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			Sutherland line clipping
	alsovilhm	with	10 (100) (C.
Re	source Requir	d - Tuxbo C	Printer, Printout
		April 100	will bridge the - 1126) 1 8-
Thy	ory ->		
Lin	apping	is a comput	tex graphics techniques
USE	to del	termine which	h portions of a line
reg	ment are	within q	given rectangular boundary
une	wn as	clipping wir	down and to discard
the	portions	that are	outside . It's commonly
Use	1 m 20	graphics a	pplications, such as mende
11:0	blo only	of an	efficiently draw only t
N IS	ole bard a	b)	OBJECT
1 100	719 WE 200	CALLS IT IN	military canal magnification
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Shine	radio d	The standard	Alsopithm.
Signe 3 72 295		1 20202221 20202221	Algorithm.
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Control of the Contro
There are several algorithms for line clipping
There are several algorithms to
the most commonly used being -> 1) Cohen - Sutherland Algorithm 2) Line Sutherland Classithm
1) Cohen - Sutherland Alsonithm
2) Liany - Kersly HISOTERIA
3) Cyrus - Beck Algorithm.
AND THE PROPERTY OF THE PARTY O
Cohen - Sutherland Algorithm
2 1 - 21
This algorithm is an efficient line Clipping algorithm
littled to alio a line coment to a opening
Ilclindica winder. The 2D line dipping agoston
The main adulantage of the algorithm is that
Ill would be manufer of line mitter
Ill & would be calculated in scan conversion
approach. It operates in two projes-> (1) region cone
- MEREAGOIDE
Gi) Clipping.
1) Region (ode generation -> It divides the plane into
sections. Old of which one region a is
I ha unindous and the great of 19108) we
around it is given by 4 digit binary outcode
(region coole). It determines visible postlon of the
line using outcombe (region code) of the
line Using outland
endpoints of line.
Outcode -> A 4-bit code that represent the
location of a point relative to the
clipping window.

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	(160)	in a package !
The month and the same	1000	1010
_(00)	(Window)	一一加州东水供一
(Left) 0001	0000	0010 (Risht)
0101	0100	6110
0101	(Bottom)	D 20
	(Dollon)	
completely visible axished to the	e. A region endpoints of	this region are code is always the siven line.
Formula to chec	u nutrode -> -	TRRL which can be kined as top, bottom
risht, left a	mordingly.	at onit
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Chapter December	- The algor	rithm quickly identifi
Clipping Pooceans	10 11 1	ing is Amuniciple
7.0	If the I	ine is completely
or outside. If 1	both the end	points having same
autorits it 0000	then the	line 15 completed
haids the code	o and other	than 0000 outcode
Indios Arc Con	AAl-1-01-	autoido No cado
the line is	Compressed	outside the code.
If both end pol	nts are how	ring different outlod
then by perform	ing losial	14 Loved loss all

PAGE NO.: __ SARASWATI Education Society's SARASWATI College of Engineering DATE: acceptance, respection or partial visibility of line. Algorithm -Step 1 :> Read (Xwmin, Ywmin) and (Xwmax, Ywmax) for a clipping window. Step 2 > Compute outrodes for both end Posets Using Resign roots. Step 3 -> If outcode A ADR outcode R == 0000 then line is completely inside the goto the Gipping window and can be accepted Then goto step 5 Else -> Line is partially inside completely in Ochside or partially inside if outcode of both end Points bitwise AND operation is non-zero. Step 4 -> If the line cannot be accepted or rejected. it meany the line is partially invide the clipping window compute interrecting points. i.e, For y-coordinate calculation as, Y= mx+c C= Y-my Lhen, y= mymin +C -> Interrecting to loft edge y = m xmax + C -> Intercerting to sight above.

Ī	ARASWATI Education Society's PAGE NO.:
	For X-coordinates (alculation as, X = (Y-c); (=y-mx)
	X = Ymin-c -> Intercerting to bottom edge.
	X = \frac{1}{m} = \frac{1}{m} \tag{10} = \fra
	Advantager
	It is easy to understand
	Simple to implement
l	Out out in I is a fill broade on extend
	Rest suitable for the lines fully buside or outside. It can be easily be extended for 3.D line clippin
	It can be easily be extended for 3D line clipping Disadvantages ->
	It can be easily be extended for 3D line clipping. Disadvantages -> Repeted clipping is expensive.
	It can be painty be extended for 3D line clipping. Disadvantages -> Repeted clipping is expensive. Only applicable to rectangular clipping window.
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	It can be easily be extended for 3D line clipping Disadvantages -> Repeted clipping is expensive. Only cupplicable to rectangular clipping window. It cannot handle any other shape. It can be improved using more regions. Conclusion -> We have successfully implemented (ohen Sutterland algorithm for the