Interim Results: Soaper Duck

Sahin Er

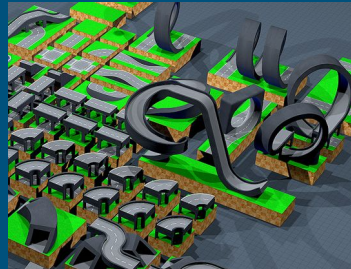**W**acken (Sebastian Walchshäusl)

Albert Zach

Marco Grasso

Low Target (23.12.2020) (Recap Slide)

- Simple Procedural Track Generation
  - Simple track building blocks (soap/bathroom styled)
  - Infinite generation
- Simple Menu
  - High Score (Points/Distance)
  - Restart Button
- Playable character can shoot water
  - Player speed increases when ground is wet

Infinite track generation - Attaching Tracks

- Rotation of attached tiles in relation to the next one

- Already passed tracks

- Tiling for the splash texture

Track Generation Goal

Problems with complete random track generation (connecting track, impossible paths, fun)

Make Pseudo random track generation with collection of different mini challenges (Derek Yu, Spelunky, 2016)

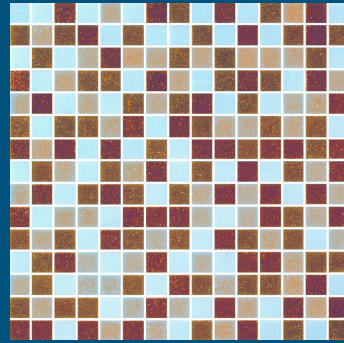Leave space at end and start of each segment to make paths possible
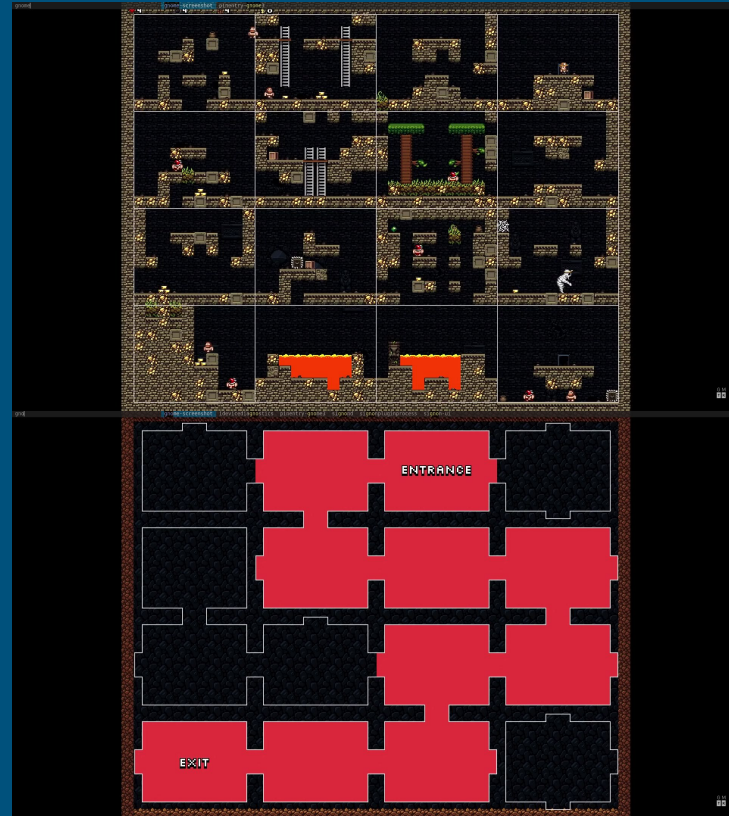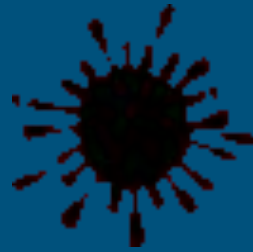
Main Menu

- Simple main menu
  - Works on all resolutions (best with 4k)
  - Uses vertical layout group for buttons
- Uses textMeshPro package
  - dynamic gradients
  - shadow effects
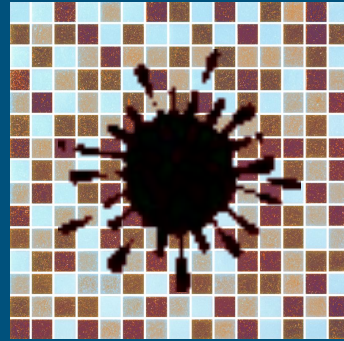 - character spacing
  - mouse hover effects
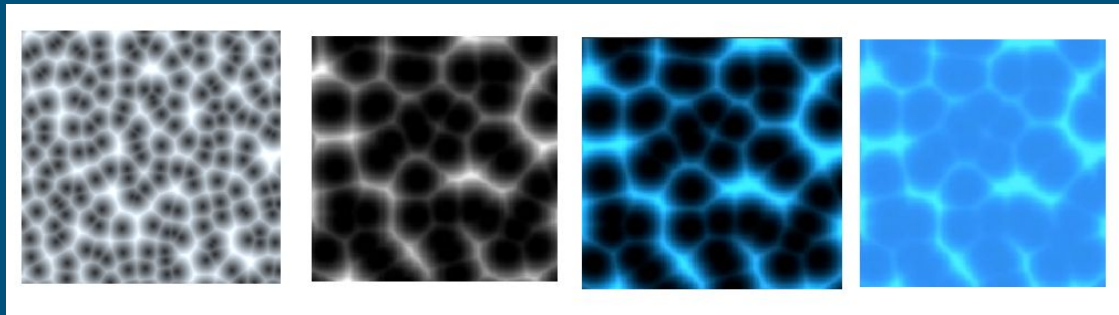
Water Splash Shader

- Black and white splash texture and ground texture
  - Render splash texture onto the ground texture.
  - Use the splash texture as a mask for the water shader.
- Get hit point UV coordinate via raycast
  - Replace every pixel in a rect around the hit point with the splash texture pixels.
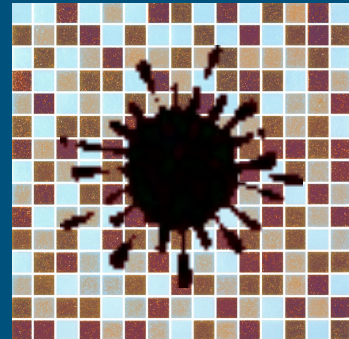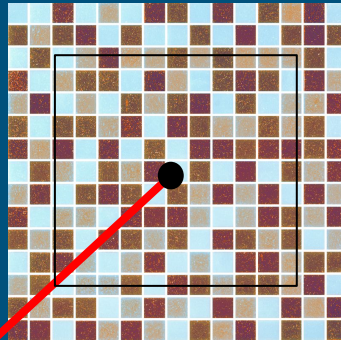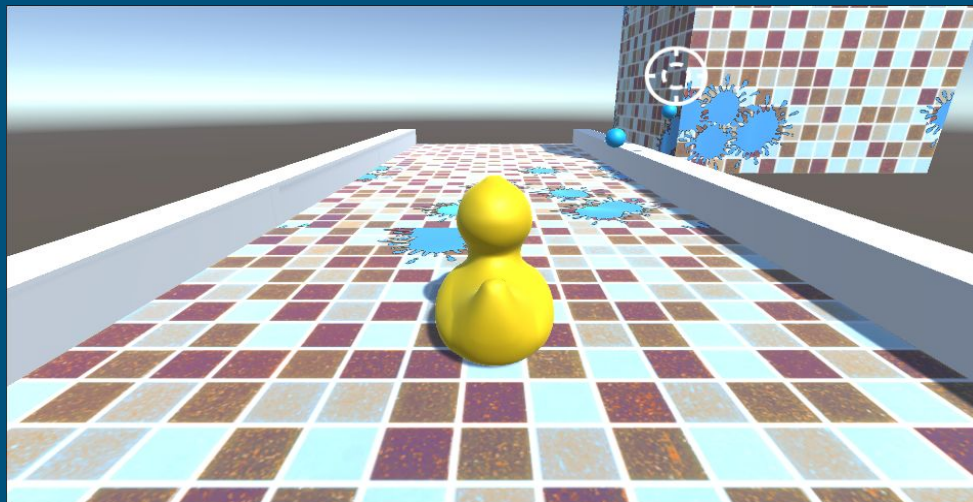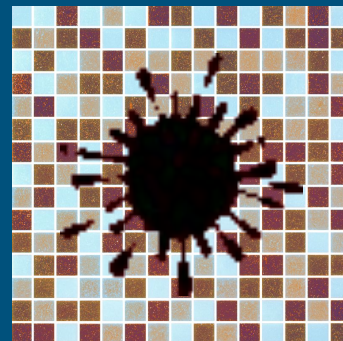
Water Splash Shader

- Water shader based on voronoi noise
  - The voronoi noise has several cells and ripples
  - We only want to use the ripples
  - Increase the cell density
  - Multiplay the white parts of the voronoi with a sky blue color
  - Add the blue base color to the black inner parts of the cell
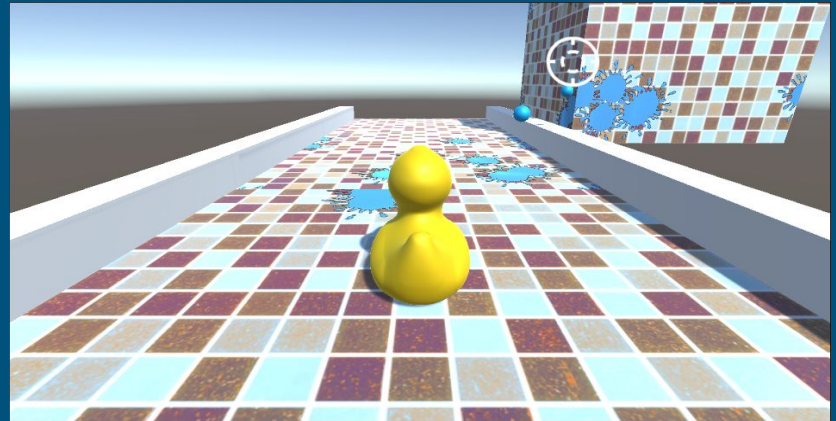
Water Splash Shader

- Added time to move the water in negative z-direction

- Use shader to render water over the splash black parts

Demo

Gameplay Demo

Water Splash Shader

- Problems with the current system:
  - Splashes don't work on texture edges between two textures.
  - If UV texture repeats on one object the splashes appear on all sides of the object.
  - Splash size is tied to object scale.
  - Splashes don't wrap around edges.
  - Raycast can only hit one object at once, but projectiles can hit multiple objects.
  - Use shader to render water over the splash black parts

New Water Splash Approach

- Decals instead of drawing on texture

- Hitscan instead of particles