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/** Program to Draw a Circle using Mid - Point Algorithm  ***/

#include <stdio.h>
#include <dos.h>
#include <graphics.h>

void circleMidpoint(int, int, int);
void drawCircle(int, int, int, int);

void main()
{
    int xc, yc, r;

    int gd = DETECT, gm;
    initgraph(&gd, &gm, "");

    printf("Enter center coordinates of circle: ");
    scanf("%d %d", &xc, &yc);
    printf("Enter radius of circle: ");
    scanf("%d", &r);

    circleMidpoint(xc, yc, r);

    getch();
}

void circleMidpoint(int xc, int yc, int r)
{
    int x = 0, y = r;
    int p = 1 - r;

    while (x < y)
    {
        drawCircle(xc, yc, x, y);
        x++;
    }
}
```

```
    if (p < 0)
        p = p + 2 * x + 1;
    else
    {
        y--;
        p = p + 2 * (x - y) + 1;
    }

    drawCircle(xc, yc, x, y);
    delay(50);
}
}
```

```
void drawCircle(int xc, int yc, int x, int y)
{
    putpixel(xc+x, yc+y, RED);
    putpixel(xc-x, yc+y, RED);
    putpixel(xc+x, yc-y, RED);
    putpixel(xc-x, yc-y, RED);
    putpixel(xc+y, yc+x, RED);
    putpixel(xc-y, yc+x, RED);
    putpixel(xc+y, yc-x, RED);
    putpixel(xc-y, yc-x, RED);
}
```