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Rotating Donut

Rotating donut program is frame buffer and a Z-buffer into which pixels (ASCII symbols) are rendered. It plots pixels along the surface of the torus at fixed-angle increments.

As mentioned, these pixels are ASCII characters corresponding to the illumination value of the surface at each point:

. , - ~ : ; = ! * # $ @ from dimmest to brightest.

In order to fill in the gaps, knowledge about rendering a 3D object (torus in this case) onto a 2D screen is needed: projecting each point (x,y,z) in 3D-space onto a plane located z' units away from the viewer, so that the corresponding 2D position is (x',y').