

Computer graphics- clipping

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clipping

Point clipping

Line clipping

Text clipping

CLIPPING

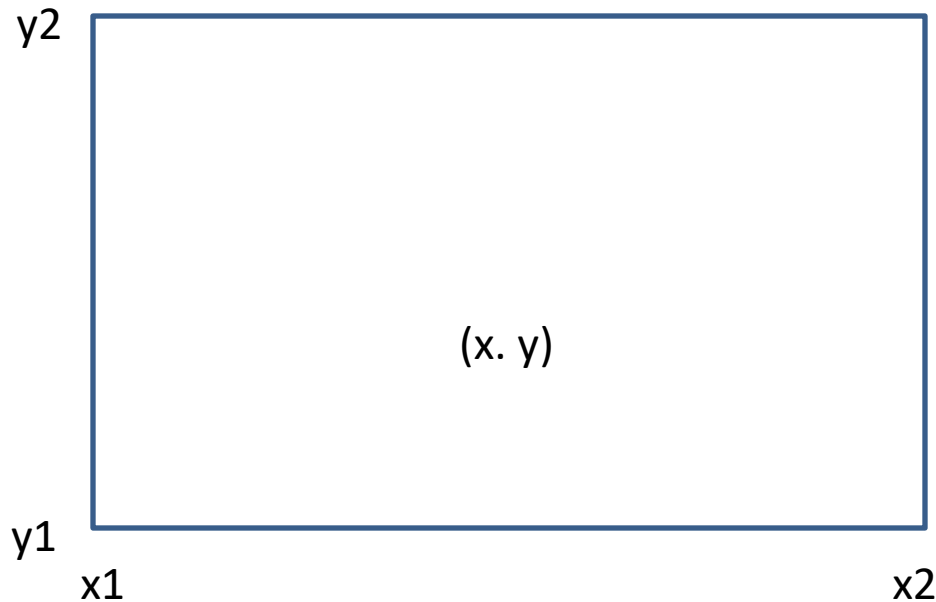
To remove objects, lines or line segments that are outside the viewing window

Types of clipping

- Point clipping
- Line clipping
- Polygon clipping
- Text clipping

Point clipping

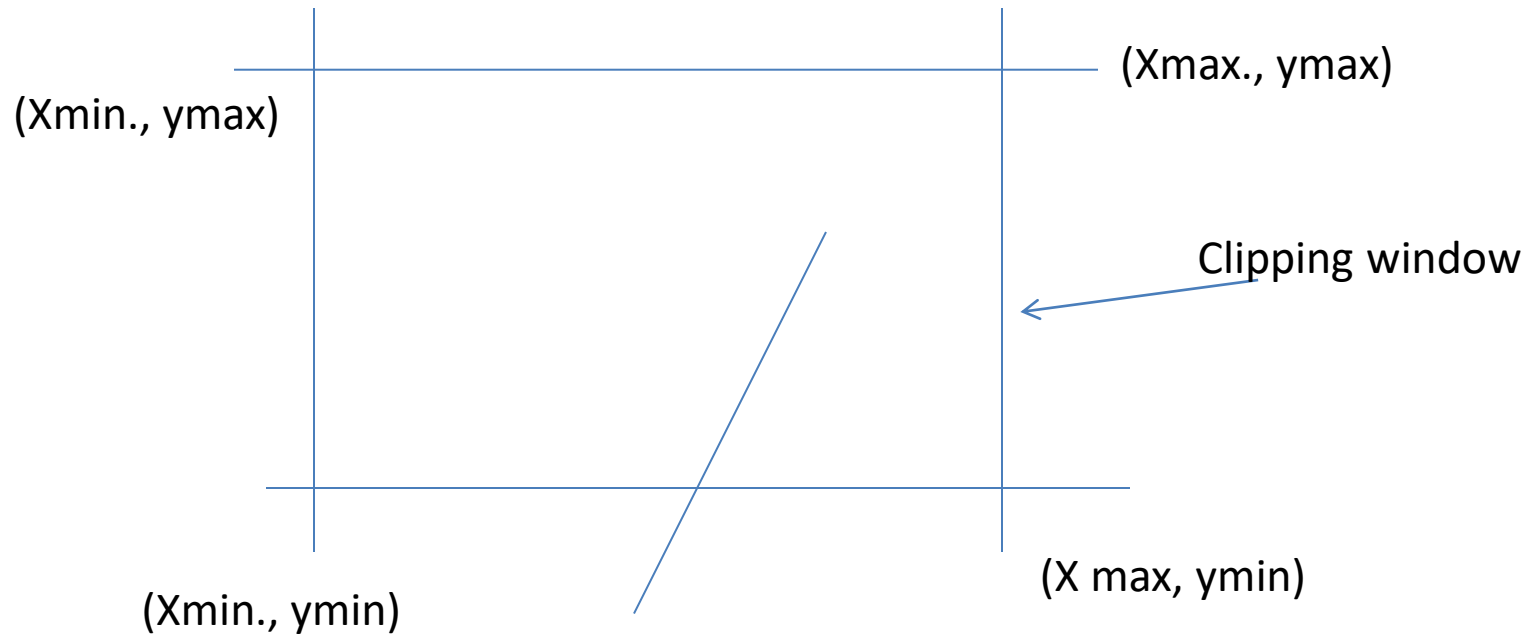
Use clipping window



X coordinate of the point lies in the window if $x1 < x < x2$ and y coordinate of the point lies in the window if $y1 < y < y2$

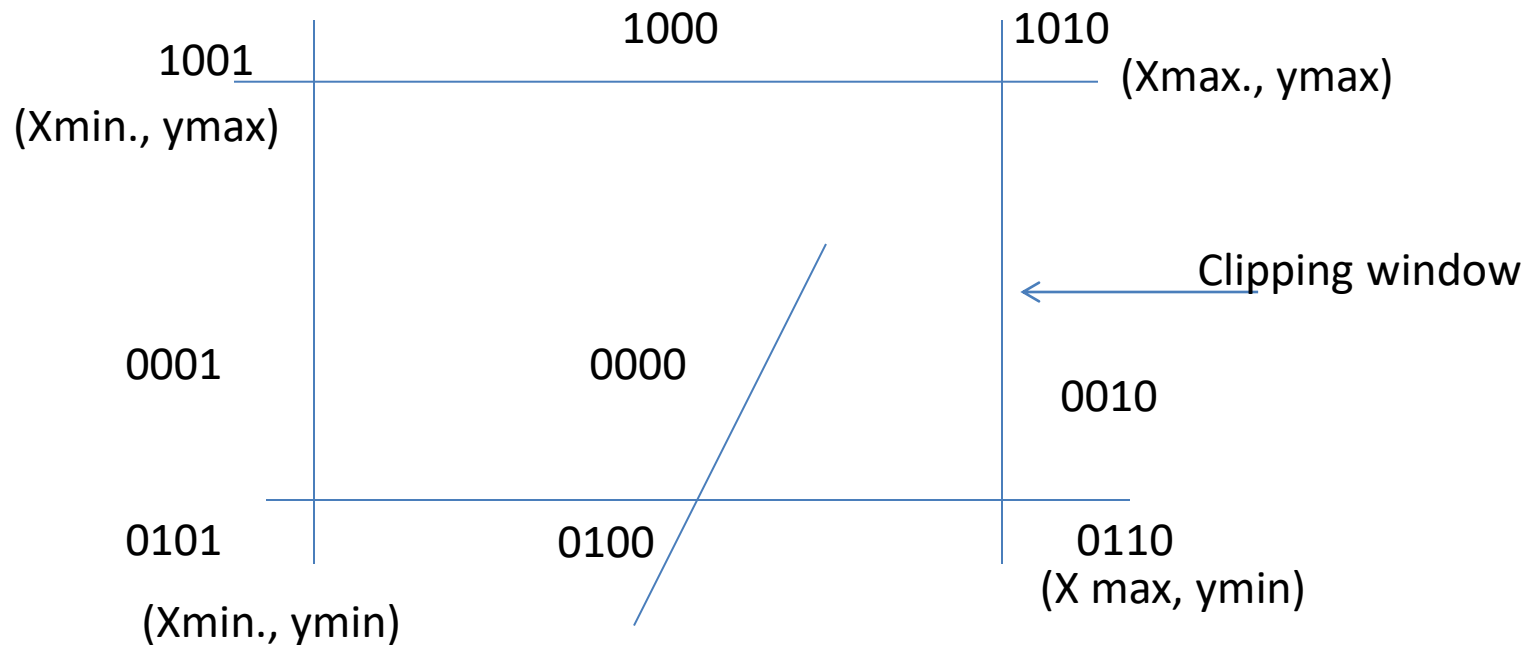
Line clipping

Cohen-sutherland line clipping



Line clipping

Use 4 bits to assign codes to each of the nine regions



Line Clipping

Line possibilities:

- whole line is in the window

- whole line is outside the window

- part of line is outside the window

Line Clipping algorithm

Assign a code for each region

Repeat until no more line

 If both end points have region code 0000
 accept line

 Else

 Perform logical AND test for both region codes

 if result on region is not 0000

 reject line

 choose the end point that is outside the window

 Find the intersection point at the window boundary based on region code

 replace end point with boundary point and update region code

text clipping

Methods

all or none string clipping

Either accept the entire string or reject it based on the clipping window

All or none character clipping

if the string is entirely inside the clipping window accept it

if it is partially outside the window reject the portion that is outside even if it is a character

Text clipping