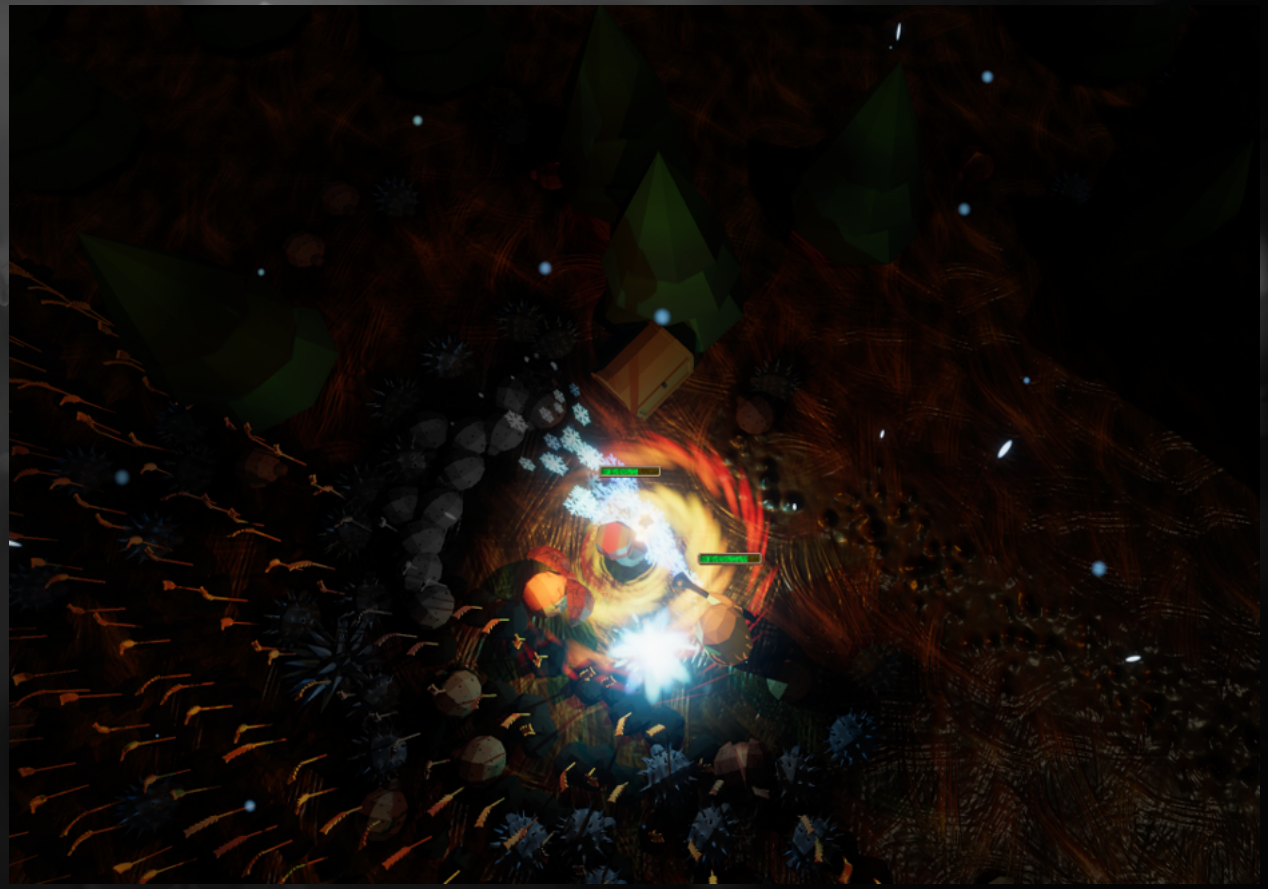
Crusaders of Light: Dark Dimensions

CONCLUSION

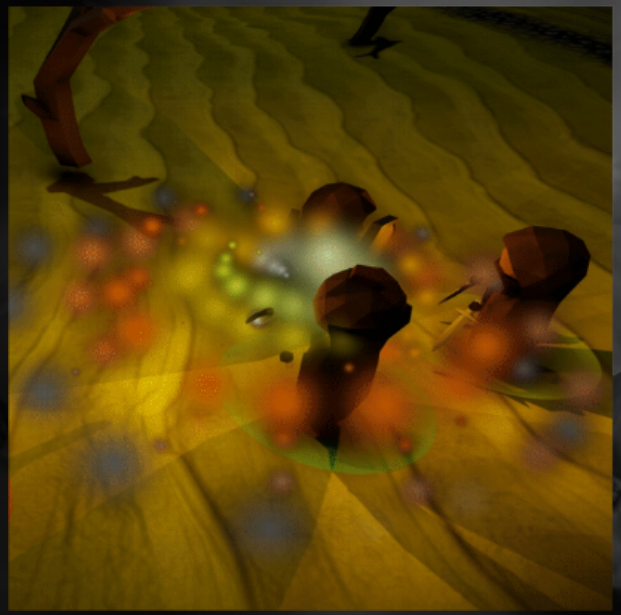
Andreas Leitner
Florian Buschek
Jean Paul Vieira Filho

Vision

- Light vs Darkness, the classic duel!
- Fast paced, endless crawler, couch coop!
- Enemy swarm behaviour
- Detailed environments



Before



- Slow and unintuitive

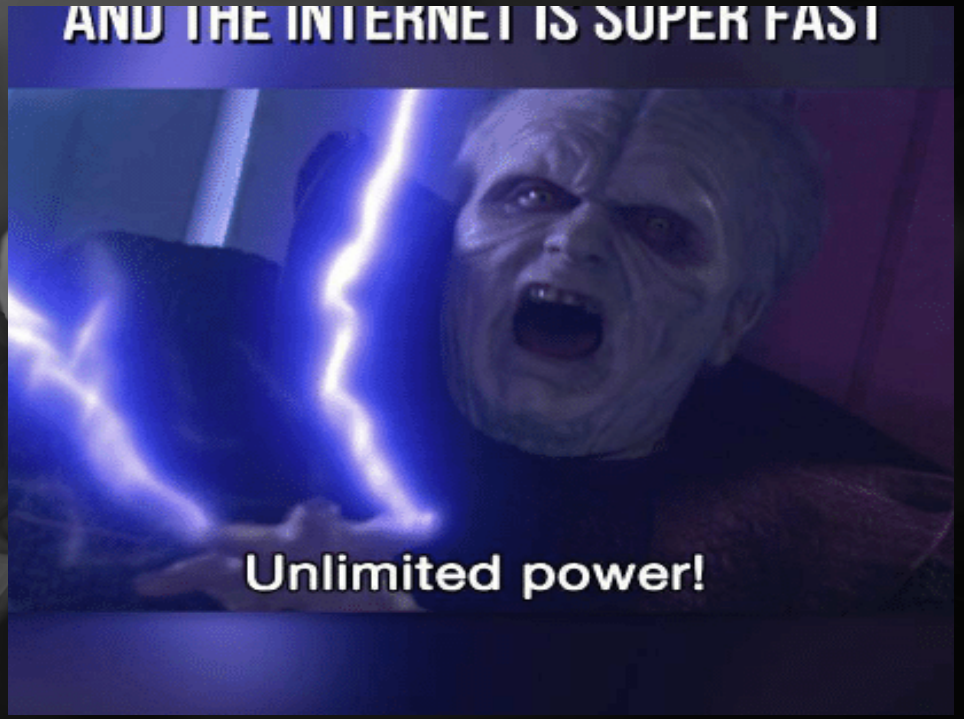
- Large and empty

Better level!

- A single path, navigation is easier!
- Interesting areas to visit!
- More detailed world!
- Clear goal, without any help

Voronoi + Graph Rewriting

- Create any level layout and just "crunch" it inside a voronoi diagram!
- Assign any area layout inside of the "crunched level"
- Easier area and level design!

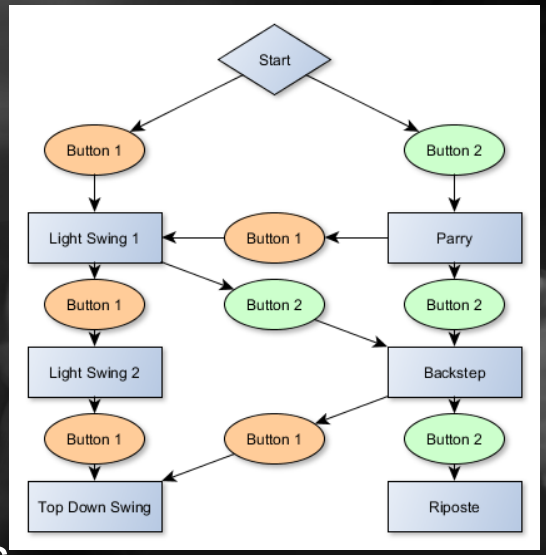


Visual Effects!

- Good looking particle systems for different element types.
- Improved terrain shader by heightblending
- Postprocessing shaderer for the darkness aura of enemies
- Snow shader
- New enemy models (some with sculpting workflow)

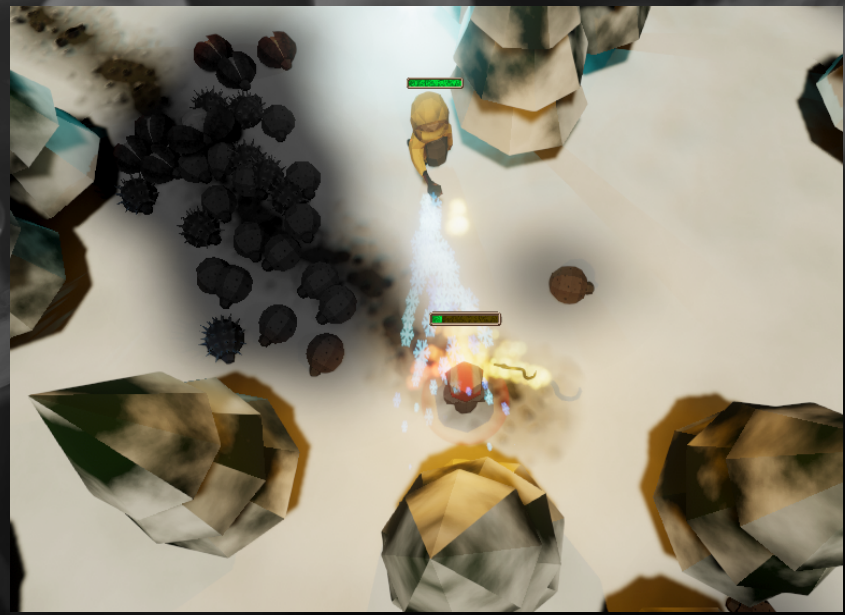
Better combat!

- Combo System
  - Chain Attacks after each other
  - Smoother Animations
  - Better "Feeling"
- New Weapons and equipable Elements
  - Upgrades Weapon Attacks with new effects
  - 3 Weapons & 3 Elements -> 9 Combinations
- Heal by defeating standard enemies
- New Enemy Types and unique Boss Attacks



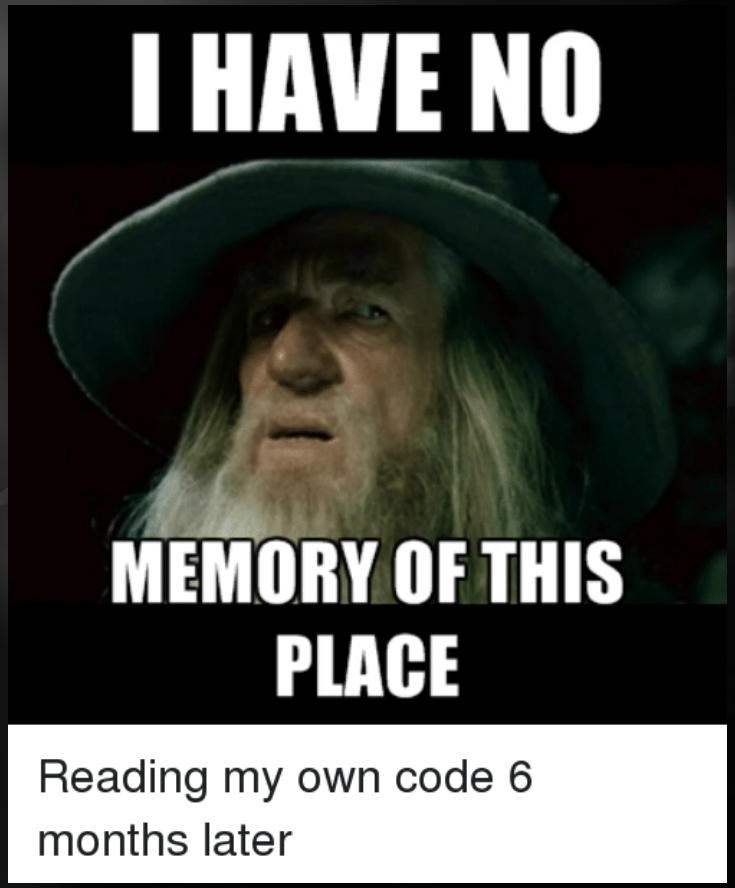
New Enemies

- Swarm
  - 3 distinctly different Beetles
  - Follow greatly enhanced BOID-Flocking Algorithm
- 2 Bosses
  - Unique Attacks
- 2 Minibosses
  - Some interaction with Beetles
    - Slow Player
    - Spawn and Detonate special Shock-Beetles



Major problems

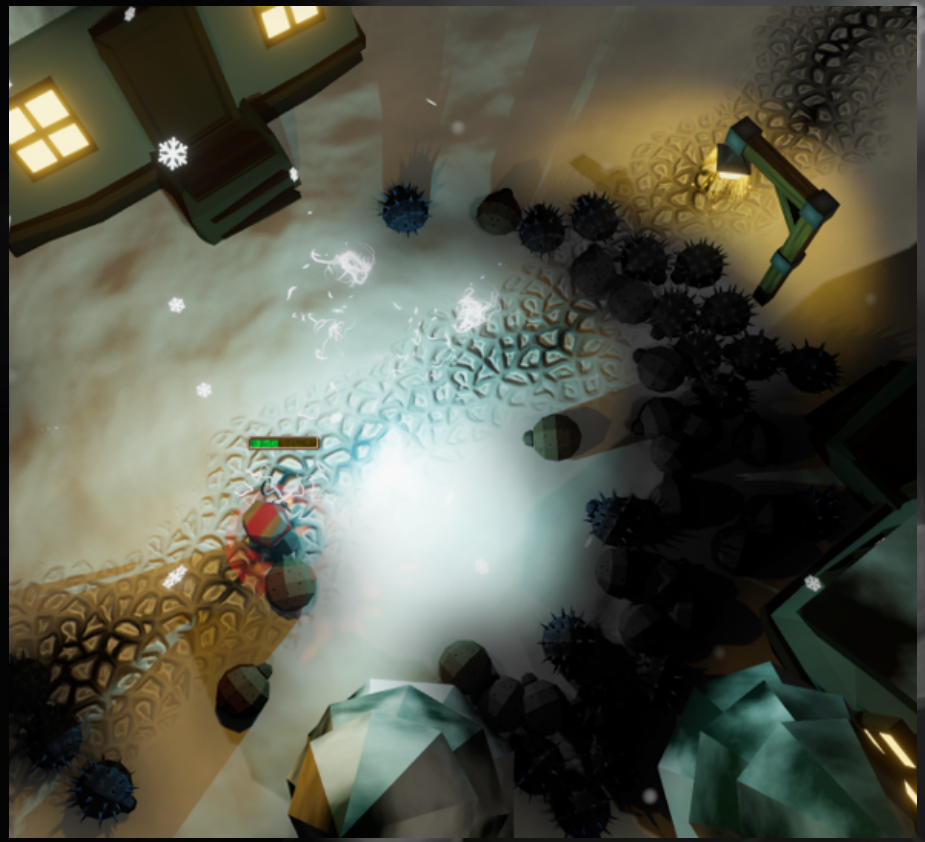
- Refactoring hell at start, with precious development time wasted
- Hard to find procedural generation techniques that work in every seed!
- Unity documentation sometimes lacking for shaders (especially post processing with compute shaders)
- Swarm AI has huge number of variables (Ranges, Factors,...) with severe implications, but no real way to "calculate" correct values -> mostly trial and error
- Performance a limiting factor.

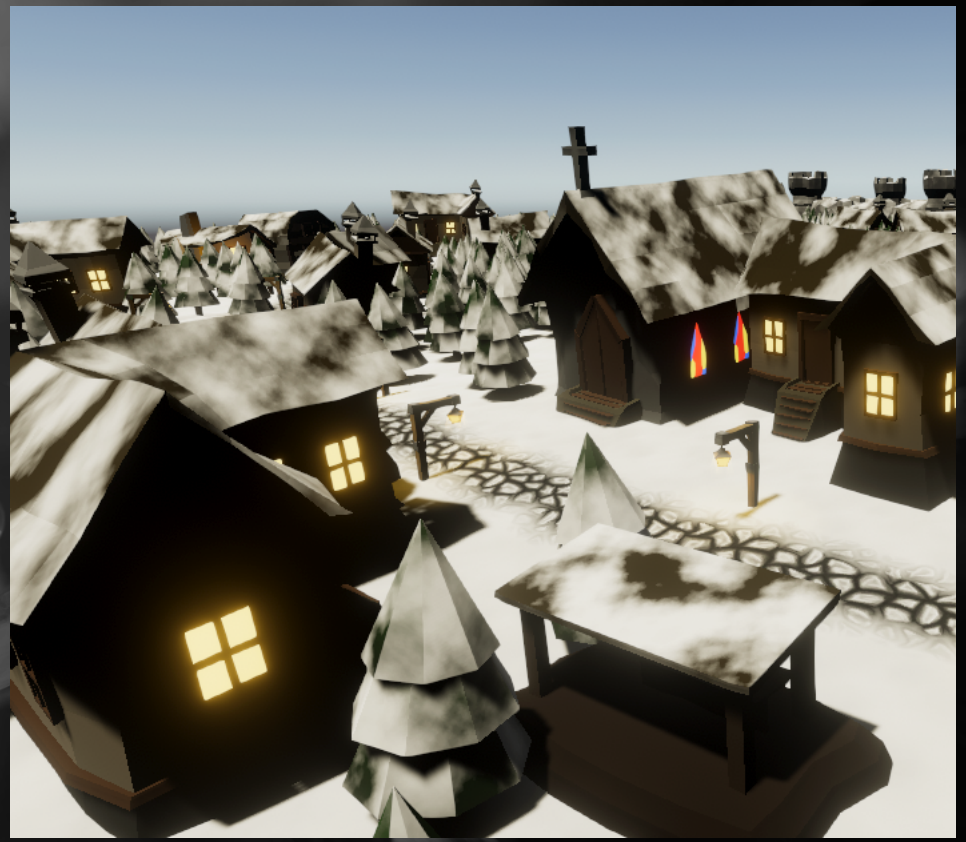


Major Changes

- Instead of having a constant swarm, divide level in multiple seamless small arenas -> players now must kill everything before being able to progress
- Discarded own Particle system in favor of the Unity particle system
- Players heal by killing enemies
- Difficulty rises with each won "mini-arena"

Final Result!





Demo
Enjoy!