

Radiosity Rendering with WebGL

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What is Radiosity?

Radiosity is a rendering technique that considers light as energy and simulates the distribution of energy in a scene.

Because of this nature, we can see different phenomena, like colour bleeding and soft shadows.

Radiosity Equation

$$B_i = E_i + \rho_i \sum_j B_j F_{ij}$$

In Equation, B_i is the Radiosity of patch i , E_i is the emission of patch i , ρ_i is the reflectivity of patch i , B_j is the Radiosity of patch j , and F_{ij} is the form factor between patches i and j . This equation is computed for each patch i

Form Factor

Form factor is the relation between two patches.

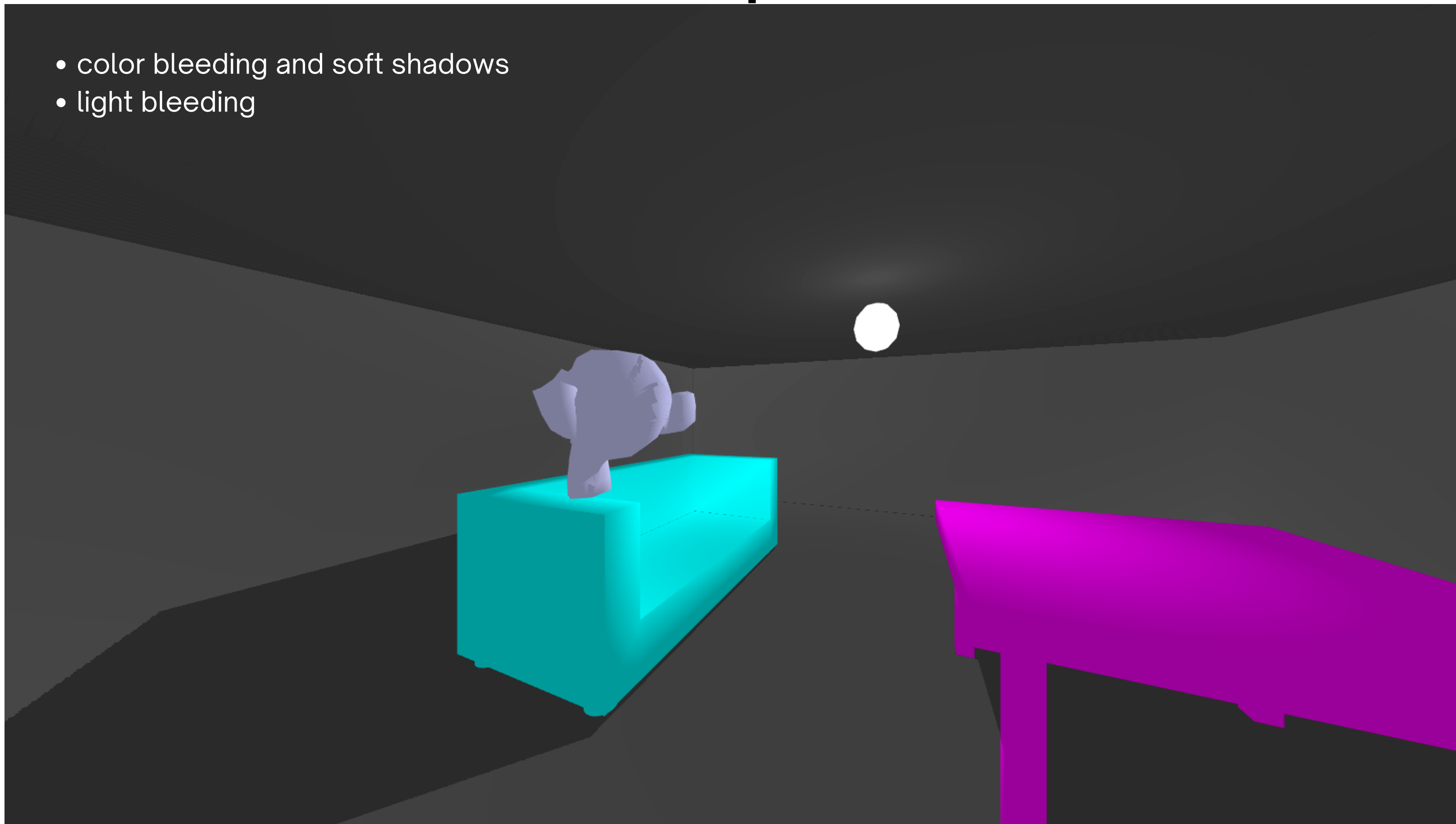
If patch i and see patch j then the form factor value between them is 1, else it is 0.

$F_{ij} = 1 = F_{ji}$ \rightarrow i and j can see each other

$F_{ij} = 0$ \rightarrow i and j cant see each other

Output

- color bleeding and soft shadows
- light bleeding



Code