Smash The City
A High Performance Destruction Physics Sandbox Game

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What Is Voronoi Mesh Fracturing?
What Is Voronoi Mesh Fracturing?

- Take A Mesh And Fracture It Into A Bunch Of Smaller Pieces!
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.
Launch Projectile
Move
Swap Hands
Clench Fists / Grab Debris
Rotate
Swap Hands
Fists

- Enemies (Damage)
- Destructible Objects ( Destruction)
- Ground (No Effect)
Mecha Maul

- Swing
  - Enemies (Damage)
  - Destructible Objects (Destruction)
  - Ground (No Effect)
Debris Launcher

Debris Launcher

Enemies
(Damage)

Destructible
Objects
(Destruction)

Ground
(No Effect)
Photon Gun

Enemies (Damage)

Buildings and Ground (No Effect)
The Object Diagram
Demo
Demo
Questions?