

An Iterative Algorithm for Determining the Arc Length of a High Order Flat Bezier Curve

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Abstract

Quantifying the spatial characteristics of information stored and disseminated electronically is a complex computational challenge. Flat vector objects such as symbols, tracks, routes, etc. are described using the mathematical apparatus of Bezier curves. Finding the perimeters of such objects, especially in the case of curves of order higher than the third, is associated with certain difficulties. Reducing the order of curves by dividing or splitting them into sub-curves of lower orders, accompanied by some decrease in the accuracy of the estimate, is a convenient method for fast calculating the perimeters of plane figures described by Bezier curves. In this work, we propose an iterative algorithm for determining the arc length of a Bezier curve, which compares different criteria for splitting a curve into sub-curves.

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