

Abstract

GRAPHICS SYSTEM USING QUADRATIC POLYNOMIAL FRAGMENTS

Disclosed is an object based graphics system wherein each object is divided into a plurality of curve fragments described by a quadratic polynomial. For each fragment the corresponding polynomial is defined by a START_PIXEL location, a ΔPIXEL value, a ΔΔPIXEL value, a START_LINE, and an END_LINE wherein the pixel location of said curve fragment on any line_(n) of the displayed image is given by:

$$\text{PIXEL}(\text{line}_{n+1}) = \text{PIXEL}(\text{line}_n) + \Delta\text{PIXEL}(\text{line}_n)$$

$$\Delta\text{PIXEL}(\text{line}_{n+1}) = \Delta\text{PIXEL}(\text{line}_n) + \Delta\Delta\text{PIXEL}$$

where

$$\text{PIXEL}(\text{line}_n = \text{START_LINE}) = \text{START_PIXEL}; \text{ and}$$

$$\Delta\text{PIXEL}(\text{line}_n = \text{START_LINE}) = \Delta\text{PIXEL}.$$

Such a method of describing graphic objects permits high speed object processing sufficient to allow for the generation of images at real-time data rates for raster displays with present consumer-priced technology.

This Sheet Has Been Replaced

