
Subject: Re: point inside polygon

Posted by [manizade](#) on Wed, 01 Apr 1998 08:00:00 GMT

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>> In article C0684CDB@oma.be, Philippe Peeters <philp@oma.be> writes:

>>> Does anybody knows of an IDL function to test whether a given point is

>>> inside a polygon?

The proposed polyfill approaches are limited by the resolution of the bitmap used.

In general, you can decompose any polygon into a set of triangles (using TRIANGULATE), then determine whether the point is included in any of the triangular regions.

TRIANGULATE gives each vertex list in counterclockwise order, so a point is inside the triangle if it is to the left of each directed edge of the triangle.

Suppose you have a directed line from point L1 to point L2, where the the x coordinate of L1 is L1[0] and the y coordinate is L1[1]; L2[0], L2[1] are the (x,y) coords of L2; and px,py are the coordinates of the point in question.

Then the boolean answer to whether the point is to the left of the line is given by

$(L1(1)-L2(1))*(L1(0)-px) \text{ LE } (L1(0)-L2(0))*(L1(1)-py)$

I have not seen an approach to this problem other than what I invented (and I'm sure I am not the only one to (re)invent it). Any other solutions out there?

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