

think tank

think or swim

by

Church of the Spinning Cube

4kb of executable graphics

presented at

Nova '19

About

This is a 4KB exegraphics demo - a tiny program that draws a pretty picture within 30 seconds.

It uses path tracing, with a mix of direct raytracing (the boat is a mesh) and ray marching (the water is a distance function). There's no post-processing, depth of field and other effects are all simulated in the camera. The foreground bokeh effect is literally dust close to the lens.

Requirements

Recent macOS (I haven't tested older versions, but it runs fine on 10.14), and a recent, ideally very fast, GPU. The GPU needs to support Metal. It will automatically choose the fastest GPU, and supports eGPUs.

How to run it

There are several versions of the demo. They're all the same except for the resolution, but a high end GPU is recommended for high resolution. If you have a fast GPU, go for 1080p or 4K. If you have an Intel GPU, go for 720p or less. Running at higher resolution on a slow GPU will generally work, but the output will be noisy. Worst case, it'll overload your GPU and you'll either get a white screen at the end, or you'll get logged out of macOS.

To run it, open Terminal, navigate to the demo folder, and type `./thinktank_1080p`.

It'll show various errors in the terminal, just ignore them, it's fine. Wait 30 seconds and the picture should appear.

Credits

Coded by psonice

The startup code is based very loosely on Rootkids' intro setup.

Inspirations

Two things:

1. I remember seeing a photo. An art installation. A room, the back wall white, brightly lit. A wave fills the room, solid, immense, powerful, frozen, black. I wanted to recreate that image but with one difference: the light from the back wall would shine through the water. This is my attempt, although the concept grew as it took shape.

But does that photo exist? I'm not sure. This is the closest thing i can find. It's the right website, right time period, but it's not what i remember. Perhaps i saw this and imagined the rest?

<https://www.thisiscolossal.com/2018/02/suspended-ocean-wave-installations-by-miguel-rothschild/>

2. Suncrasia's Revision winning exegraphics "International Shipping". The composition here is wonderful, and the execution is great. I wanted to pay a little tribute to it, hence the paper boat. Many thanks to blackle for okaying that!

<https://demoszoo.org/graphics/202731/>

Warranties

There are none. Run at your own risk. It shouldn't cause any physical damage (although it will heavily stress your GPU for 30 seconds!) but if your GPU is slow, it might cause you to get logged out. Save any work you have open.

License

Do what you will.