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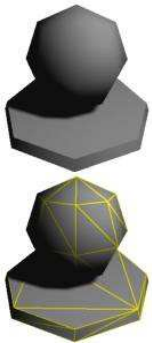
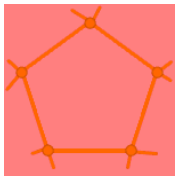


Classic (Limited) Game Modeling Topology

The most engine-preferred type of mesh is a convex mesh (all surfaces "bump-out", none are "dented-inwards") build off a small number of triangles and covered with a simple shader like the smooth shader (equivalent of "smoothing groups.")

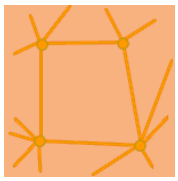
Original 3D games were designed to work on computers with *no* hardware graphics accelerators (also known as video cards.) Thus, there was no graphics / video-output processing device designed for just this specific task and nothing else. This placed a limitation on how many triangles could be output on-screen without bogging-down the frame-per-second rates and "playability."

Quadrilateral faces, though sometimes considered easier to manipulate with human logics, were unsuitable for the task, since often to achieve quadrilateral topology in an area you have to sacrifice the overall triangle count. Thus, the detail was often simulated by some very optimized and professional-looking texturing, which often included really cheap effects like lighting and glossiness baked to one single color map. The physics and interactivity were, of-course, placed before the graphical look of the game, and for optimal physics only algorithms for convex-surface topology were included in the code. Thus, your modeling was also restricted to convex-only meshes.



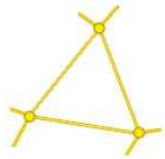
N-gons

Nooooo... Are you kidding me? This stuff is gonna crash your ancient PC.



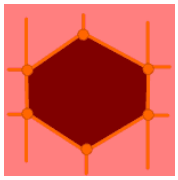
Quadrilaterals

These you'd actually have to watch out for. If you like using them so much, you'd have to make sure to convert all of them to triangles and weld some vertexes together to optimize your mesh in the end.



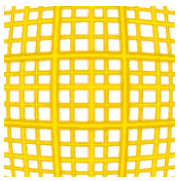
Triangles

Well yea, you gotta use these to get some really optimized geometry.



Holes

This stuff will also crash your ancient PC, no way.

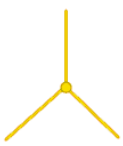


Dense / High Polycount Areas

Never. You'd be considered insane doing this.

5-or-more-edged Vertexes

Vertexes that are surrounded by (defined one end of) five edges were considered commonplace. These allowed nice triangle-count reductions.



3-edged Vertexes

These were deemed necessary in most cases, sometimes also for optimization purposes.

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