Paras Rawat Sub - Computer Graphics with C
BCA 6th Sem sub Code - PBC - 602
1121097 - (16)
Q-~~3~~ B (3) - Bresenham Circle ~~[illegible]~~ Programme -

```
#include < graphic.h>
#include <stdlib.h>
#include <stdio.h>
#include <conio.h>
#include <math.h>

Void Eight way (int xc, int yc, int x, int y)
{
put pixel (x+xc, y+ yc, RED);
  "      (x+xc, -y+yc , YELLOW);
  "      (-x+xc, -y+yc , GREEN);
  "      (-x+ xc, y+yc , YELLOW);
  "      (y+ xc, x+yc , 12);
  "      (y+xc, -x +yc, 14);
  "      (-y+ xc, -x +yc, 15);
  "      ( -y+ xc, x+yc, 6);

}
 Void Bresenham Circlee ( int xc, int yc, int r)
 { int x=0, y=r, d = 3(2*r);
   Eightway (xc, yc, x, y);
 while (x<=y)
 { if (d<=0)
      {
```

```
d= d+(4*x)+6;
}
else
{
d= d+ (4*x)-(4*y)+10;
y=y-1;
}
x=x+1;
EightWay(xc,yc,x,y);
}
}
int main (void)
{
  int xc,yc,r gdrive = DETECT, gmode, errorcode;
initgrap (&gdriver, &gmode, "C:\\TURBOC3\\BGI");
errorcode = graphresult ();
if (errorcode != grOK)
 {
   printf("Graphics error %s\n", grapherromsg(errorcode));
   printf("Press any key to halt:");
   getch();
   exit(1);
 }
```

```
printf("Enter the value of xc and yc :");
Scanf("%d %d", &xc, &yc);
printf("Enter the value of radius :");
Scanf("%d", &r);
Bresenham Circrcle(xc, yc, r);

getch();
Closegraph();
return 0;
}
```

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Sub- Computer Graphics with C
Sub-Code - TBC - 602

Q3(ii) Bresenham's Circle Algorithm:

Step 1: Start Algorithm

Step 2: Declare p, q, x, y, r, d variables p, q are coordinates of the center of the circle r is the radius of the circle.

Step 3: Enter the value of r

Step 4: Calculated $d = 3 - 2r$

Step 5: Initialize $x = 0$ & nbsy = r

Step 6: Check if the whole circle is scan converted

    If $x >= y$
    Stop

Step 7: Plot eight point by using concepts of eight way symmetry. The center is at (p, q) Current active pixel is (x, y);

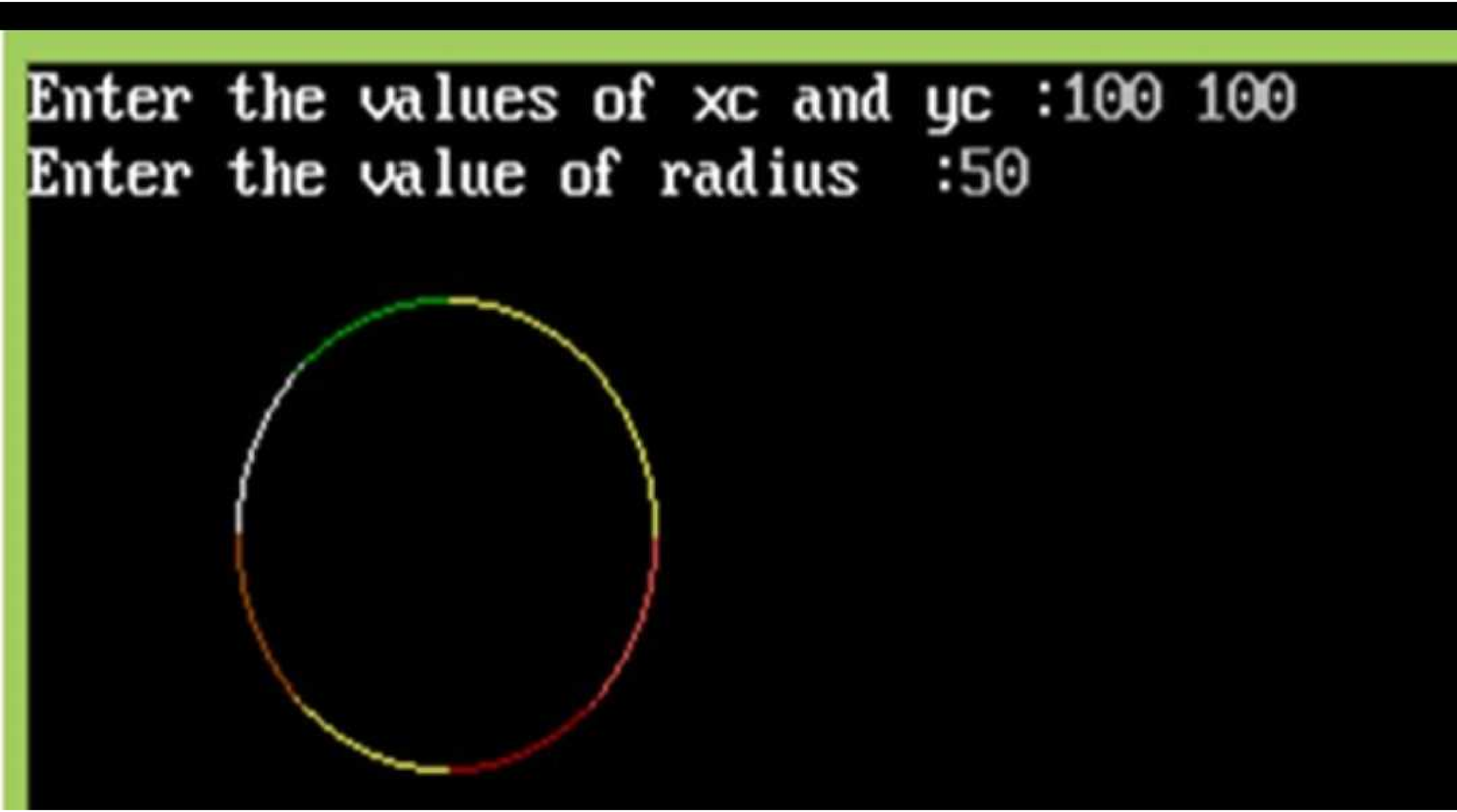
```
Putpixel (x+p, y+q)
   "     (y+p, x+q)
   "     (-y+p, x+q)
   "     (-x+p, y+q)
   "     (-x+p, -y+q)
   "     (-y+p, -x+q)
   "     (y+p, -x+q)
   "     (x+p, -y-q)
```

Step 8: find location of next pixels to be scanned

    If $d < 0$

```
    then $d = d + 4x + 6$
    indcrement $x = x + 1$
    If $d \geq 0$
    then $d = d + 4(x - y) + 10$
    ~~int~~ · increment $x = x + 1$
        decremend $y = y - 1$
Step 9 -> Go to step 6

Step 10: Stop Alogrithm
```



```
Enter the values of xc and yc :100 100
Enter the value of radius  :50
```