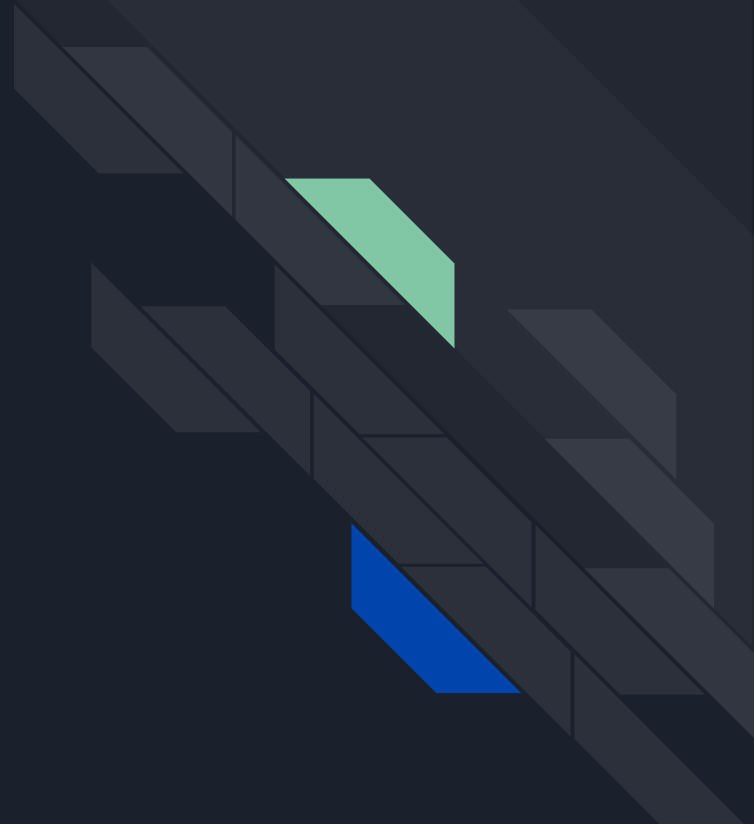


Types Of Voronoi Mesh Fracturing

- Precomputed
 - This Type Is Typically Used In Video Games, And Is Used In Movies And Animations.
- Dynamic (At Runtime)
 - This Type Is Typically Used In Simulators And In Some Games, Although Usually Not In Massive Quantities.

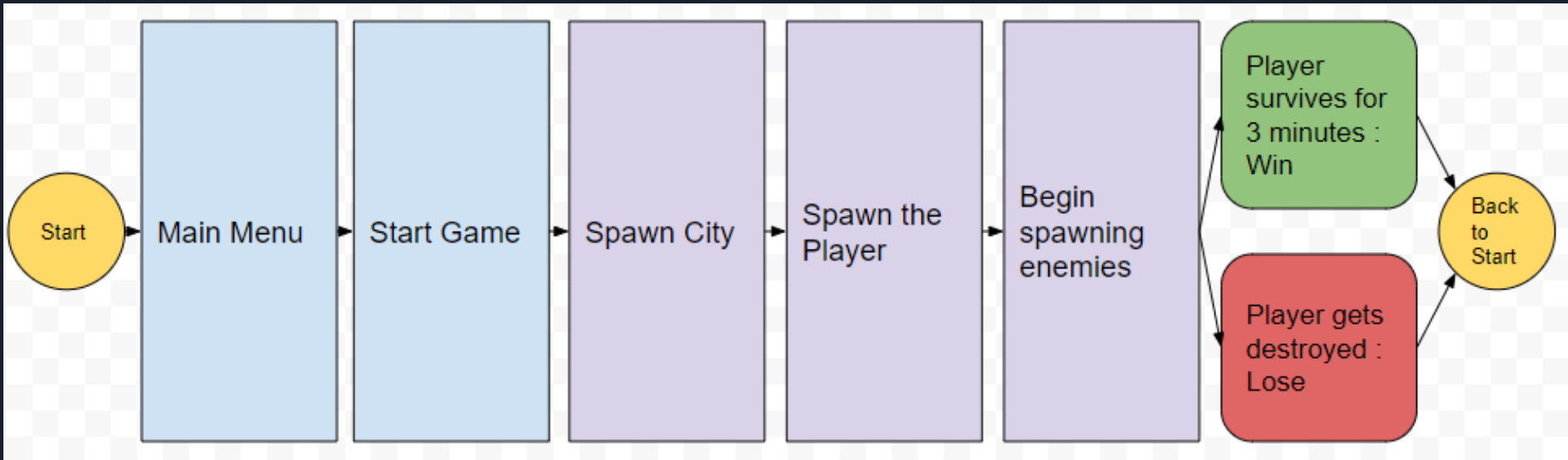


Our Game



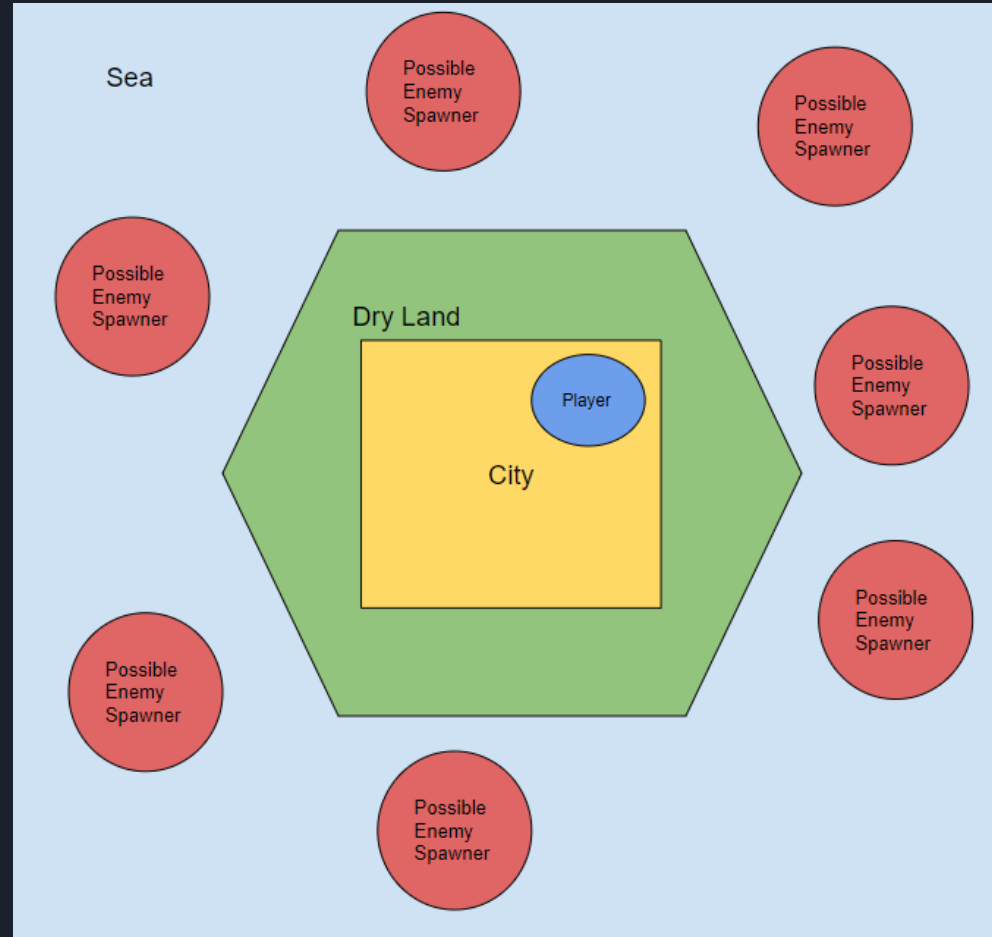
The States of the Game

- What The User Will See And What The Game Will Do During An Average Run Of The Game.

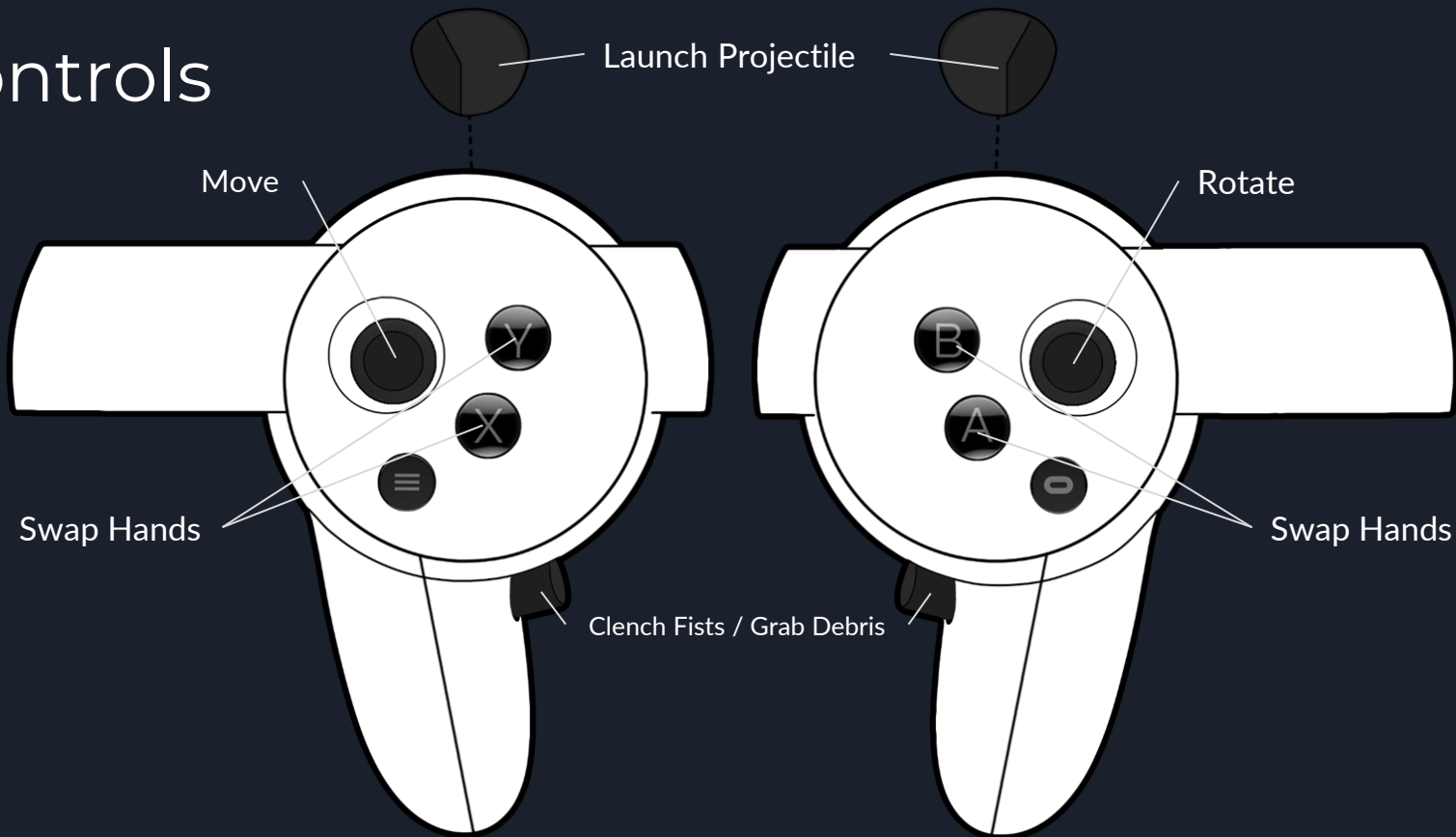


The Layout of the Virtual World

- A Basic Map Of All The Key Locations And Objects Within The World.



Controls



Fists



Punch/Swing

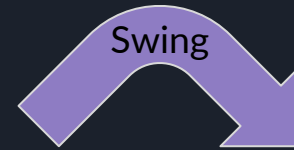
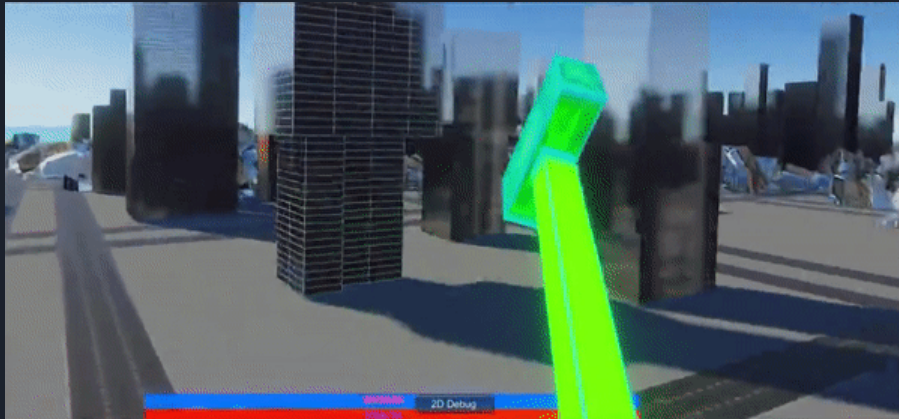
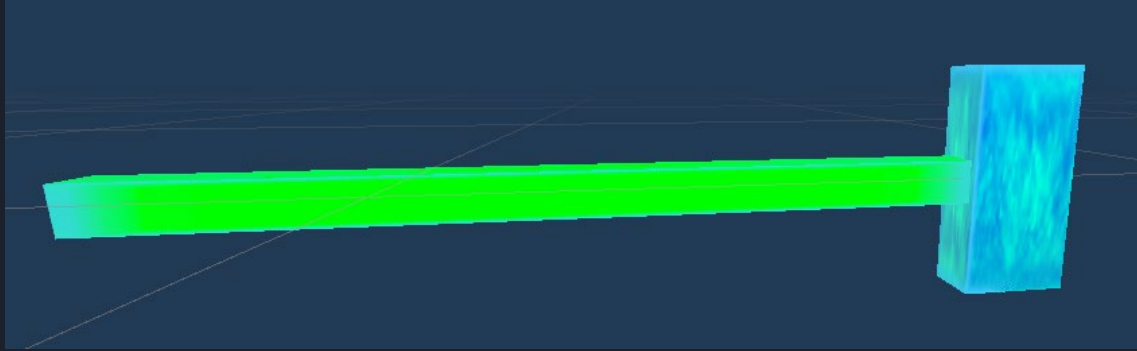
Enemies
(Damage)

Destructible
Objects
(Destruction)

Ground
(No Effect)



Mecha Maul

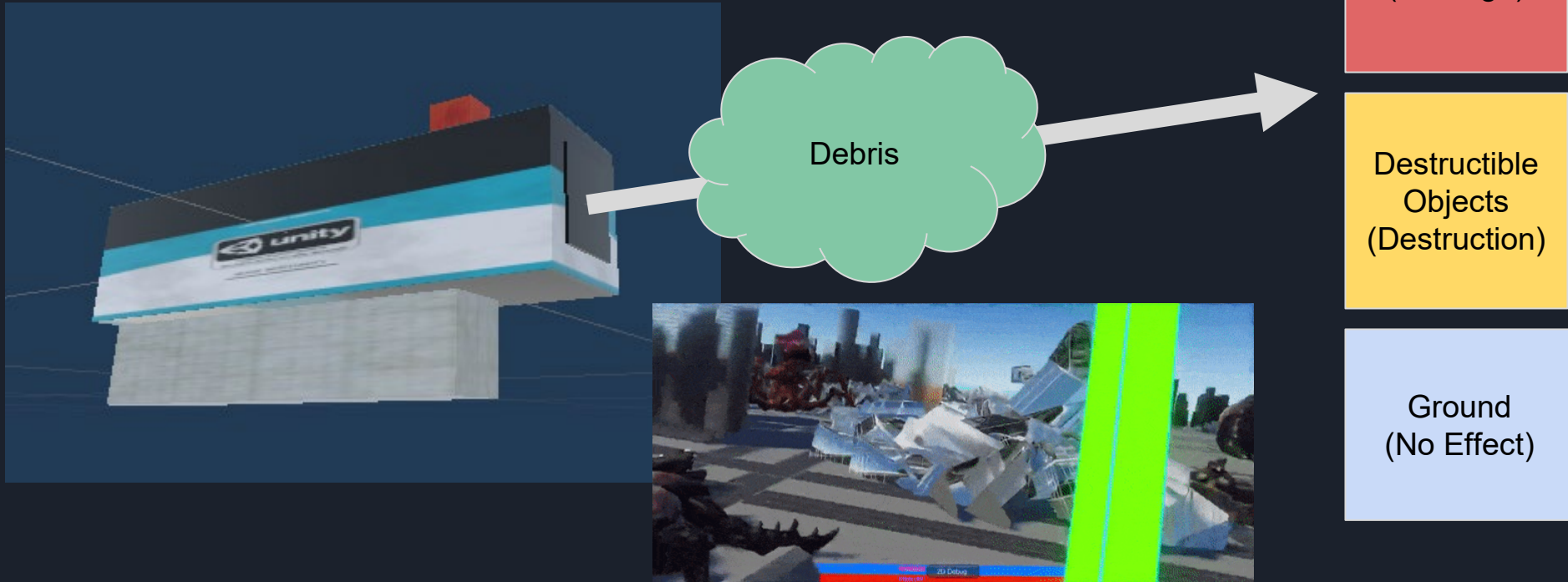


Enemies
(Damage)

Destructible
Objects
(Destruction)

Ground
(No Effect)

Debris Launcher



Photon Gun

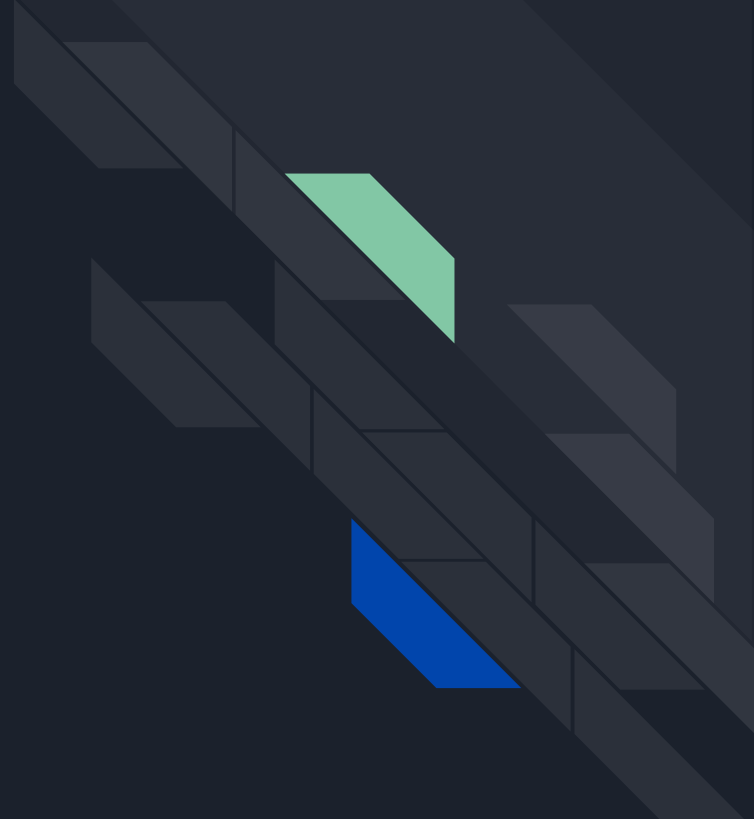


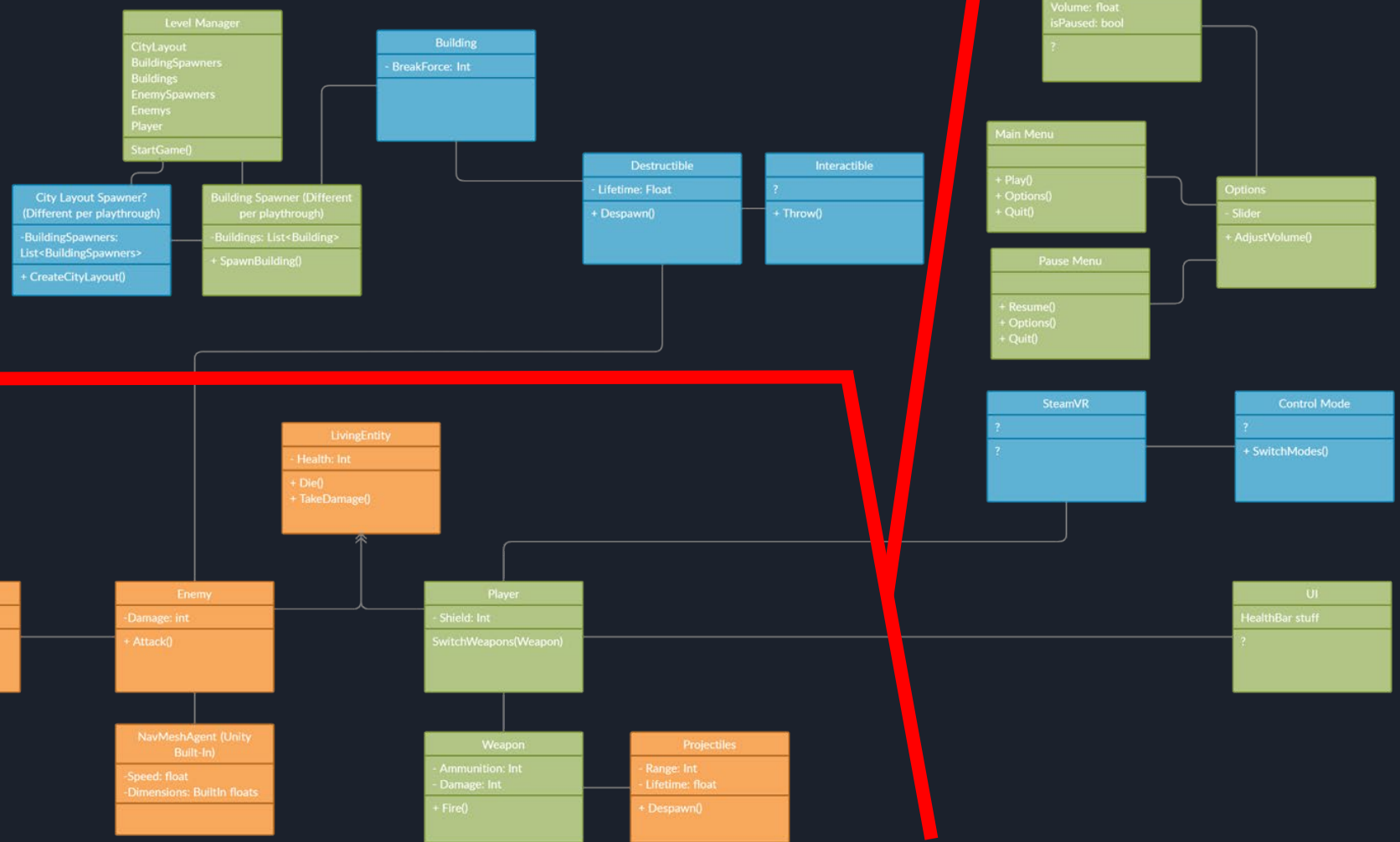
Enemies
(Damage)

Buildings
and Ground
(No Effect)

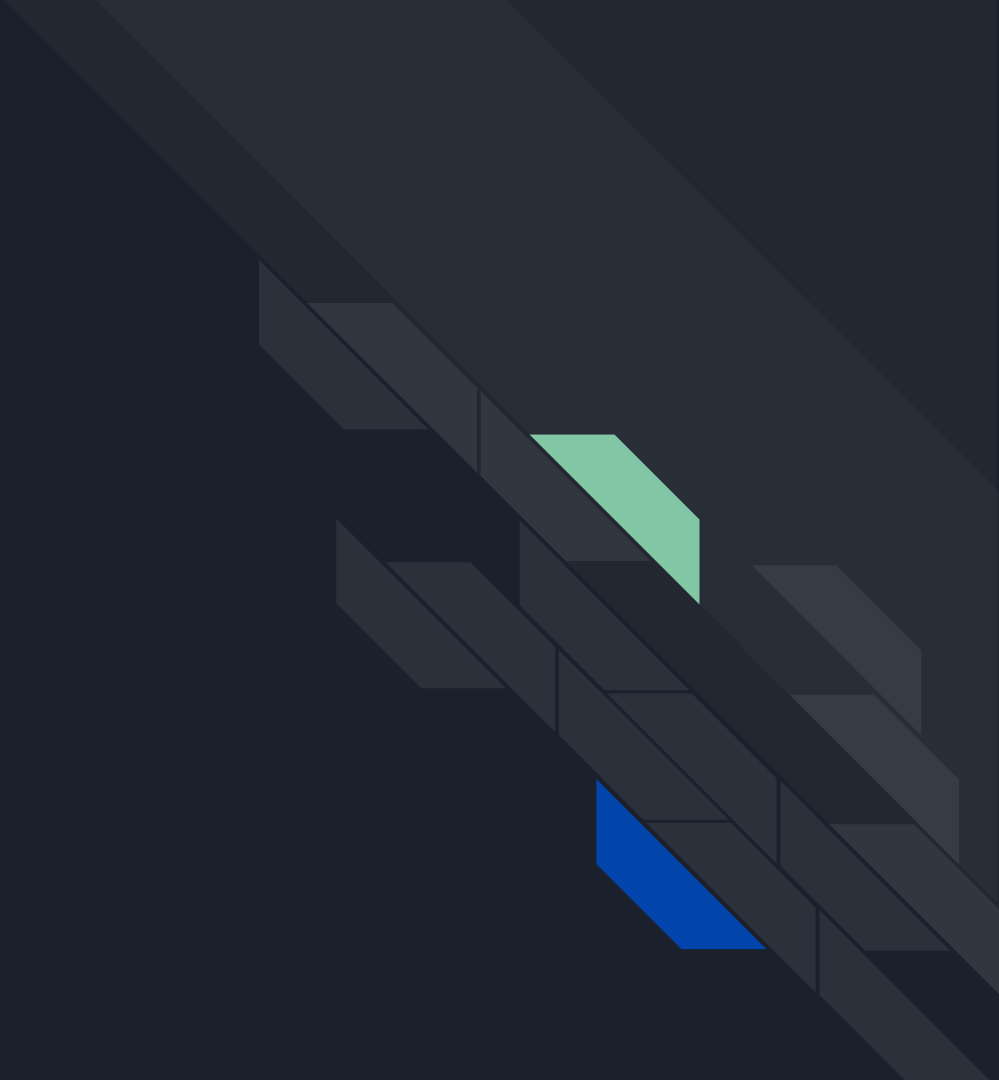


The Object Diagram





Demo



Demo





Questions?

