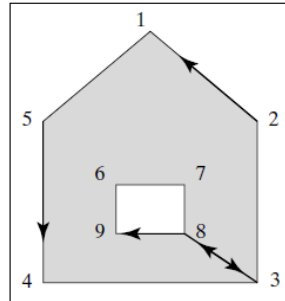


Lecture 5: Modeling shape with polygonal meshes

- (1) The following figure shows how a face containing a hole can be captured in a face list. A pair of imaginary edges is added that bridge the gap between the outer edge of the face and the hole, as suggested in the figure.



The face is traversed so that the interior of the face lies to the left. Thus a hole is traversed in the CW direction. Assuming we are looking at the face in the figure from its outside, the list of vertices would be 5 4 3 8 9 6 7 8 3 2 1. Sketch this face with an additional hold in it and give the proper list of vertices for the face.

- (2) Consider an octahedron that is the dual of a cube. Build vertex and face lists for this octahedron.
- (3) Write out the vertex, normal and face lists for the unit sphere, when $nSlices = 6$ and $nStacks = 4$.