

Assignment 3 - Radiosity

1. `LoadData()`: Load the data from file and store the data into data structures.
2. `FormFactorCalculation()`: Calculate form factors as follows:
 - a. For each patch, construct a hemicube with 5 faces. For each face, pick an element and color it white and other elements black.
 - b. Project all these elements onto the 5 faces of hemicube and calculate the form factor for the patch-(selected)element pair by summing up delta formfactor values.
 - c. Repeat procedure for all the elements to get a row of FF table.
 - d. Repeat for all patches to get the complete patch to element FF table.
 - e. Save FF table in "FF.csv".
3. `LoadFFData()`: Read data from "FF.csv" and store into a 2D vector.
4. `RadiosityCalculation()`: Call this function each time `DoStep()` is called to see the progressive refinement in effect. In a single instance of this function call, the increase in radiosity of all the elements is calculated by shooting the unshot radiosity in the patches. Initial and delta ambient terms are also computed and used to calculate the final color of a vertex. The final color values of the vertices are calculated by interpolating them across neighboring elements.
5. Output: Resolution of hemicube = 500, number of iterations = 1000

