MIDPOINT ELLIPSE DRWING ALGORITHM IN C

1. #include<stdio.h>
2. #include<conio.h>
3. #include<graphics.h> 4.

**5. void ellipse1(int xc,int yc,int rx,int ry)**

6. {

1. int gm=DETECT,gd;
2. int x, y, p;
3. clrscr();
4. initgraph(&gm,&gd,"C:\\TURBOC3\\BGI"); 11. x=0;

12. y=ry;

13. p=(ry\*ry)-(rx\*rx\*ry)+((rx\*rx)/4);

14. while((2\*x\*ry\*ry)<(2\*y\*rx\*rx))

15. {

1. putpixel(xc+x,yc-y,WHITE);
2. putpixel(xc-x,yc+y,WHITE);
3. putpixel(xc+x,yc+y,WHITE);
4. putpixel(xc-x,yc-y,WHITE); 20.

21. if(p<0)

22. {

23. x=x+1;

24. p=p+(2\*ry\*ry\*x)+(ry\*ry);

25. }

26. else

27. {

28. x=x+1;

29. y=y-1;

30. p=p+(2\*ry\*ry\*x+ry\*ry)-(2\*rx\*rx\*y);

31. }

32. }

33. p=((float)x+0.5)\*((float)x+0.5)\*ry\*ry+(y-1)\*(y-1)\*rx\*rx-rx\*rx\*ry\*ry; 34.

35. while(y>=0)

36. {

1. putpixel(xc+x,yc-y,WHITE);
2. putpixel(xc-x,yc+y,WHITE);
3. putpixel(xc+x,yc+y,WHITE);
4. putpixel(xc-x,yc-y,WHITE); 41.

42. if(p>0)

|  |  |  |
| --- | --- | --- |
| 43. |  | { |
| 44. |  | y=y-1; |
| 45. |  | p=p-(2\*rx\*rx\*y)+(rx\*rx); |
| 46. |  |  |
| 47. |  | } |
| 48. |  | else |
| 49. |  | { |
| 50. |  | y=y-1; |
| 51. |  | x=x+1; |
| 52. |  | p=p+(2\*ry\*ry\*x)-(2\*rx\*rx\*y)-(rx\*rx); |
| 53. |  | } |
| 54. |  | } |
| 55. |  | getch(); |
| 56. |  | closegraph(); |
| 57. | } |  |
| 58. |  |  |
| **59.** | **void main()** | |
| 60. | { | |
| 61. | int xc,yc,rx,ry; | |
| 62. | clrscr(); | |
| 63. | printf("Enter Xc="); | |
| 64. | scanf("%d",&xc); | |
| 65. | printf("Enter Yc="); | |
| 66. | scanf("%d",&yc); | |
| 67. | printf("Enter Rx="); | |
| 68. | scanf("%d",&rx); | |
| 69. | printf("Enter Ry="); | |
| 70. | scanf("%d",&ry); | |
| 71. | ellipse1(xc,yc,rx,ry); | |
| 72. | getch(); | |
| 73. | } | |