Nautilus Engine: *Milestone 3*

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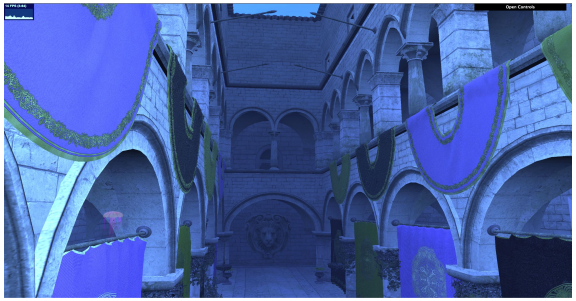
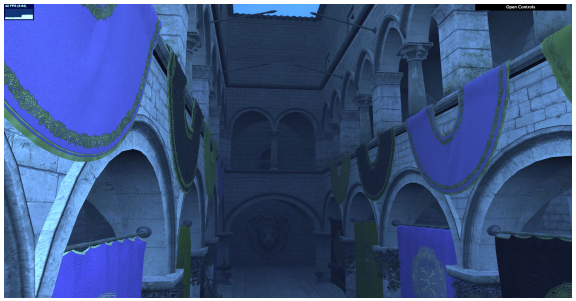
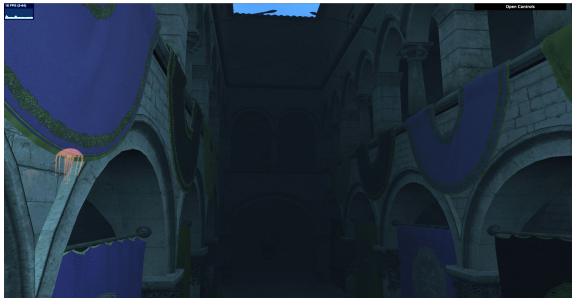
Progress Update: Underwater Spectral Rendering

- Data is taken from an for 6 different Jerlov water types, each of which classifies a set of different ocean water properties.
- Simple surface shading with downwelling/horizontal attenuation.
- Multi-scattering for distance-fog-like effect.

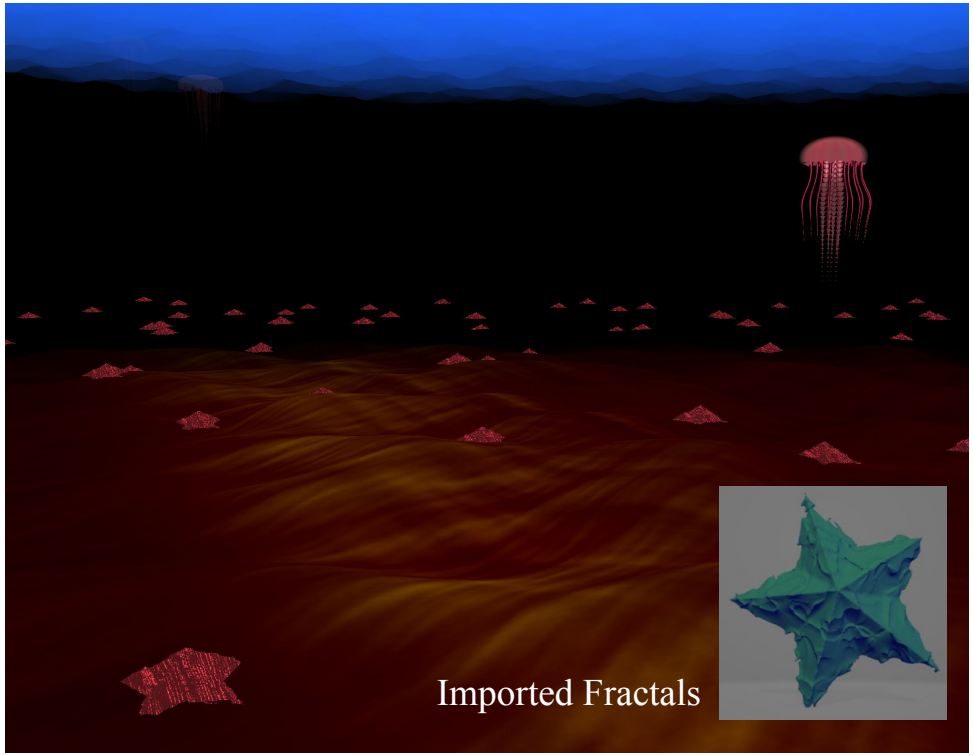
Progress Update: Fractal Loading & Instanced Rendering

GPU-Accelerated Instancing:
Efficient rendering of thousands of coral instances across the ocean floor.

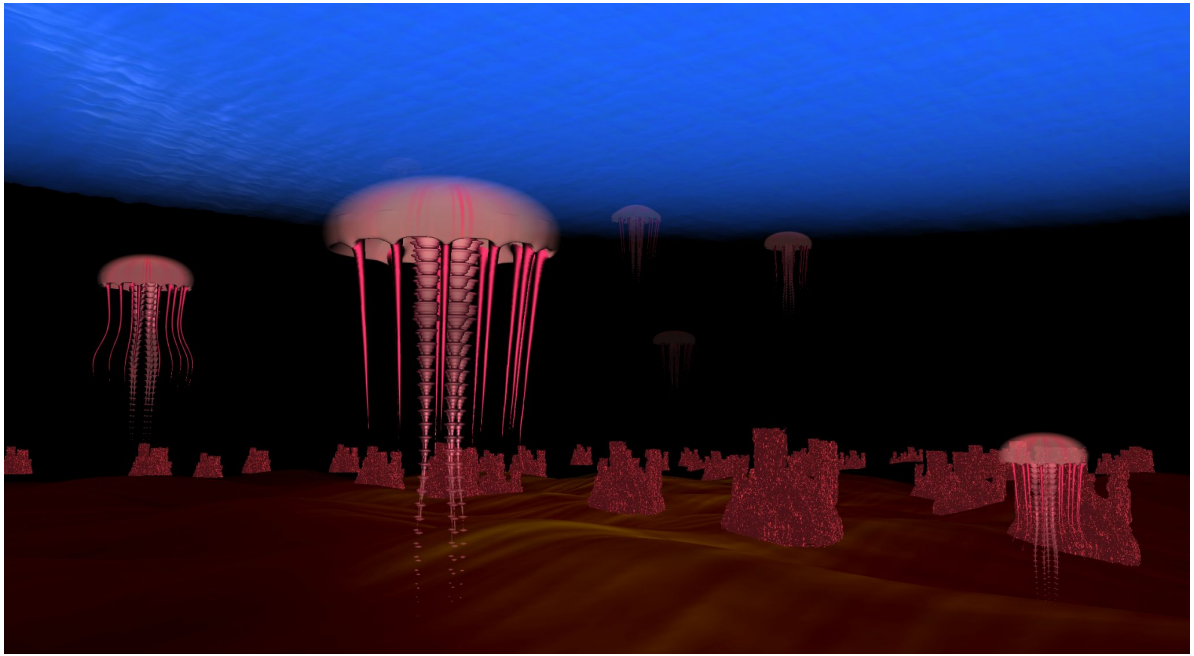
Grid Spacing Technique:
Uniform coral placement ensures even coverage and consistent spacing.

Perlin Noise Offset:
Adds natural randomness to coral positions, breaking grid-like appearance.

Terrain-Adaptive Placement:
Corals positioned on ocean floor using displacement map for realism.



Next Steps: Sea you next week!



CUDA Fractal Generation

- Accelerate & Create More Coral Types

Procedural Placement Enhancements

- Clumps
- Tiling
- Scaling & Rotation

Single Scattering

- Extending Multi-Scattering to Ocean Assets
- Sky lighting