

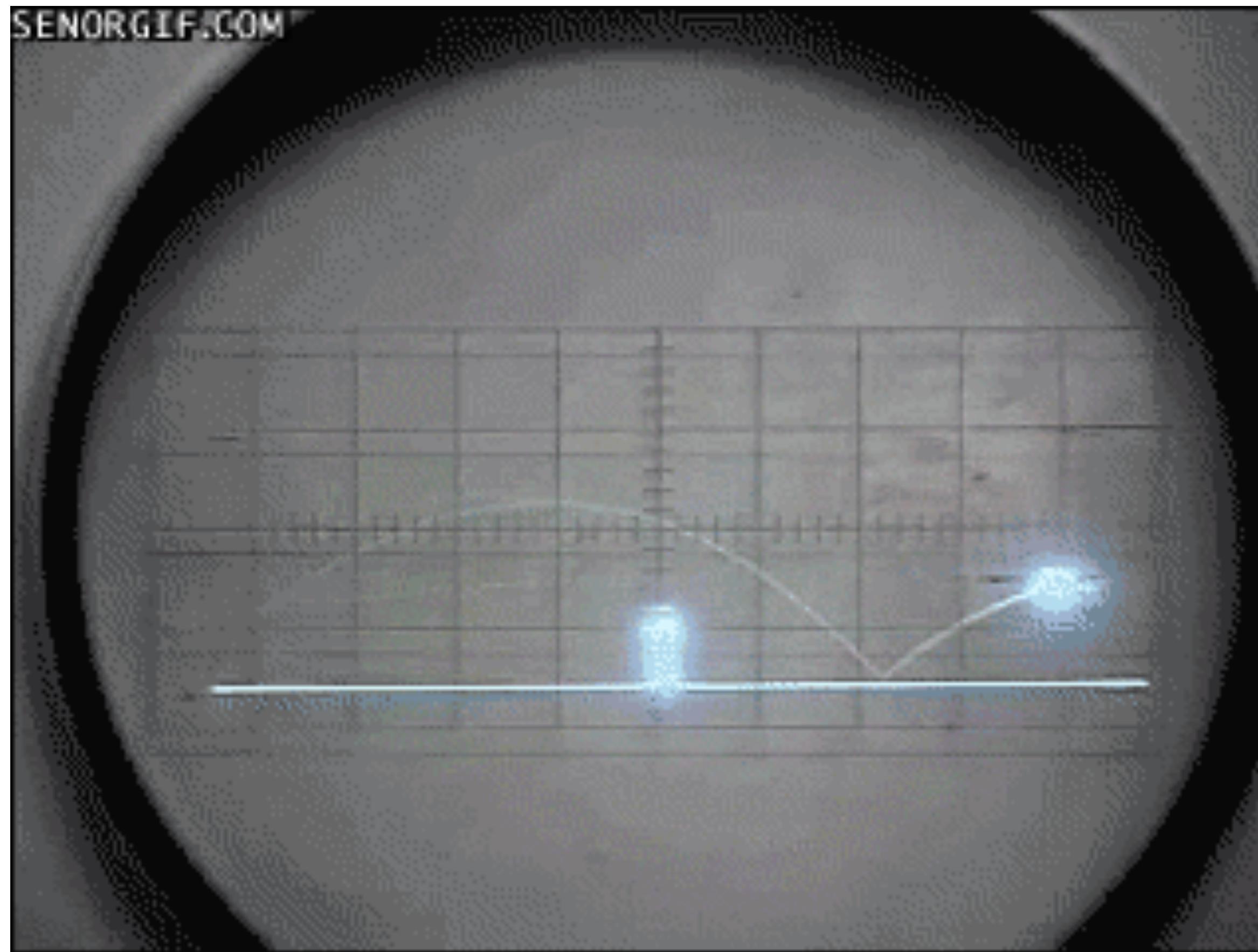
Ray-casting and the First 3D Games

Computer Graphics

Parsa Toopchinezhad - Spring 2024

A Brief History Video Games

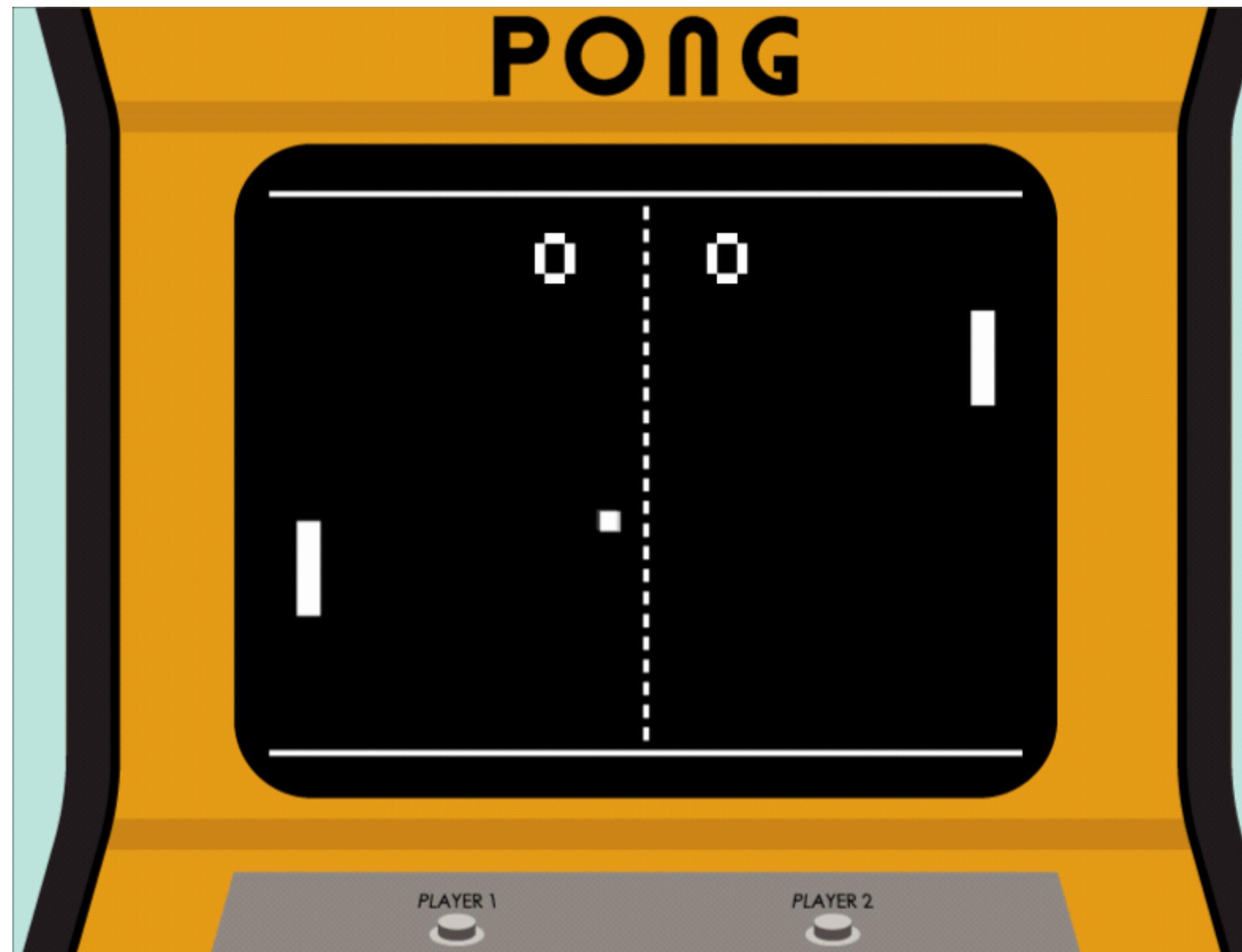
The first video game



Tennis for Two - 1958

A Brief History Video Games (Cont.)

Early arcade days



Pong - 1972



Pong - 1978

A Brief History Video Games (Cont.)

The rise of home consoles



Atari 2600 - 1978



Nintendo Entertainment System - 1985

A Brief History Video Games (Cont.)

NES games



A Brief History Video Games (Cont.)

Birth of hand-held and computer games



116 million sold



Nintendo GameBoy - 1985

We've seen a lot of games
But they all had one thing in common:
2D

Entering the 3rd Dimension

First generation of 3d games



Wolfenstein - 1991



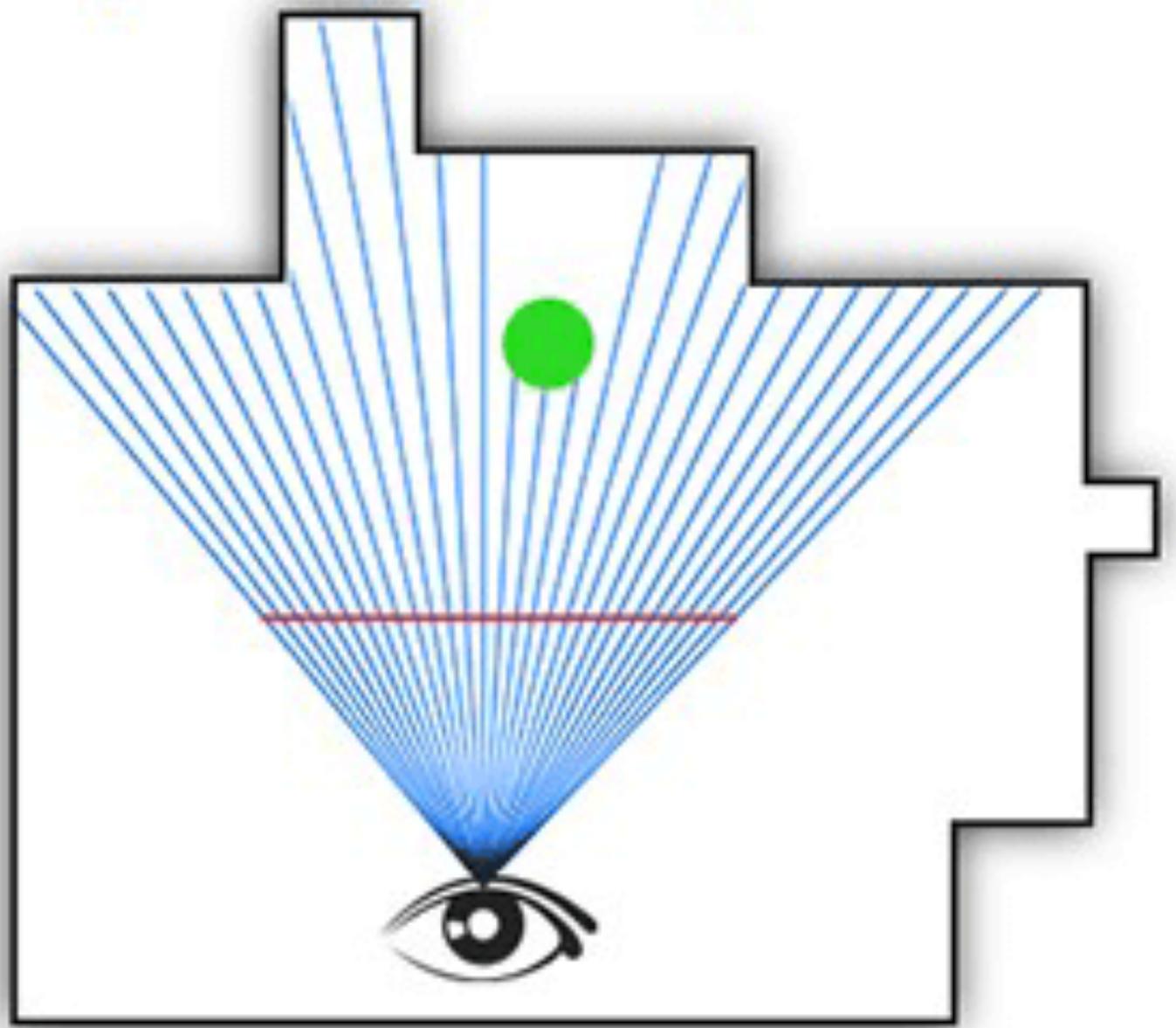
Doom I - 1993

**How did these games run on
primitive hardware?**

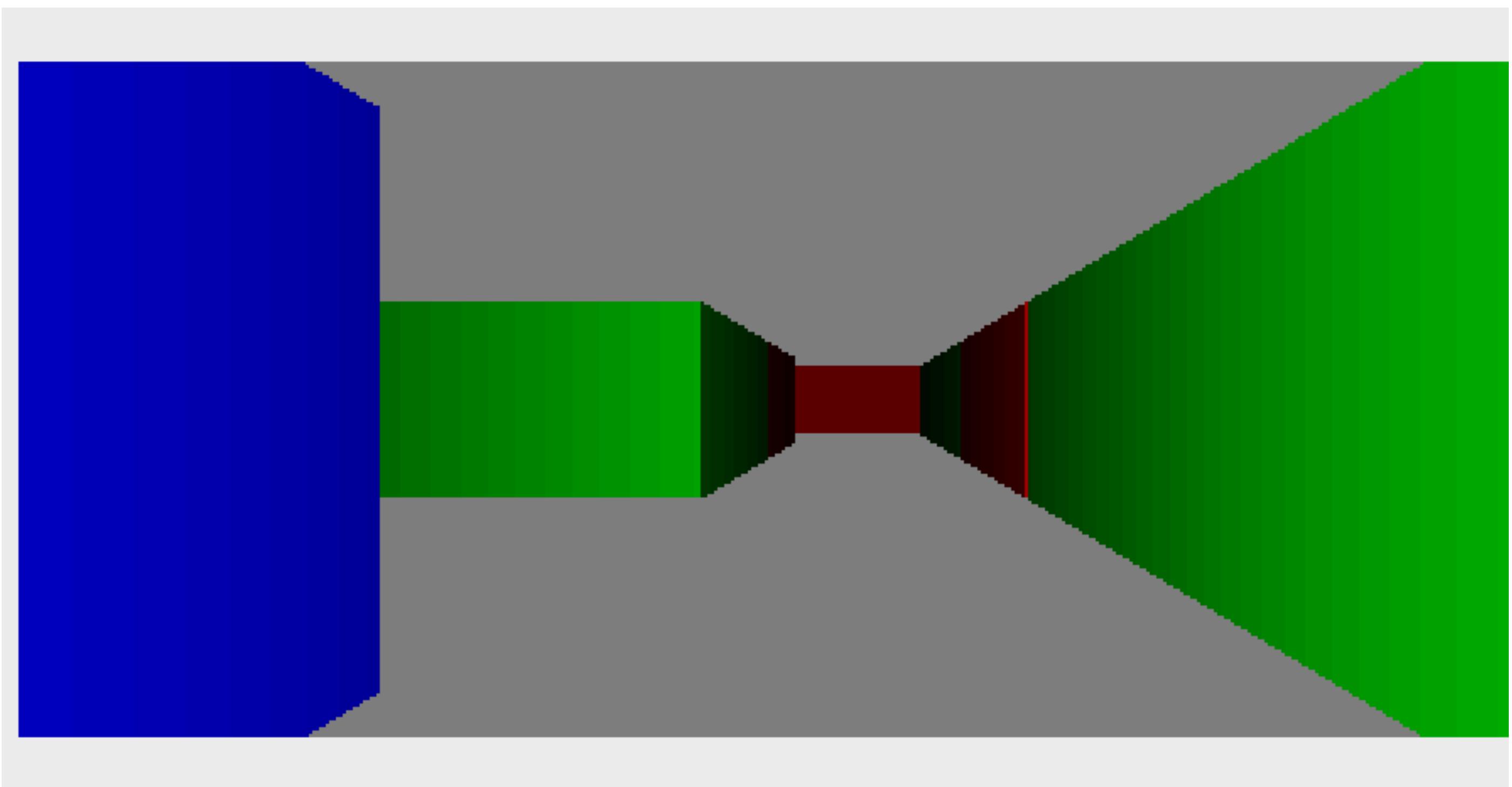
Ray-casting

As simple 3d graphics technique

Ray casting: example scenario

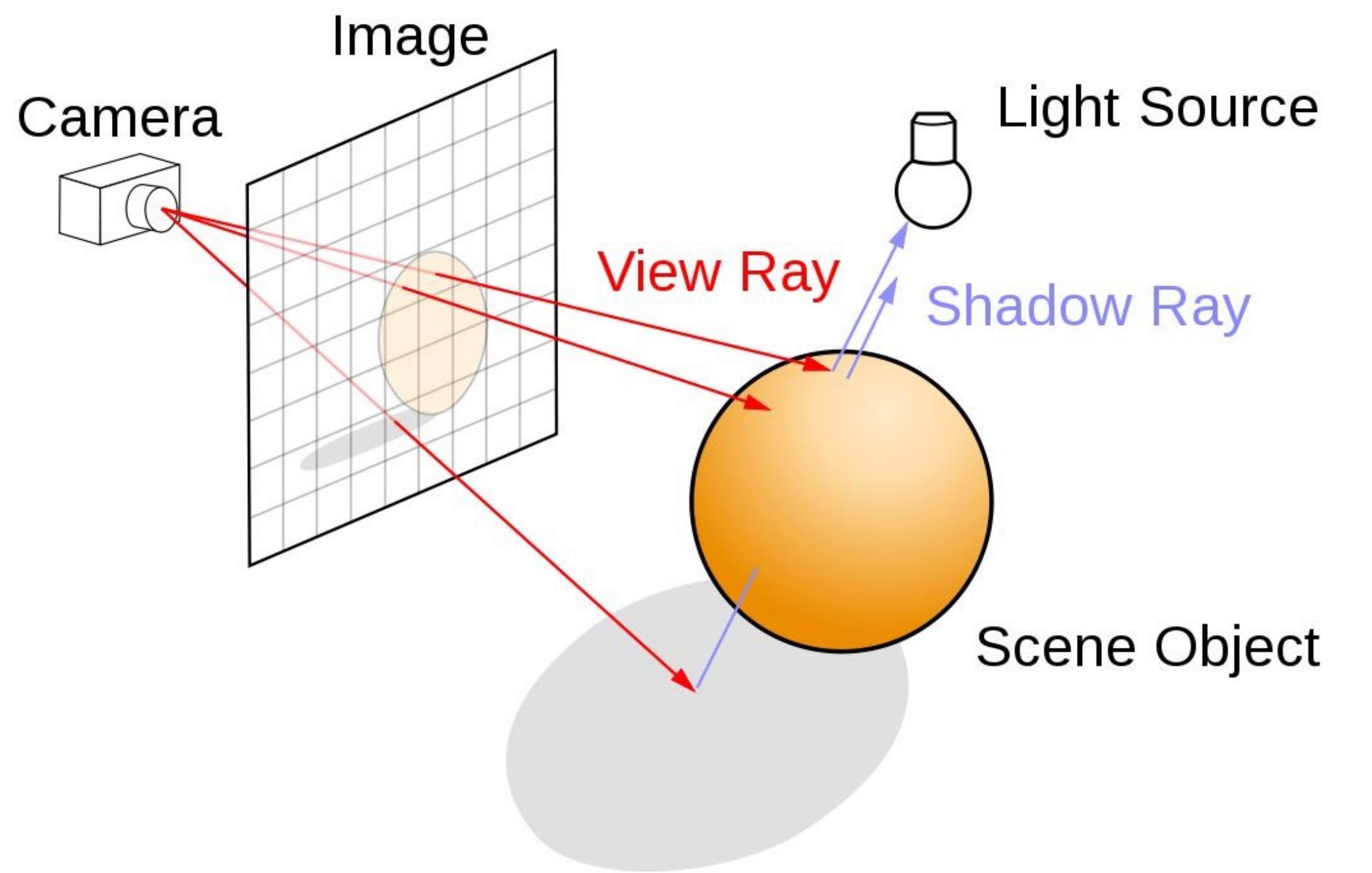


- Eye icon: Observer's viewpoint
- Blue line: Rays cast from viewpoint
- White wall: Walls
- Red line: Camera plane
- Green circle: Object obscuring wall



Ray-tracing

A modern evolution of ray-casting



The End
Thanks for your attention