

ECE/CS 412

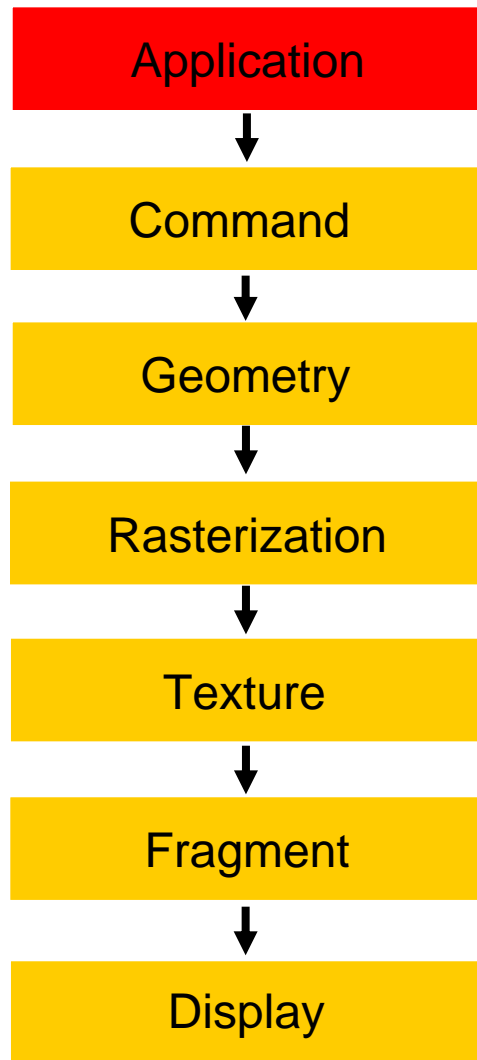
Introduction to Computer Graphics

Class 9

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Advanced Graphics Lab

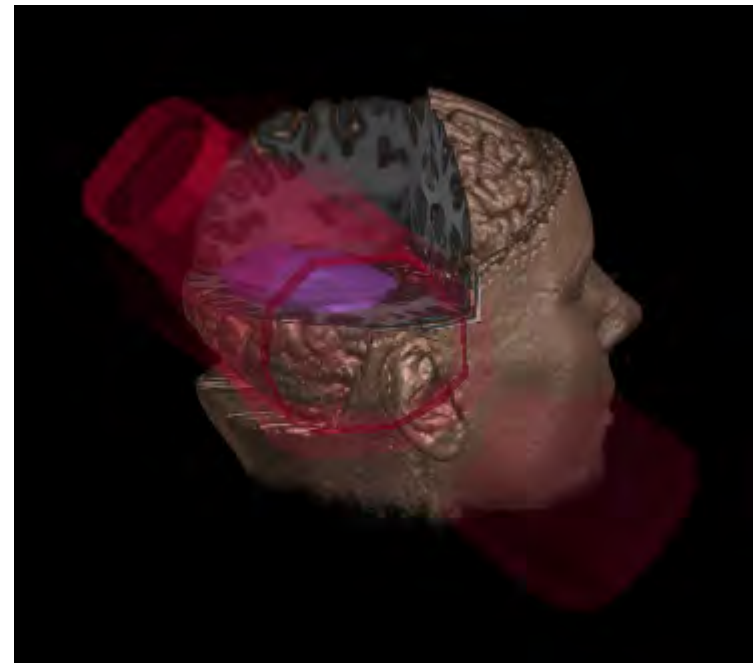


The real-time rendering pipeline



Modeling

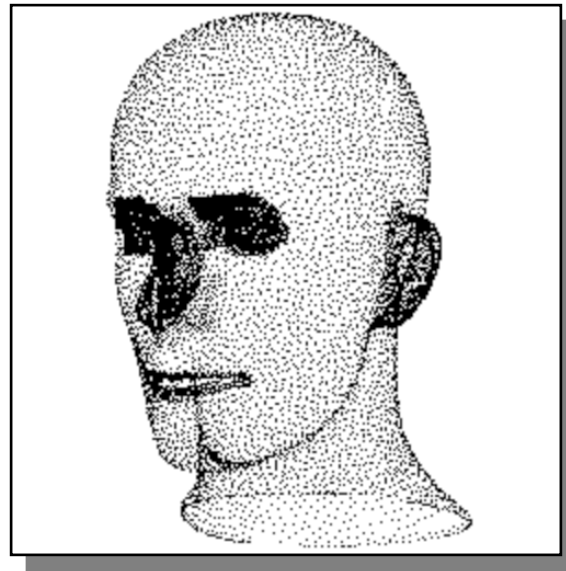
- How do you describe the 3-D shapes to be rendered?



source: **Stanford Graphics Lab**

Point cloud

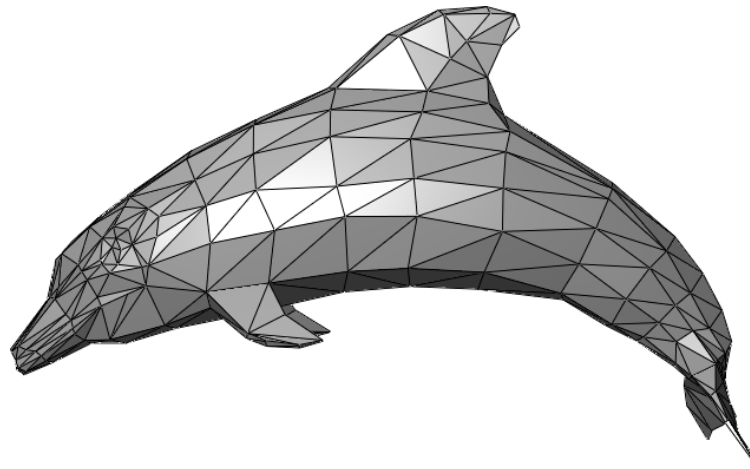
- Unstructured set of 3D point samples



source: H. Hoppe

Polygonal mesh

- A mesh of connected polygons (triangles)



source: wikipedia

Polygonal meshes

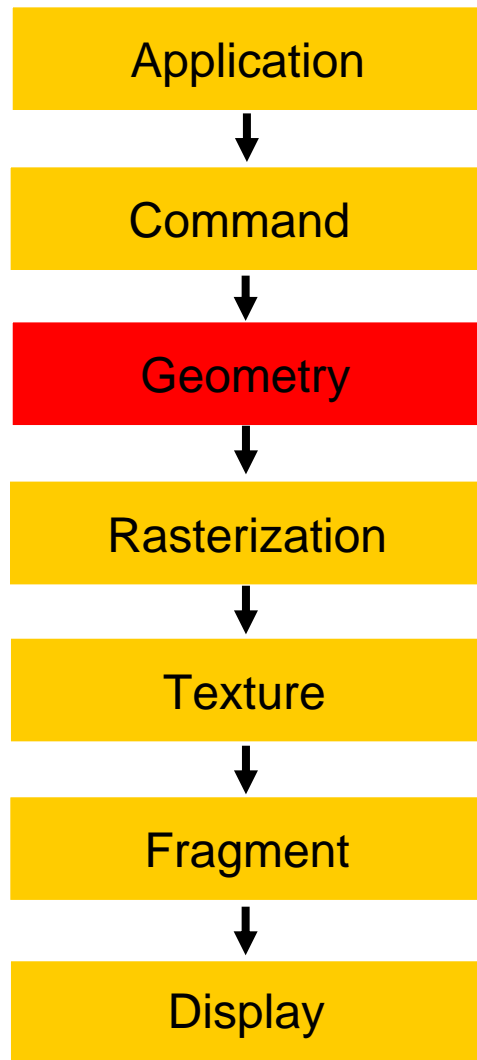
- Why do we care?
 - Simple representation
 - Hardware acceleration



Polygon mesh representations

- Important properties:
 - Fast traversal of topology
 - Memory efficient
 - Updates quickly

The real-time rendering pipeline



Objective

- Transform vertices from object space to screen space to prepare for rasterization

3-D Transformations

