

Super Collider

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200lbs. of Fish

Super Collider

- Wacky physics-driven party brawler
 - 2-4 players
 - Physics-driven combat
- Hostile environments
- Interesting weapons



VIDEO

bit.ly/SuperCollider_Trailer

Game Mechanics

- Items
 - Each weapon has a unique effect
- Knock out players
- The last survivor wins the round
- Win 5 rounds to win the game



Building the Character

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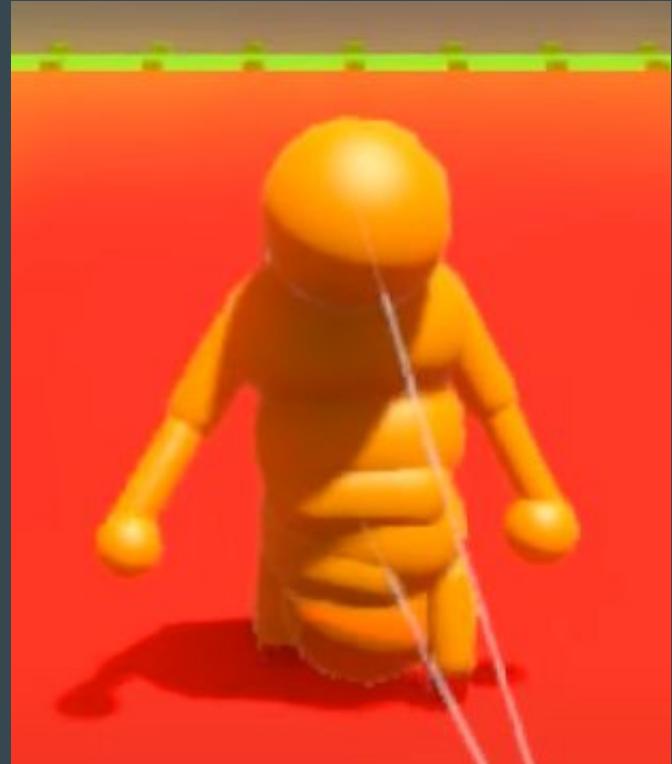
Jeff's Research

Active Ragdolls



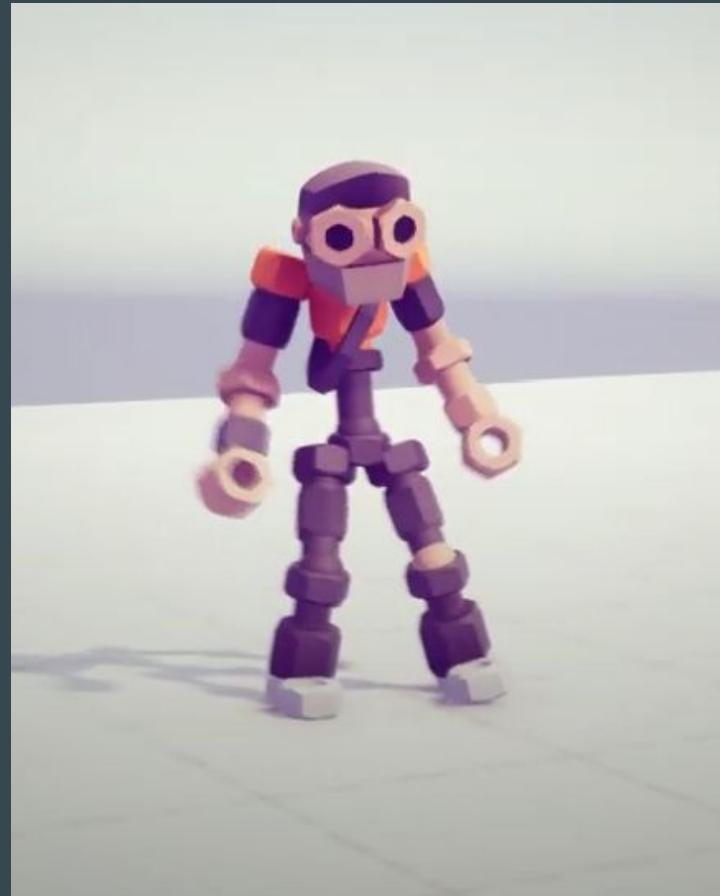
Gang Beasts

- Invisible sphere for balance
- Sphere pushed around to move
- External forces applied to appendages



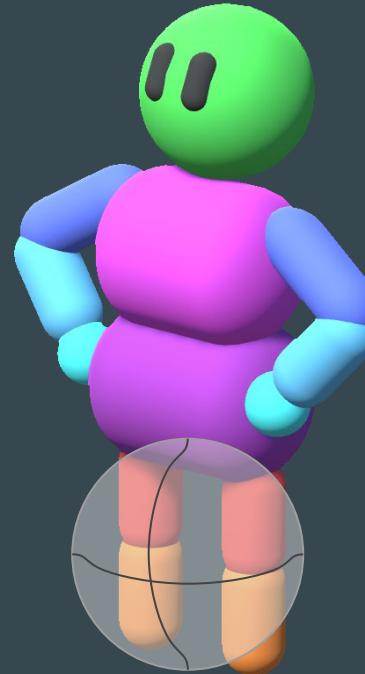
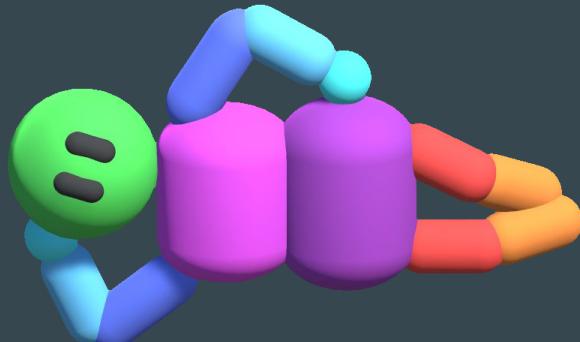
MetallCore999

- Rotate hips and ankles for balance
- Move by friction
- Joint target rotations



First Prototype

- Invisible sphere balances character
 - Forces applied to ball to move character around
 - Arm/Leg controlled by animation targeting joints
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- Pivots around the sphere
 - Resilient to impacts near the sphere - Torque!

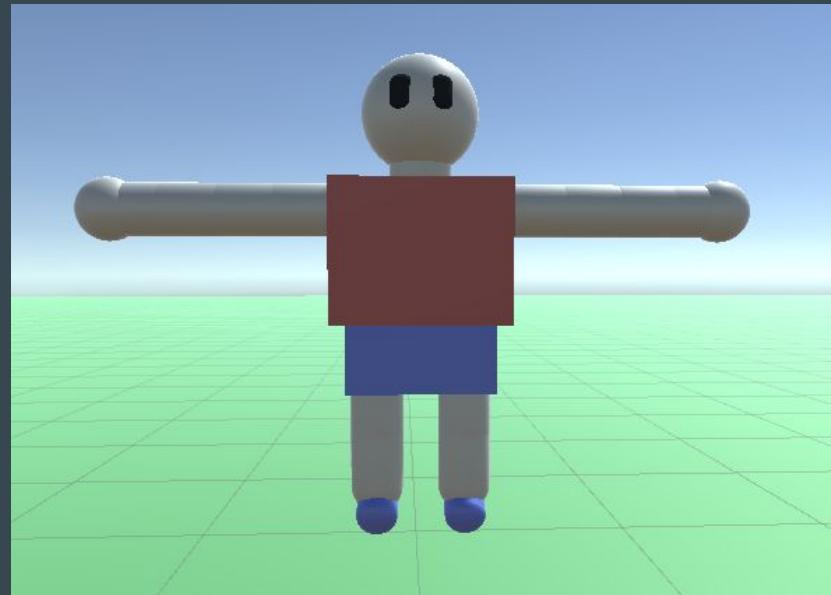


GIF

bit.ly/SuperCollider_FirstProto

Second Prototype

- External forces balance the character
 - Height targeter
 - Position targeter
 - Direction targeter
- Goose step walk
 - Friction between feet and ground move the character
- Arms move using preset target rotations



Core Components

Direction Targeter

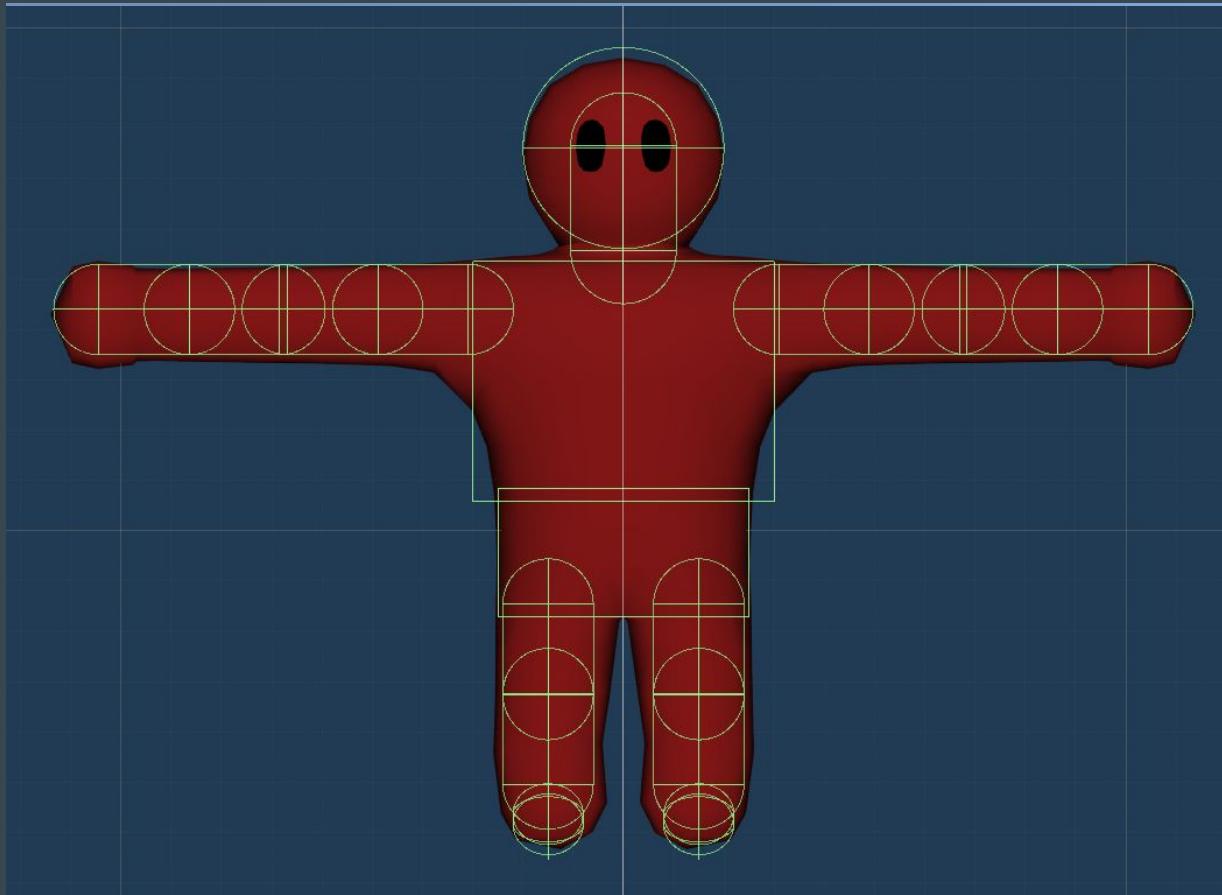
- Smoothly moves an object to face a specified direction

Position Targeter

- Targets a position relative to another object
- Smoothly moves object towards position

Height Targeter

- Targets a specific height off the ground
- Smoothly moves object towards height





GIF

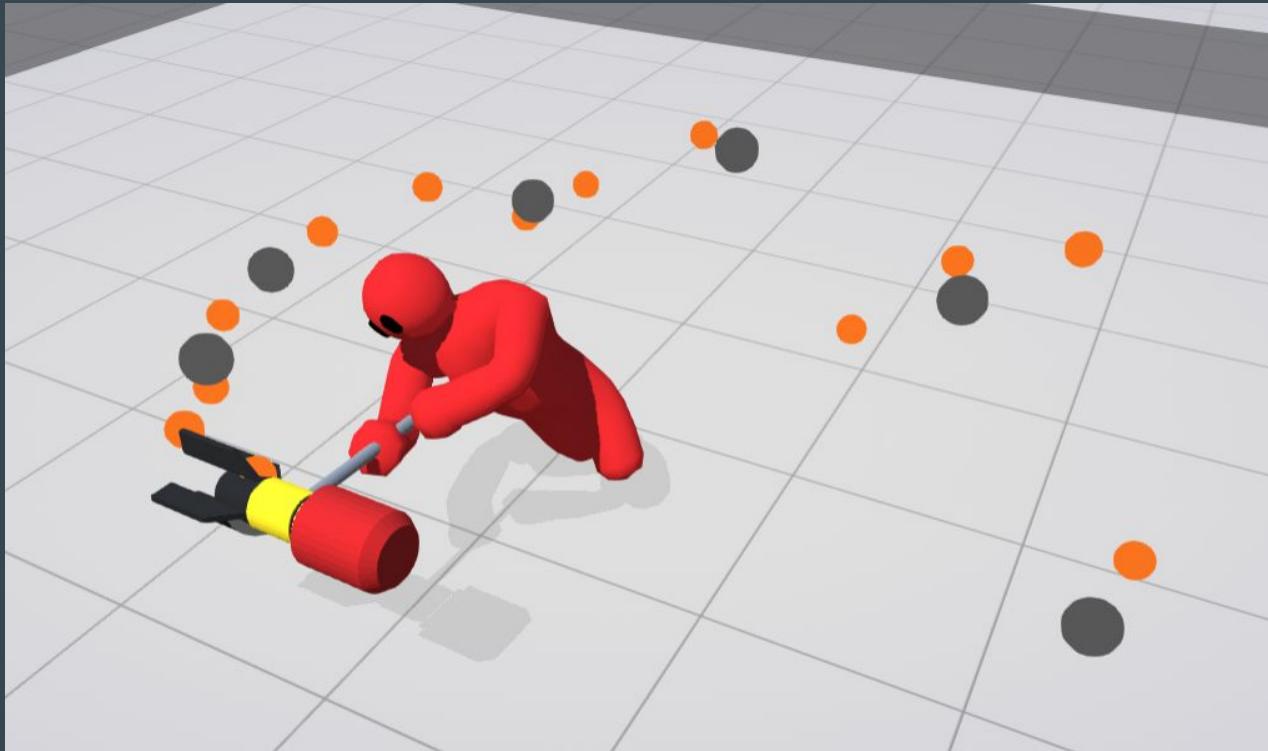
bit.ly/SuperCollider_Giraffe

Weapons

- Melee Weapons
 - Flail
 - Rocket Hammer
 - Rocket Glove
- Guns
 - Rail Gun
 - Ricochet Gun
 - Bomb Gun
- Explosives
 - KABOOMerang
 - Cactus Grenade
 - Proximity Mine
- Specialty Weapons
 - Laser Cannon
 - Plunger Gun



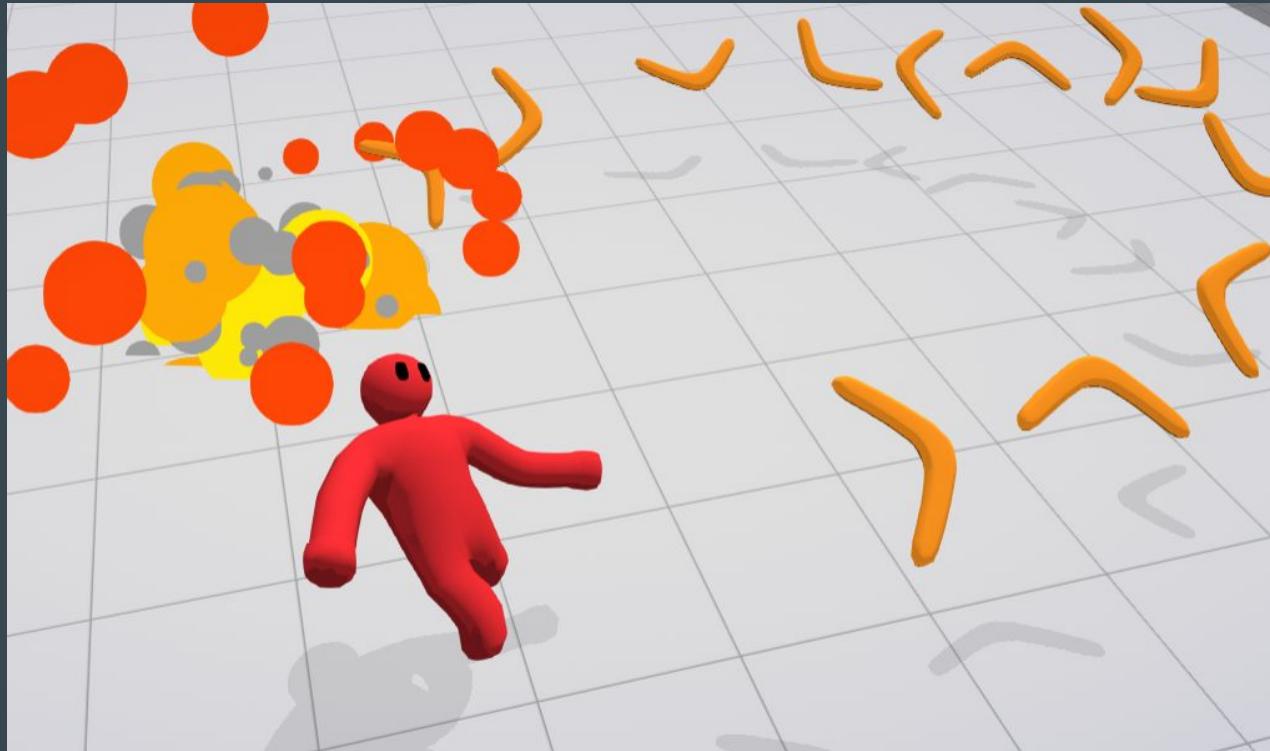
Rocket Hammer



GIF

bit.ly/SuperCollider_Hammer

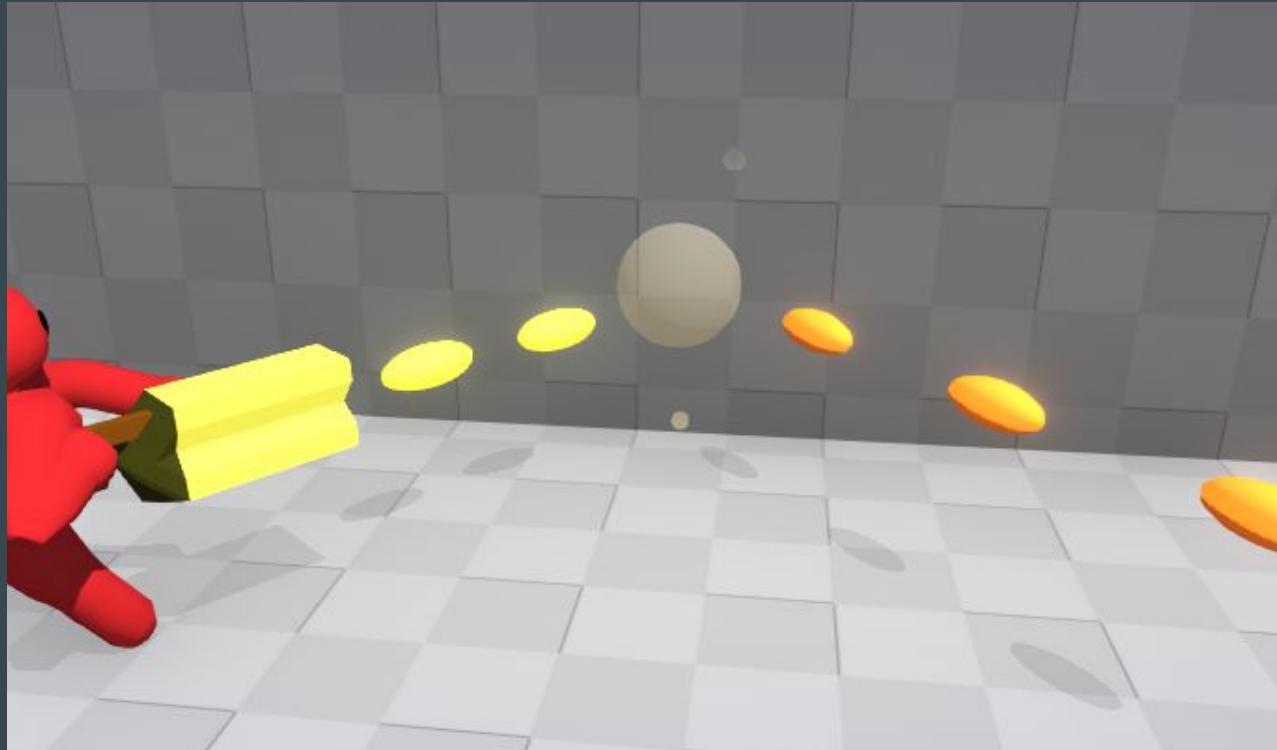
KABOOMerang



GIF

bit.ly/SuperCollider_Kaboom

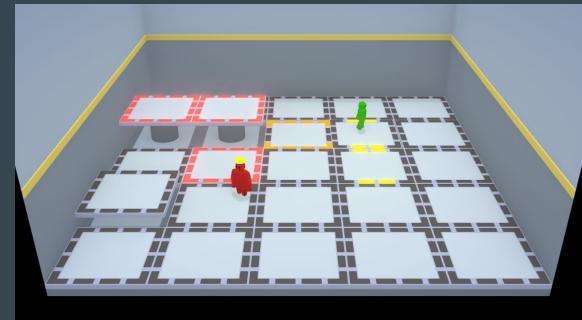
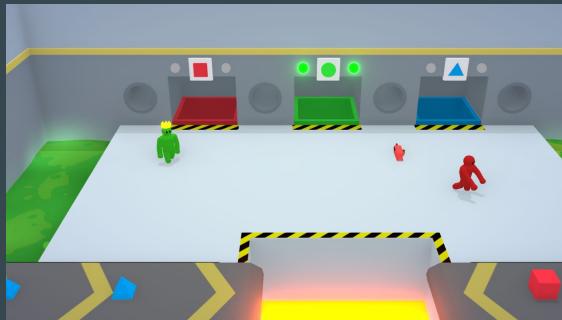
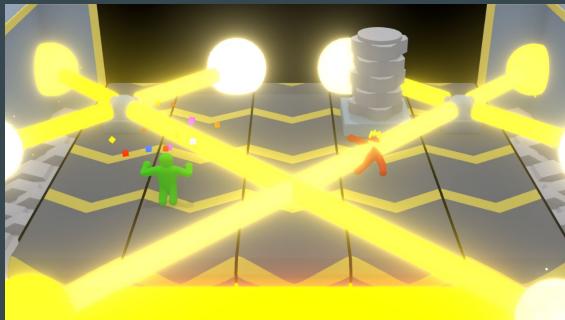
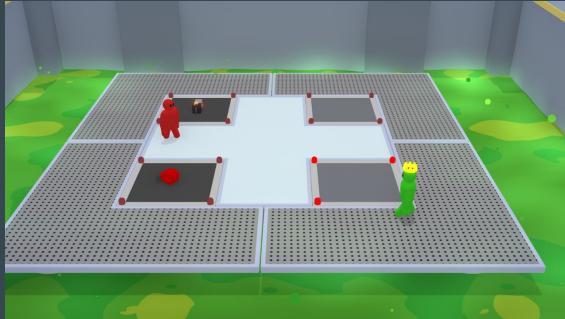
Ricochet Gun



GIF

bit.ly/SuperCollider_Ricochet

Levels



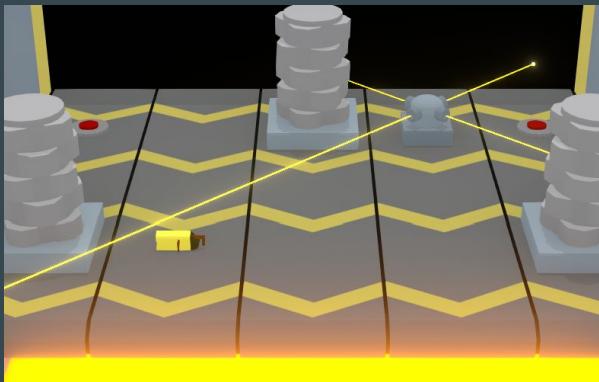
Taxonomy of Randomness Mechanics

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Mark's Research

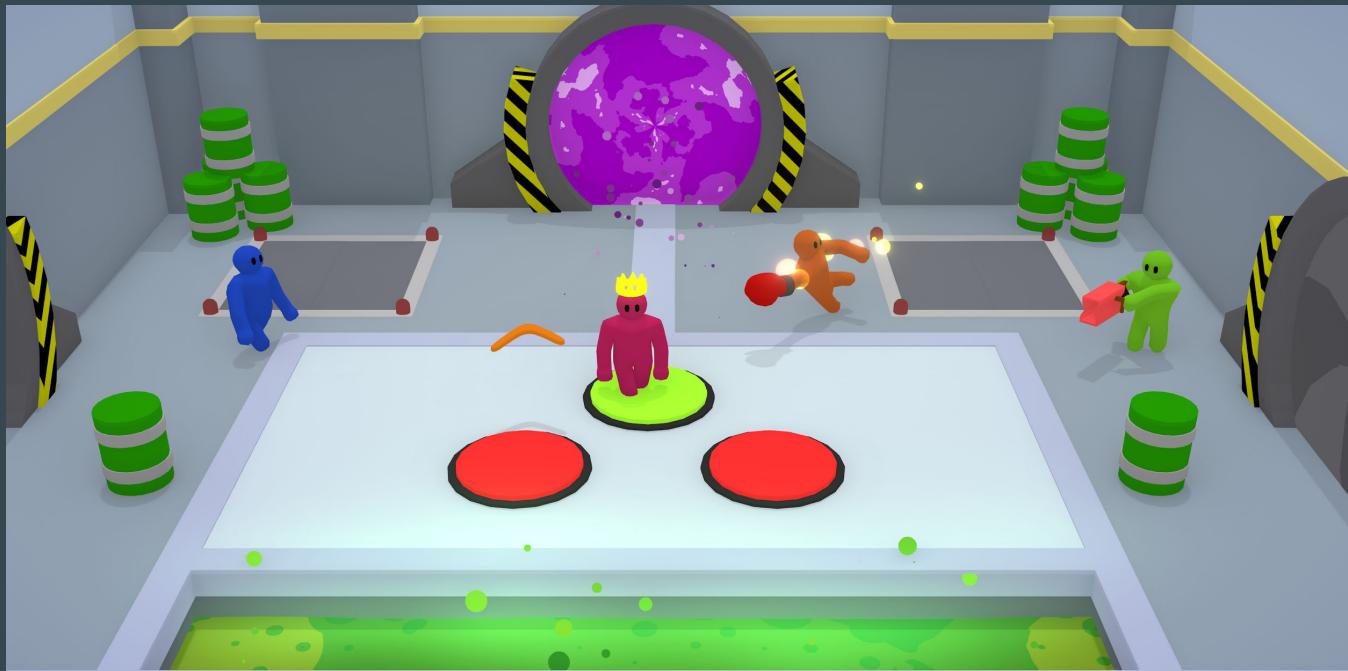
Taxonomy of Randomness Mechanics

- Created a taxonomy to classify randomness mechanics in games
 - Voluntary vs non-voluntary
 - Signaled vs non-signaled
 - Mitigable vs immitigable
- Used the taxonomy to evaluate *Super Collider* mechanics



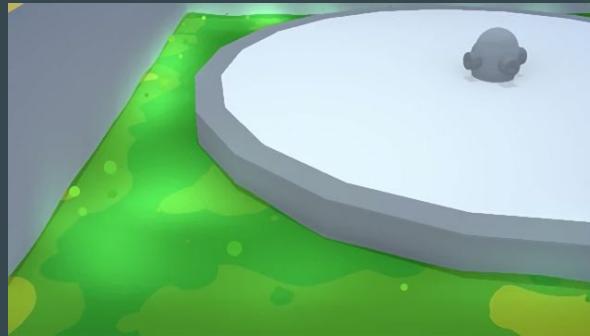
Visual Style

- Customized Shader
 - Cartoonish
 - Flat-lit Shading



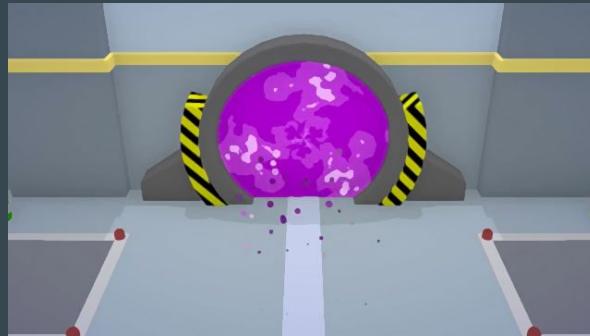
Visual Style

- Customized Shader
 - Cartoonish
 - Flat-lit Shading
 - Special Objects
 - Acid Pool
 - Portal



GIF

bit.ly/SuperCollider_Acid



GIF

bit.ly/SuperCollider_Portal

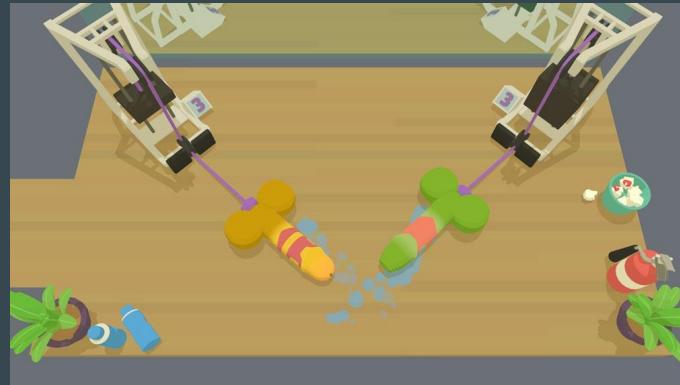
Flat-Lit Shading

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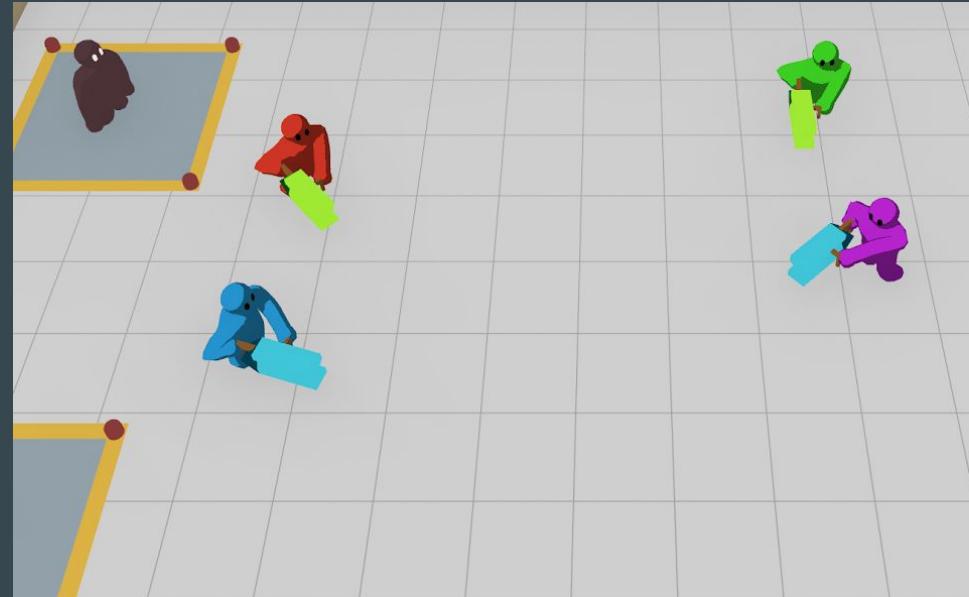
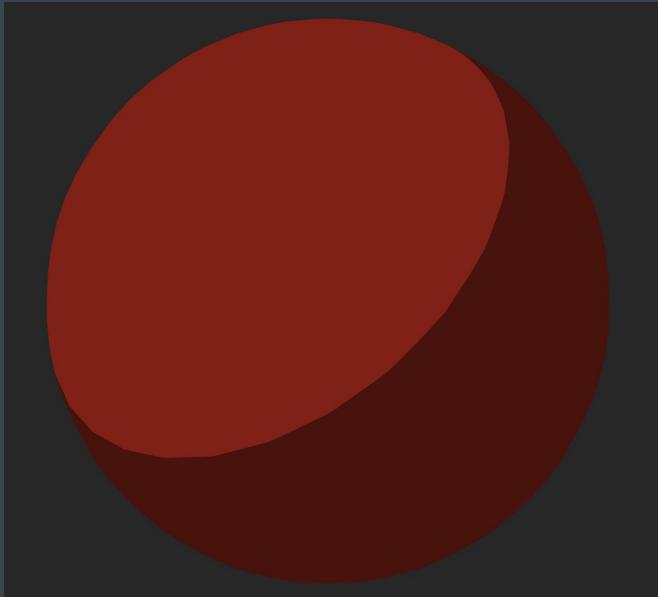
Victor's Research

References

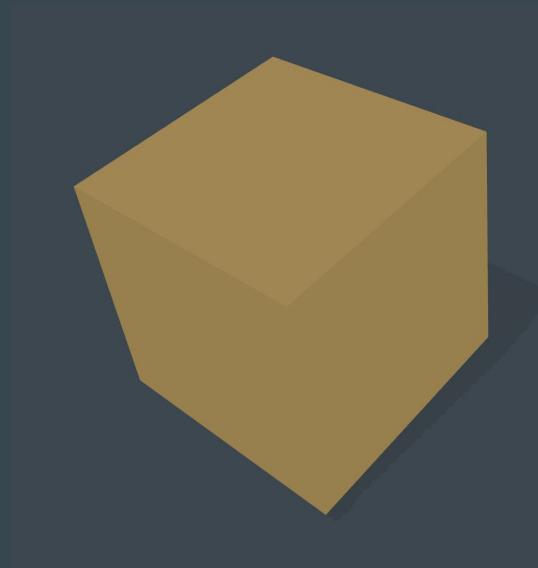
- Untitled Goose Game
- Genital Jousting
- Guilty Gear Xrd



Version 1 - Cel Shading

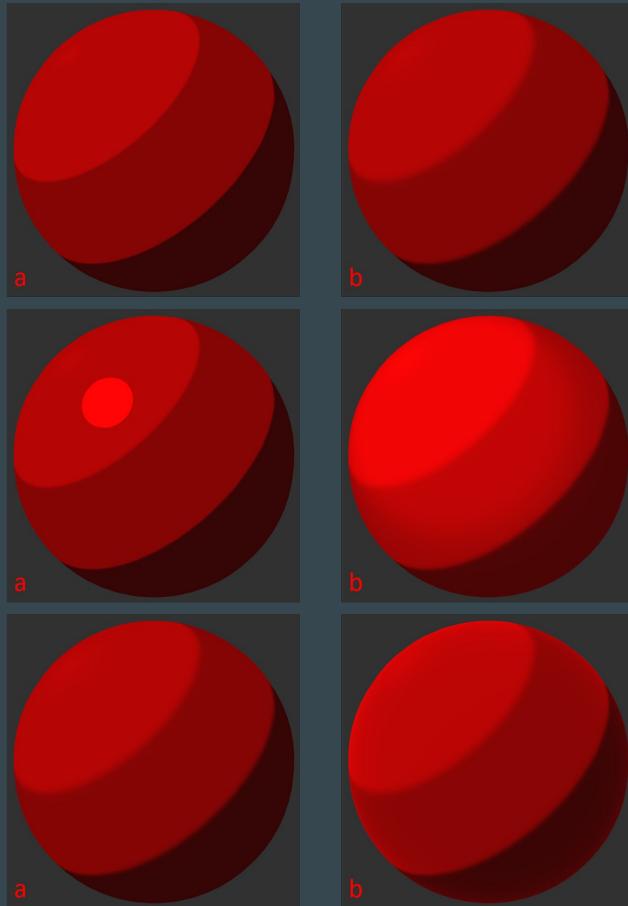


Version 1 - Cel Shading



Version 2 - NPR with PBR

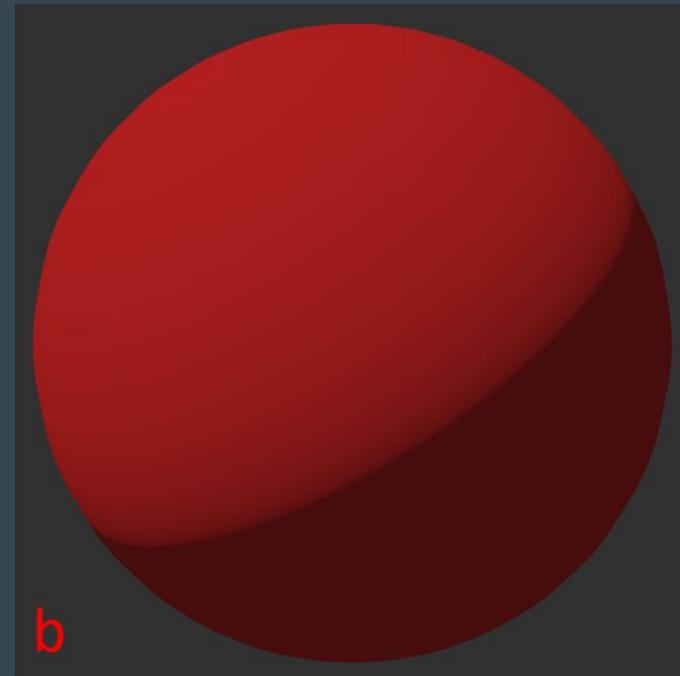
- Sigmoid window
- GGX highlight
- Fresnel



Version 3 - Modified Lambertian



a



b

Version 3 - Modified Lambertian

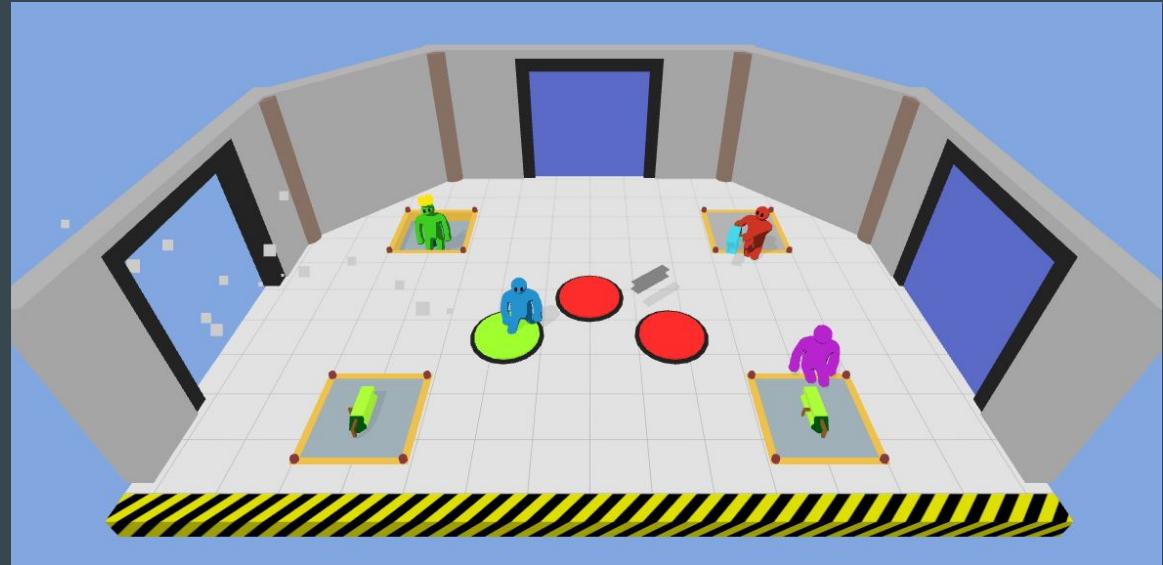


Post-Processing Effects



Playtesting

- Tightened up the controls
- Removed/reworked certain levels
- Tweaked weapon mechanics



Processes

- GitHub – code reviews
- Task tracking
- Discord
 - Meeting planning
 - Idea iteration
 - Meeting after outbreak
- Level creation process
 - Layout
 - Mechanics
 - Polish



Post Mortem

What went right?

- Not afraid to try new things
- Reacted to playtests
- Communicating with external team
- Clear roles and ownership
- Worked in the same space

Post Mortem Continued

What went wrong?

- Current events
 - No regular meeting times
 - Not keeping up with external members on a regular basis
- No early focus on publishing

Post Mortem Continued

Future Work?

- Publishing game
 - Complete missing assets - art, music, sounds
- More variance in weapons
- Random events - make each game unique, stage variations

Any Questions?