Scan-Line Method

Process display as a Scanline-by-Scanline progression, rather than polygon by polygon.

Step 1. Build an edge table for all polygons in scene, sorted by edge's lower y-coordinate; each entry contains x-coordinate at lower y position, plus y-coordinate Δx for each unit increase in y (to), and a reference to the polygon bounded by the edge.

Each polygon entry has plane coefficients plus shading information.

During processing we maintain an active edge table (AET) for current scanline, contains edges intersecting the scanline in sorted x order.

![Diagram]

At scanline k, AET is AB, AC so at AB enter ABC; shade span up to next edge AC, exit polygon to stop shading; no more edges so scanline is done.
At β, enter ABC at AB, shade to AC, exit ABC, move to FD, enter DEF, shade to FE, exit DEF, done.

At δ, enter AB, shade to DE, now in both ABC and DEF, use plane equations to compute z at y = δ, z is intersection of scanline with DE, since z in DE closer than z in ABC, shade for polygon DEF, move to CB where we exit ABC, to continue shading for DEF up to FE, exit DEF and done.

To handle interpenetrating polygons:

Split KLM into KLI, K' and KLM, that is, add false edge K'L'.

Once we assume no interpenetration, can use scanline coherence; if edges in AET are the same and in the same order as for previous scanline, shading for each span is also the same, no need to compute z for overlapping polygons.