Icewave - Interim Presentation

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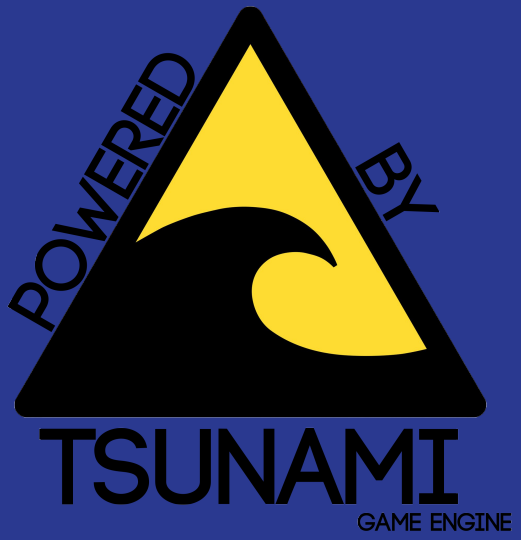


SURFING SIMULATION

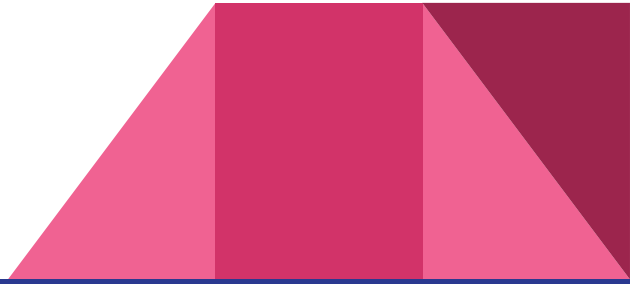
PHYSICALLY BASED WATER TURBULENT LIQUID RENDERING

BIG IDEA BULLSEYE

Functional Minimum

- Tsunami Game Engine
  - ➔ GameObjects (with basic components)
  - ➔ Scene Structure
  - ➔ Resource Loaders

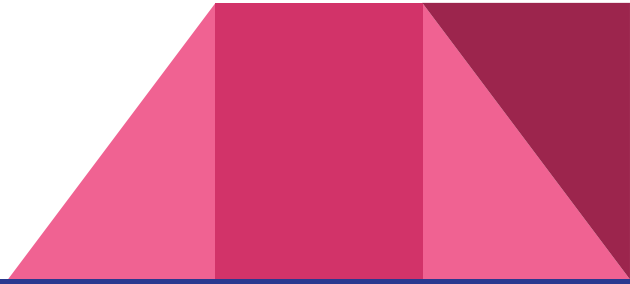
- Graphics
  - ➔ Raytracer (for water representation)
  - ➔ Rasterization based Pipeline (Solid Render Queue)



Functional Minimum

- Physics
  - ➔ Liquid Simulation (4D SDF Grid)
  - ➔ Rigidbody Physics (Forces and Velocity)
  - ➔ Water-Object Interaction (Sphere)

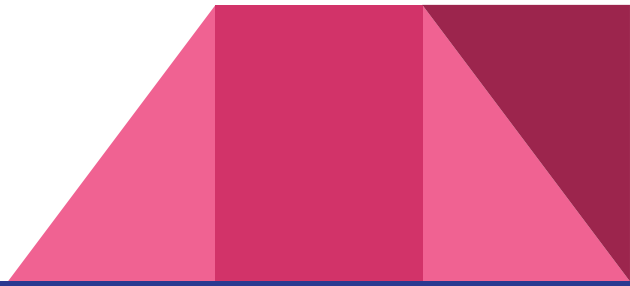
- Input
  - ➔ Basic Input Scheme (simple device messages)



Low Target

- Tsunami Game Engine
  - ➔ Efficient Memory Usage
  - ➔ Transparency
  - ➔ Graphical User Interface

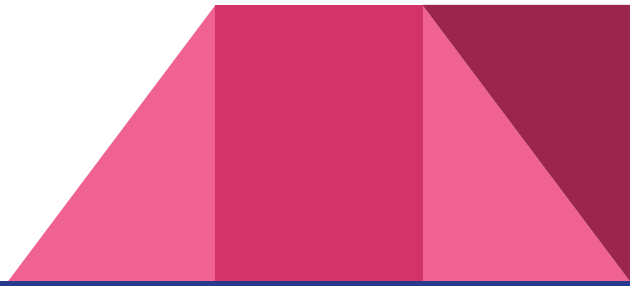
- Graphics
  - ➔ Raytracer
  - ➔ Solid
  - ➔ Merger
  - ➔ GUI
  - ➔ Font



Low Target

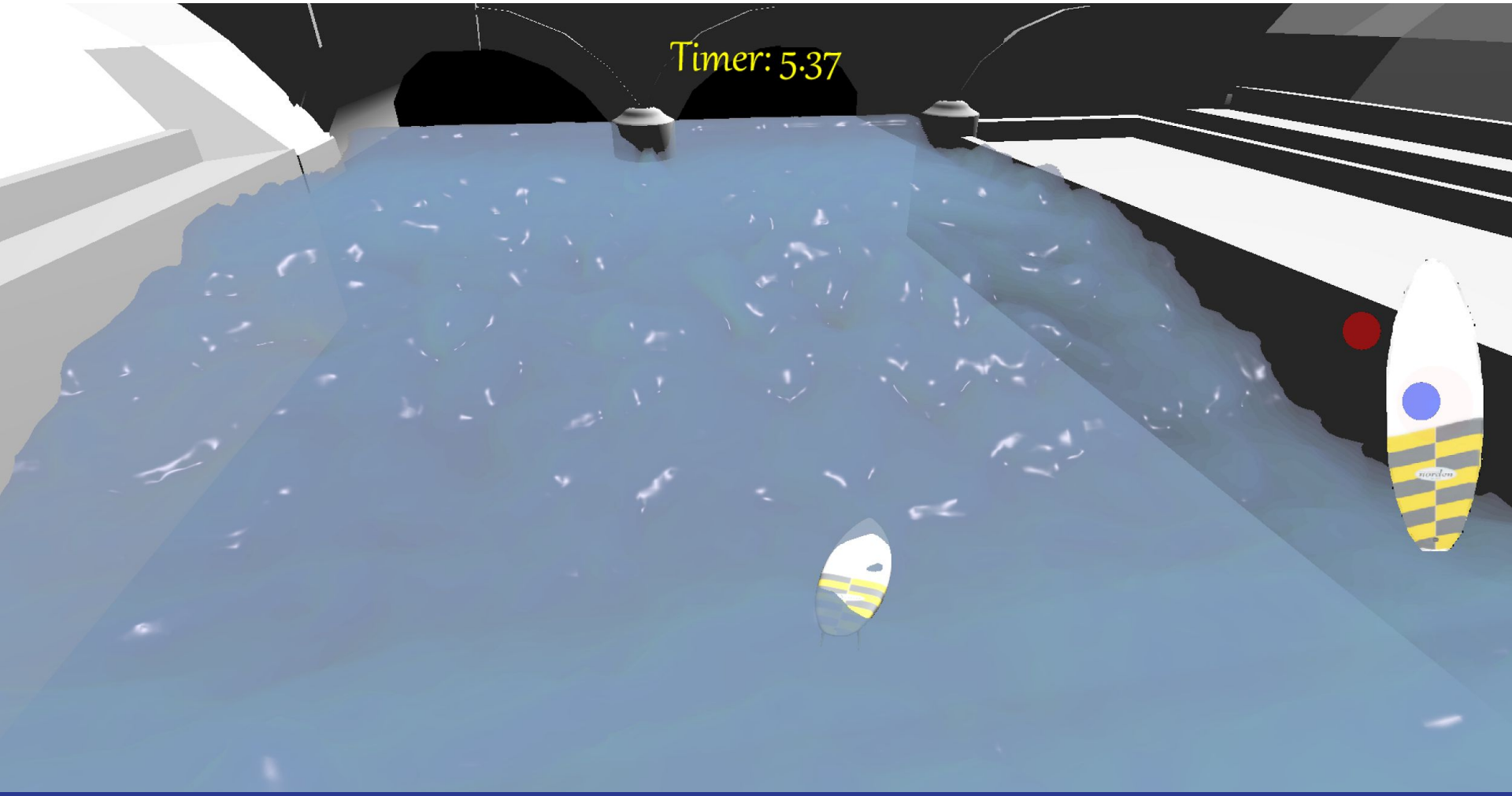
- Physics
  - ➔ Rigidbody Physics (rotational components and impulses)
  - ➔ Water-Object Interaction (arbitrary shapes)

- Input
  - ➔ Robust Input Handling System (RawInput API)



Desirable Target

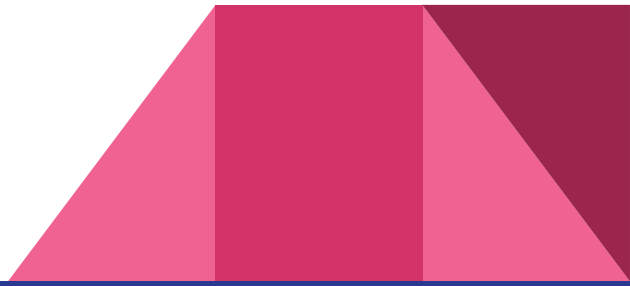
Work in Progress



Challenges

- Finding the correct Input Device
  - ➔ Problematic integration of some devices (SteamController)
  - ➔ Focus on Smartphone integration (via Network, Client/Server)

- Engine Architecture
  - ➔ Needs to be easy to use, but performant and efficient
  - ➔ Combining different frameworks (Physics/Graphics/Input), but work perfectly together with blackbox usage
  - ➔ Extensible and powerful engine!



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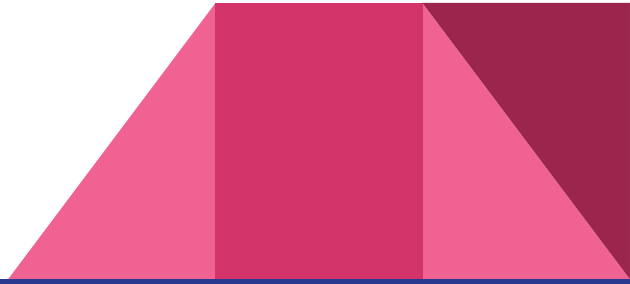
Questions?