

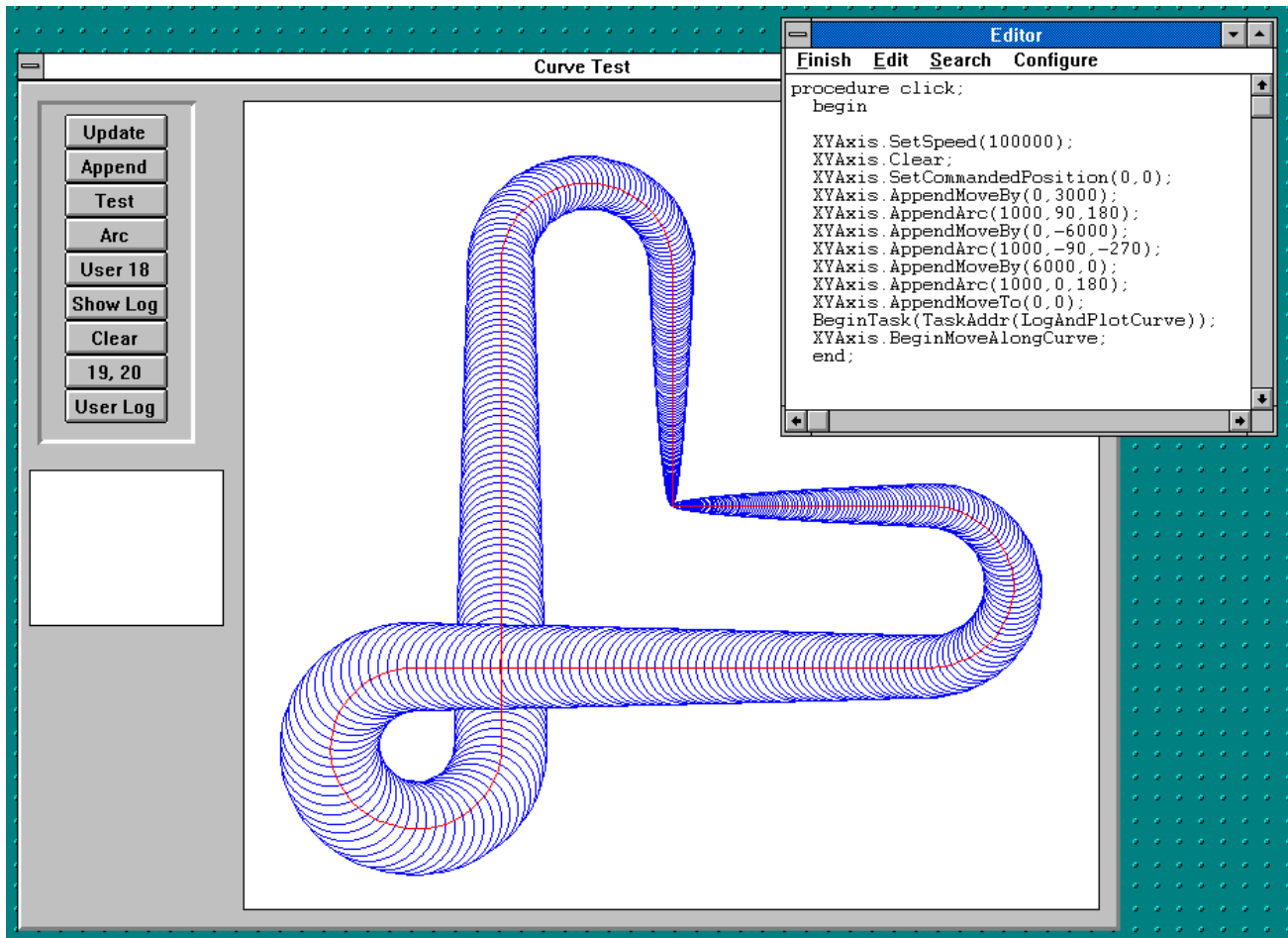
2D Circular Interpolation

Summary

Motion Server allows arcs as well as line segments in continuous path descriptions. These arcs are performed at the constant vector speed.

Example

The figure shown was used during testing of the 2D curve procedures. The graph shows a continuous 2D path composed of both linear and arc segment. The window to the upper right shows the commands that made the path. The graph is composed of circles. The center of the circle is the position of the XYAxis and the radius of the circle is the speed. When the "tube" gets small, this means that the XYAxis was moving



slowly. When the tube is large, it is moving quickly. The move started in the center of the graph and first moves upward with the command `XYAxis.AppendMoveBy(0,3000);` The first arc is then requested by saying `XYAxis.AppendArc(1000,90,180)`. The first number is the radius, the second number is the initial direction, in degrees, and the third number is the change in direction, in degrees. The angular numbers are SINGLE types and can use decimal points for additional precision. The first arc begins heading upward, at angle 90, and then changes direction by 180 degrees in the counter-clockwise direction. Angles are measure in the classical sense with the +XAxis being 0 degrees, +YAxis being 90 degrees etc. The additional segments and arcs complete the picture. Initially the tube starts out small, and grows in diameter as the XYAxis accelerates, and reduces in size as it returns to the center at the end of the move.

Arcs can be placed on other planes besides the XY plane by sending commands to an XZAxis or YZAxis object which can be declared and initialized at the application level.