Polygons

Definition

Take an ordered set of vertices (vertex = pixel in 3D),
take a set of edges between these vertices,
the polygon is then the space/area bounded
by the vertices and the connecting edges.
The most common polygon in 3D graphics is the triangle.

Polygon soups

A polygon soup is a group of <u>unorganized</u> triangles
that require <u>individual</u> manipulation, that is,
the triangles are not in relationship to one another.

Problems: • waste of storage space, surfaces often don't require
   many polygons, we could share vertices

   • loss of semantics, "which part of the scene
   does this polygon belong to?"

   • leads to "brute force rendering"

   • makes interaction with the model complex
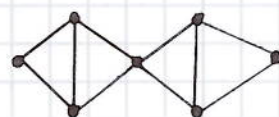
Polygon meshes

data structure ⟶

Polygon meshes are <u>linked groups of polygons</u> and
they are used to represent <u>surfaces</u>.

Advantages: • Semantics (of surfaces) are retained

   • Reduce storage space 'cause vertices and edges are <u>shared</u>

   • Helps with structuring the model so we
   can manipulate and interact with it
   more easily.

Example: Triangle strips

can be defined
using N+2
vertices (instead of 3N)