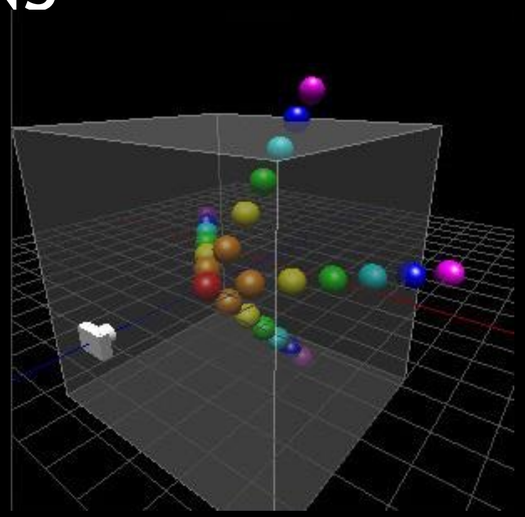
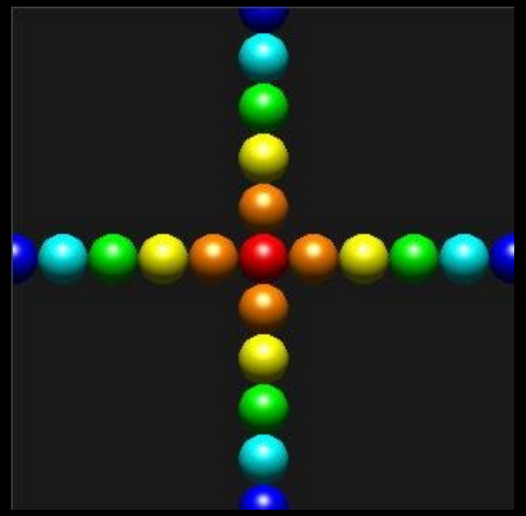
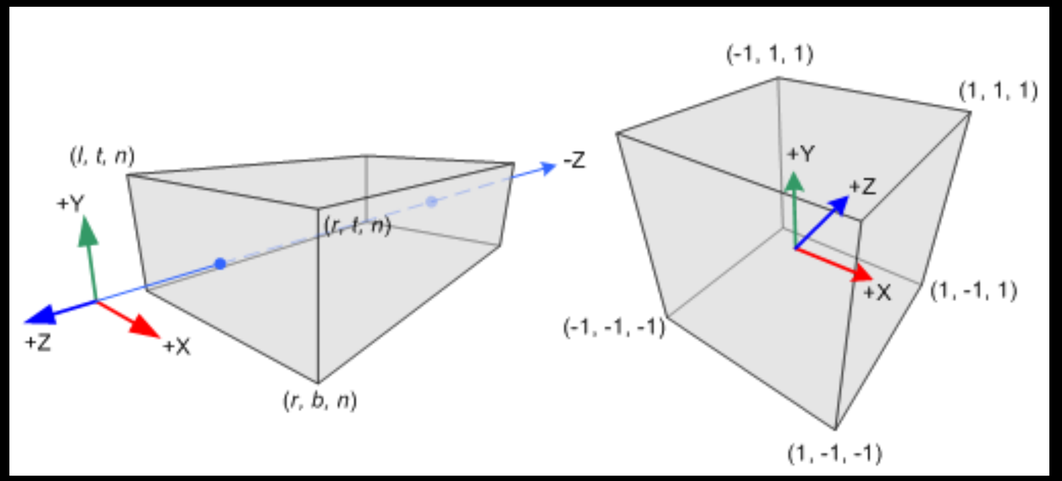
Projections

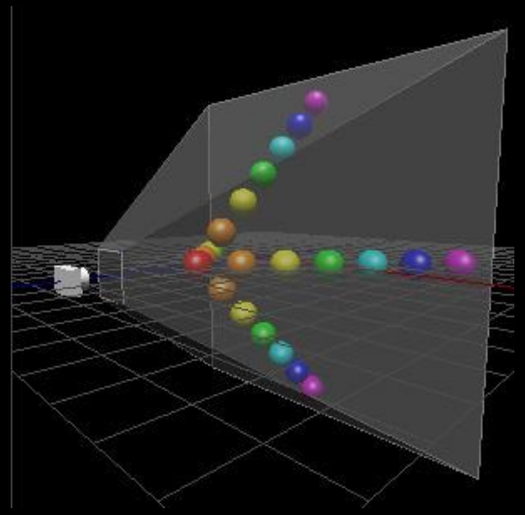
Orthographic projection

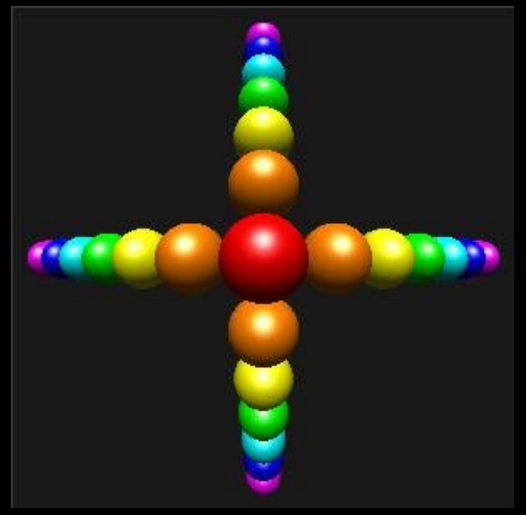


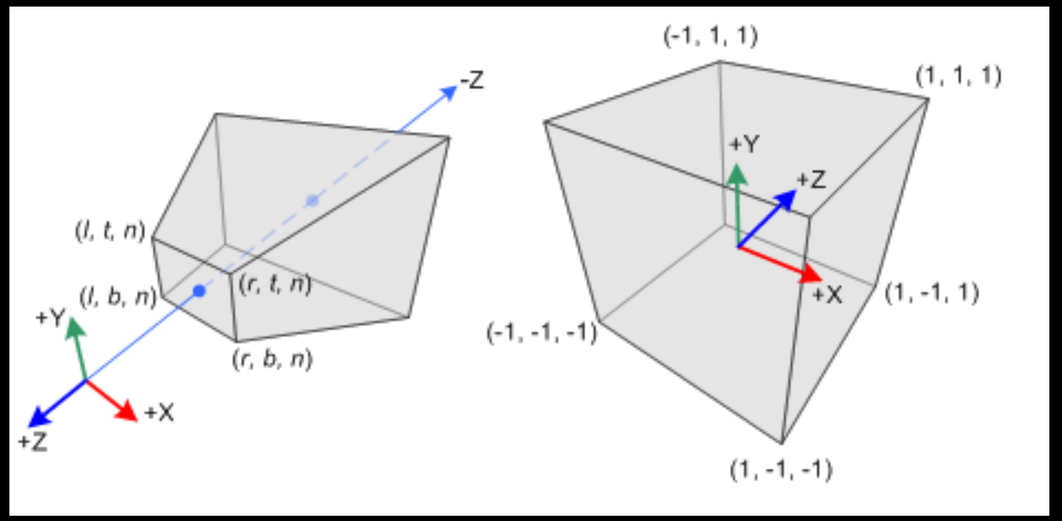




Perspective projection







[Song Ho Ahn]
"OpenGL", http://www.songho.ca

Orthographic Projection

- P =

$$\begin{pmatrix} 2/(r-l) & 0 & 0 & -(r+l)/(r-l) \\ 0 & 2/(t-b) & 0 & -(t+b)/(t-b) \\ 0 & 0 & -2/(f-n) & -(f+n)/(f-n) \\ 0 & 0 & 0 & 1 \end{pmatrix}$$

for r = right, l=left, u=up, d=down, n=near, f=far planes defining the cube that is of interest

- w-component is unchanged, not requiring a perspective division
- -> The size of objects does not depend on their distance to the camera