Name- & Sumit Rawal RON NO. - 11211 49 Subject - Computer Graphics Course - BCA (6 m Sem) Section - C SET - C OE) write an Algorithm and Program to implement Breshenham line Drawing Algorithm. Sol: Bresenham's line Algorithm Step 1: Start Algorithm step 2: Declare Variable $x_1, x_2, y_1, y_2, d, l_1, i_2, dx$ Step 3: Enter value of x, y, , oc, , 4, where I, y, are coordinates of starting plint and X2, 42 are coordinates of Ending point step 4: Calculate $dx = x_2 - x$, Calculate dy = 42-4, calculate i, = 2 * dy

calculate $i_1 = 2 * dy$ Calculate $i_2 = 2 * (dy - dx)$ Calculate $d = i_1 - dx$ Step 5: Consider (x, y) as starting point and x_{end}

Step 5. Consider Coty of which is as maximum possible value of x.

if $d \times c = x_2$ then $x = x_2$ $y = y_2$ $x = x_2$ $x = x_2$

if dx > 6then x = x, y = y, $x = x_2$

Symil

```
Step 6: Generate point at (x, y) Goordinates.
          Step 7: check it whole line is generated
                                  if x > = x end
                                   80p.
       Step 8: Calculate CO-Ordinates of next pixel
                          is d < 0
                                    then d = d + i_2
                              i \neq d \geq 0
                     then d = d + 12
                        increment & = X+1
  Step 9: increment x=x+1
Step 10: Draw a point of latest (x,7) logidinates
step 11: Go to Step 7
 Step 12: End of Algorithm
                                               to implement Bresenham's line Algoritme
         Program
        # include < stdio. h>
                                                                                                              ... 600, and 11
            # include & graphics. h>
          void drawline (int xo, int yo, int x, , int y,)
                  int dx, dy, P, x, y;
                                                                                                                            an of said it
                                                                                                                      apolitica and provide a standard of the
                  doc = x1-x0;
                dy = 4, -40;
                                                                                                                remaining the state of the state of the
                    x = x_0;
                                                                                                                                            The state of the s
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y = y 0;

P = 2 * dy-dx;

```
white ( & < x1)
               it (P >=0)
                       Putpixel (x, y, 7);
                        y = y+1;
                        P = P + 2 * dy -2 * dx;
               else
                                                          and the state of t
                       Putpixel (x, y, 7);
                  P = P + 2 * cy; 3
                      x = * + 1;
                  3
   int main ()
     int gariver = DETECT, gmode, error, xo, yo, xcz, 72;
i nitgraph C& gdriver, & gmode, "C: \\ two c3 \bg;")
     Print f ("enter co-ordinates as birst point");
  Scan f ("-10d 1/0d", & xo, & yo);
     Print of ("Enter Co-ordinates up second point");
       Stanf (" % d % d", & x 1, & y 1);
    drawline (xo, yo, x1, y1);
         Teturn
```



100 Enter co-ordinates of second point: 200

Enter co-ordinates of second point: 200 200 Roll No. - 1121119

Sulfect - Computer Crotaphics

Course - BCA (6th Sem)

Section: C

2: write An algorithm & program to implem

O2: write An algorithm & program to implement midpoint and Drawing algorithm.

Sol: mid-point Circle Algarithm

Step 1: Cret radius and Goordinates from user.

Step 2: Find out the decision parameter that decides

the nearest point to select using:

d = 5/4-8

Step 3: while y is greater than x do

y = y x = x + 1 d = 2x + 1

e else

y = y - 1 x = x + 1

d = d+2 x-2y + Z

Step 4: Determine and plot the symmetry points for all eight coclants.

step 5: Repeat step 3 & step 4, mill y>X

Somis

Program draw-a linde circle Hinclude (Conio.h) #include < graphics on> void main () int x, y, & mid, ymid, 8,d; int gemode, gedriver = DETECT; down (); init graph (& gedriver, & gemode, "C: \TURBOC3\\ BGT ["); Paint & 6" MID Point Prawing adjosithm (n (n"). Print & C" \ enter the wordinates "); Scanf ("%od %od", & x-mid, & y-mid); Print f("In now enter radius ="); Scan f ("" fod", 28) CIRCLES SO CONDITIONS OF BUT DIES y = r; The same of the property of the same d=1-2: do of the profit of the 241 S. 181 Putpixel CX mid + x, y mid + y, 1); A1 - 971 (6) putpixel (x mid + y, y mid + x, 1); BUT STRUCKET STATE STATE putpixed (x-mid - y, y-mid +x, 1); Vill / Margar In putpixel Cx-mid - x, y-mid +y, 1); putpixel (x-mid -x, y-mid -y, 1) purpixel Cx-mid - y, y-mid-x, 1); putpixel (x-midty, y-mid-x, 1); Putpiscel Coc-mid +>c, y-mid-J, 1); is (d<0) MARINE MARINE MARINE (1) world a - action will be Ed = (2 * x)+1; Supir

Jains

else y=y-1; d + (2* 2)-(2* 4)+1; 1 (21) / 14 (6 d - 14) 14 $\infty = x + 1$; in the control of the control of the control of the and the state of the state of the state of while (y >x); in the contract of the state of great ch (); man and the state of the state of 3 The same of the sa the first of the first of the first of the first of the and it there was the extrans on himself The state of the s the first in the second of the state of the and the second of the property of the second " Commercial of the state of th The state of the s in the second of the second of the second And the first the first the same of the first and the training the state of t

NeuTroN DOS-C++ 0.77, Cpu speed: max 100% cycles, Frameskip 0, Program:

Enter radius of circle: 100 Enter co-ordinates of center(x and y): 150 150

