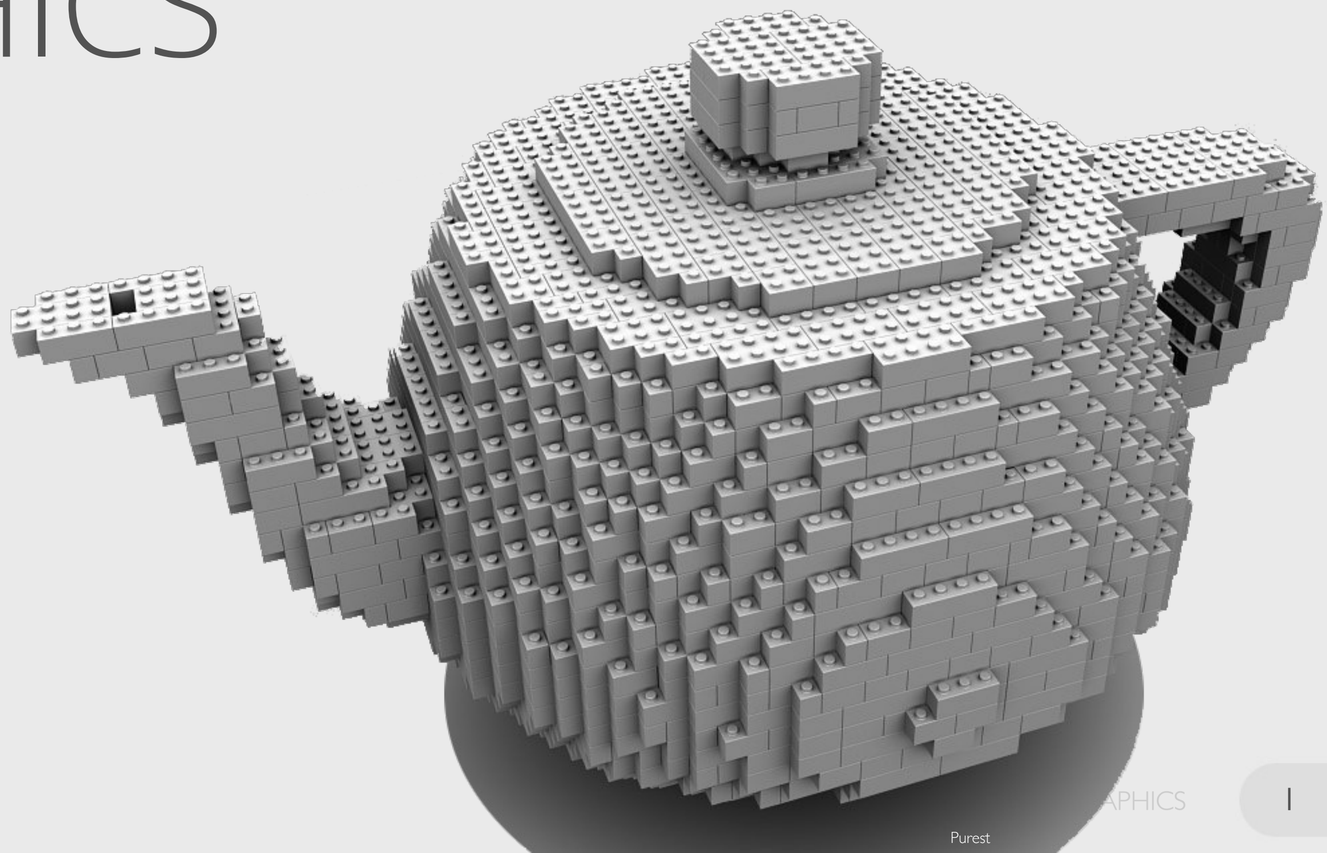
UNIVERSIDAD PANAMERICANA

MULTIMEDIA & COMPUTER GRAPHICS

Dr. Arturo Jafet Rodríguez Muñoz

Ing. Bernardo Moya de la Mora

RAY TRACING



Purest

RENDERING

Converts a model into an image

Either simulating light transport or some non-photorealistic algorithm

Light transport

- Transport (how much light from A to B)
- Scattering (how surfaces interact with light)

RENDERING

Scanline rendering

Ray tracing rendering

Fastest

Most fidelity

RAY TRACING

Technique for modeling light transport

- Ray casting
- Recursive ray tracing
- Distribution ray tracing
- Photon mapping
- Path tracing

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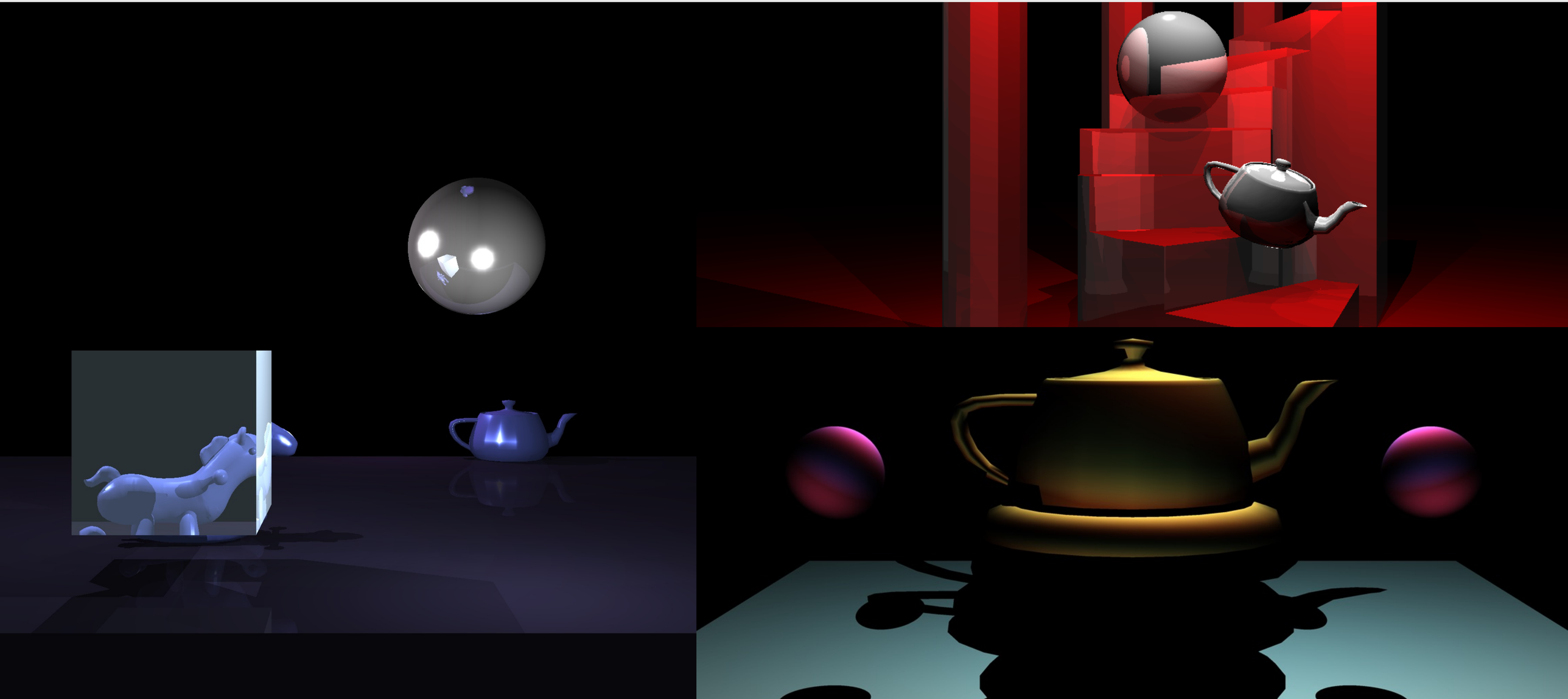
RAY TRACING



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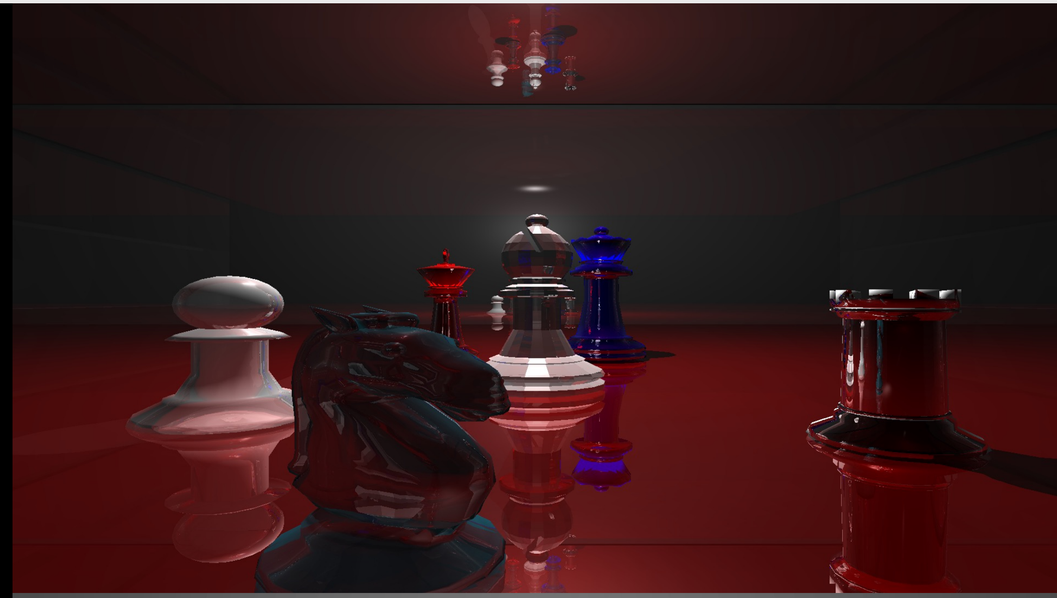
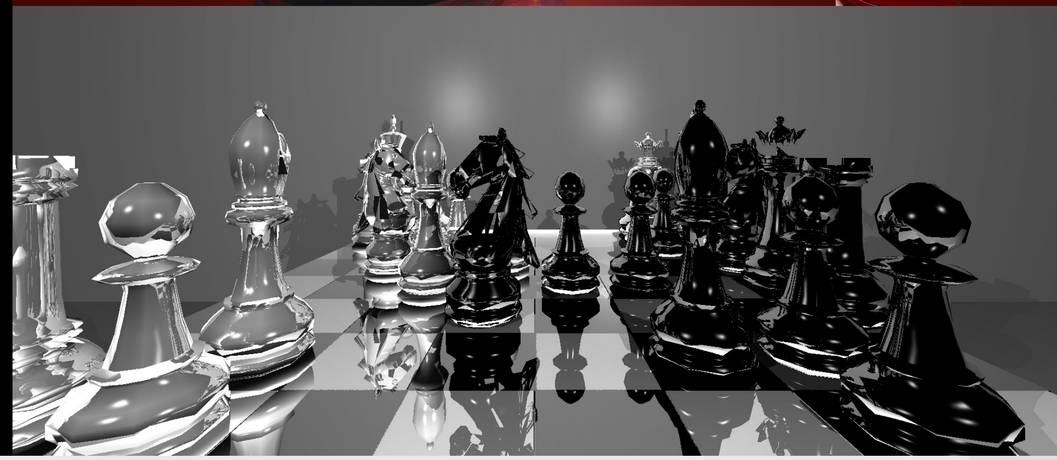
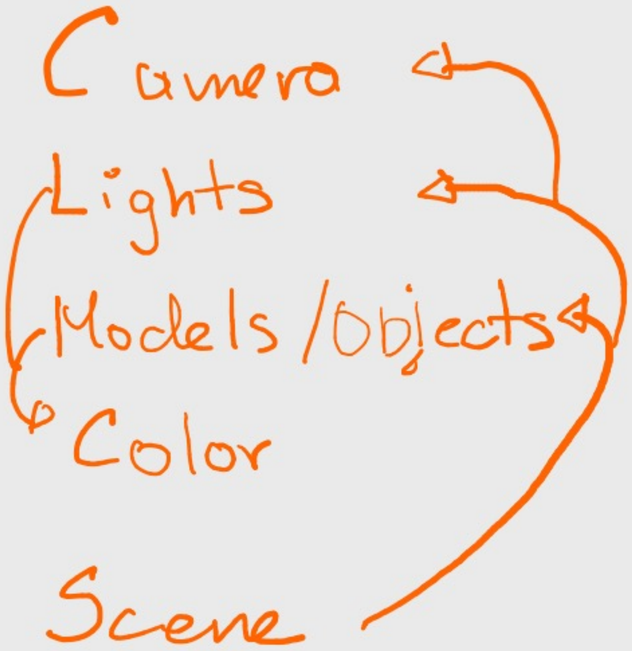
RAY TRACING

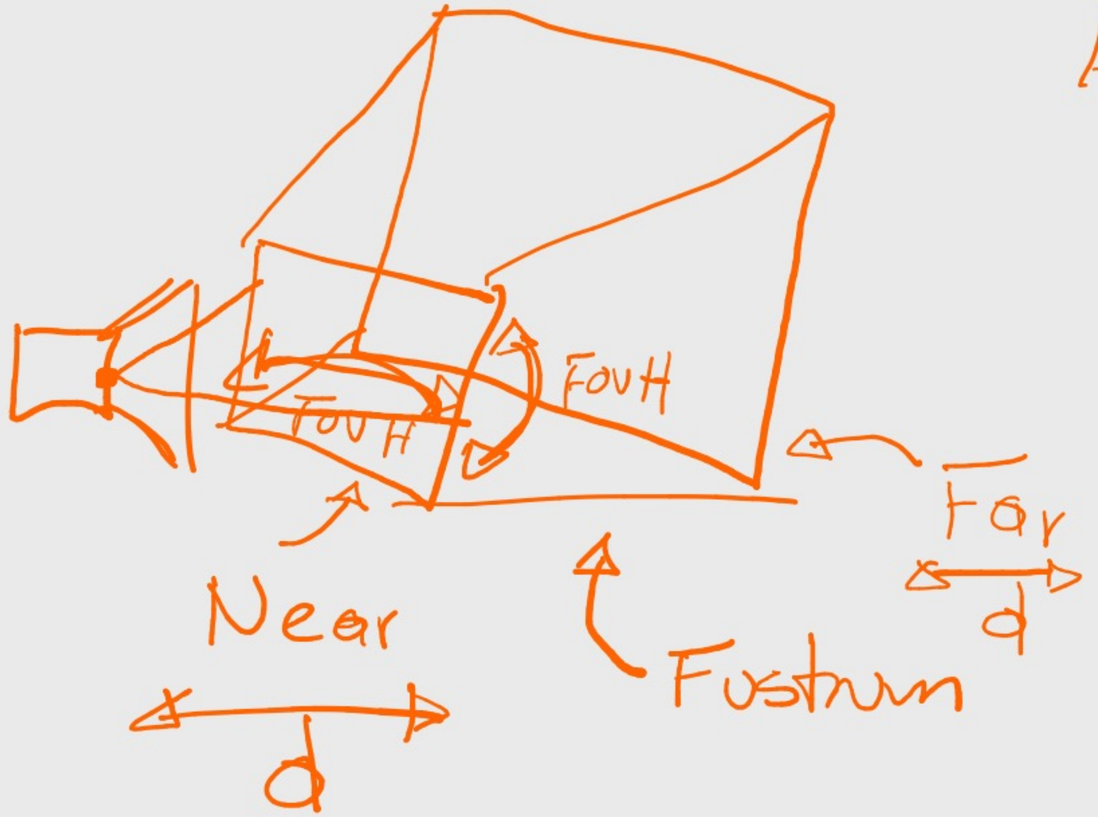




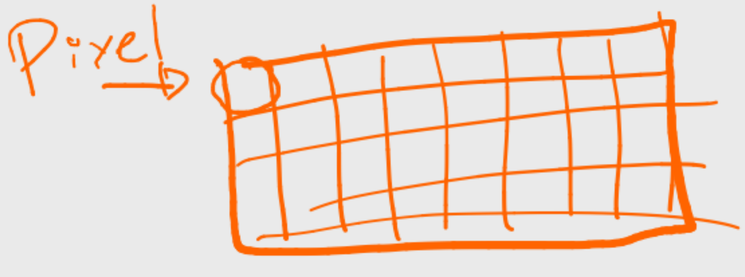
RAY TRACING

RAY TRACING


Camera
Lights
Models / Objects
Color
Scene


Field Of View Angles
FovH
FovH
Near
d
Frustum
Far
d

RAY TRACING



300 x 300 pixels = 90,000 rays

Spheres

Directional

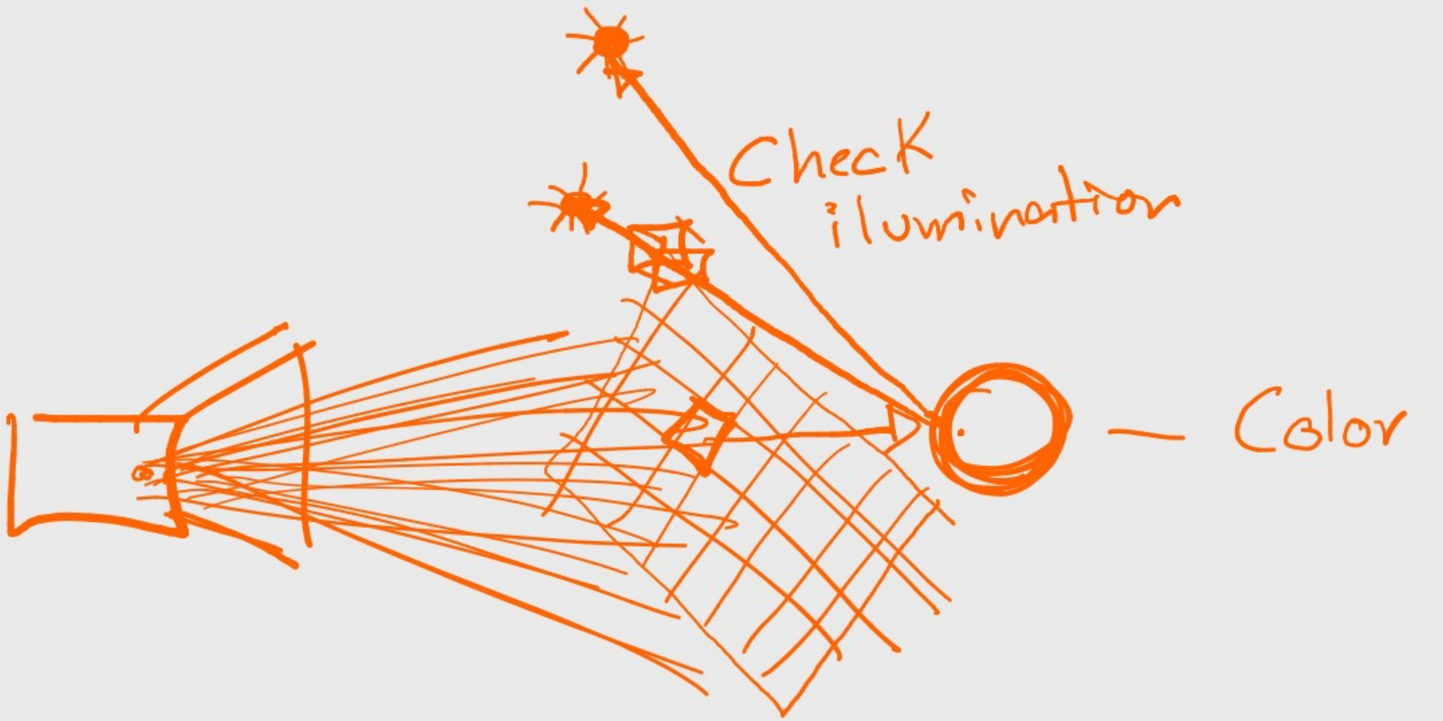
Direction

Point

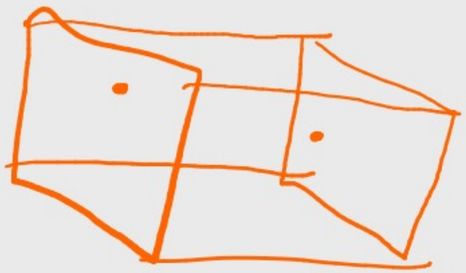
Origin

Spot

RAY TRACING



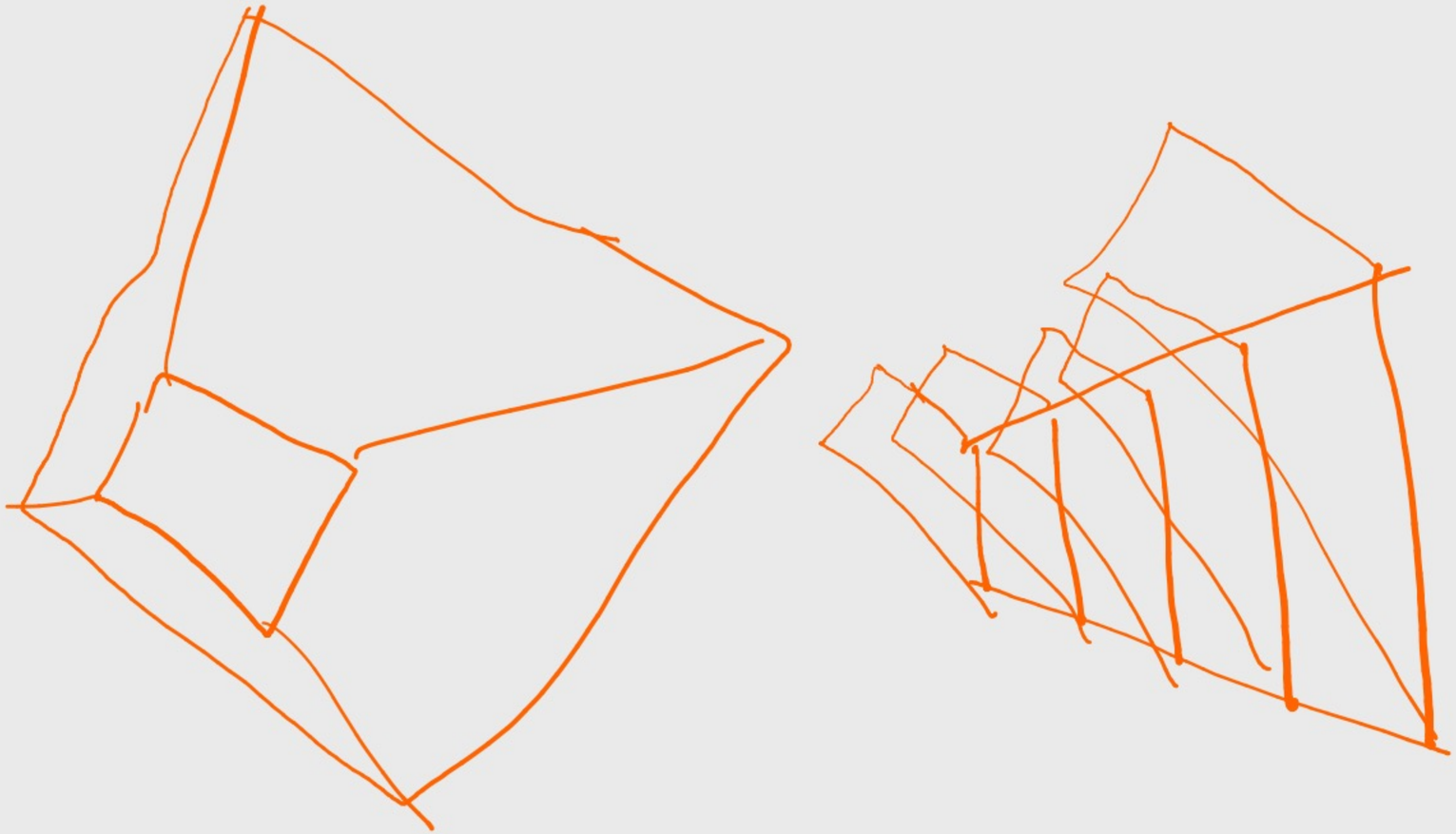
Scene
↳ [ ] Objects
↳ [ ] Lights
↳ Camera



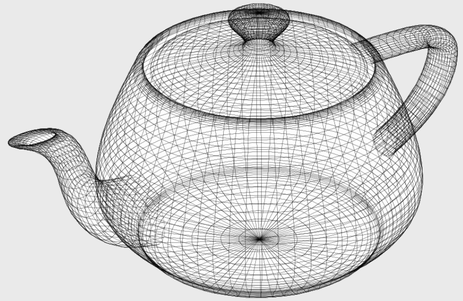
Orthogonal

Perspective

RAY TRACING



REFLECTION



Pato **Charly** Carlos S **Dubin** Emiliano

Jaime **Valeria** Kenzo **Rodrigo** Cracklitos

Omar Soto **Samuel** Fátima