

Algorithm: Line Clipping Using Rectangular Window

Step 1: Input the coordinates of the rectangular clipping window

xmin, ymin, xmax, ymax

Step 2: Input the coordinates of the line endpoints

P1(x1, y1) and P2(x2, y2)

Step 3: Compare the position of both endpoints with the clipping window boundaries.

Step 4: If both endpoints lie completely inside the clipping window

($x_{\min} \leq x \leq x_{\max}$ and $y_{\min} \leq y \leq y_{\max}$),

then accept the line and draw it as a solid line.

Step 5: If both endpoints lie completely outside the clipping window on the same side,

then reject the line and draw it as a dotted line.

Step 6: If one endpoint lies inside the clipping window and the other lies outside,

then the line is partially visible.

Compute the intersection point with the clipping window boundary.

Draw the inside portion as a solid line and the outside portion as a dotted line.

Step 7: If both endpoints lie outside the clipping window but the line intersects the window at

two points,

compute both intersection points.

Draw the portion of the line inside the window as a solid line and the remaining portions as

dotted lines.

Step 8: Display the clipping window along with the accepted and rejected portions of the line.

Step 9: Stop.