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#include<stdio.h>

#include<graphics.h>

int main()
{
    long x,y,x_center,y_center;

    long a_sqr,b_sqr,fx,fy,d,a,b,tmp1,tmp2;

    int g_driver=DETECT,g_mode;

    initgraph(&g_driver,&g_mode,"");
    printf("**MID POINT ELLIPSE*");
    printf("\n Enter coordinate x = ");
    scanf("%ld",&x_center);
    printf(" Enter coordinate y = ");
    scanf("%ld",&y_center);
    printf("\n Now Enter constants a =");
    scanf("%ld",&a,&b);
    printf(" Now Enter constants b =");
    scanf("%ld",&b);

    x=0;
    y=b;
    a_sqr=a*a;
    b_sqr=b*b;
    fx=2*b_sqr*x;
    fy=2*a_sqr*y;
    d=b_sqr-(a_sqr*b) + (a_sqr*0.25);
    do
    {
        putpixel(x_center+x,y_center+y,1);
        putpixel(x_center-x,y_center-y,1);
        putpixel(x_center+x,y_center-y,1);
        putpixel(x_center-x,y_center+y,1);
    }

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        if(d<0)
        {
            d=d+fx+b_sqr;
        }
        else
        {
            y=y-1;
            d=d+fx-fy+b_sqr;
            fy=fy-(2*a_sqr);
        }
        x=x+1;
        fx=fx+(2*b_sqr);
        delay(10);
    }
    while(fx<fy);
    tmp1=(x+0.5)*(x+0.5);
    tmp2=(y-1)*(y-1);
    d=b_sqr*tmp1+a_sqr*tmp2-(a_sqr*b_sqr);

    do
    {
        putpixel(x_center+x,y_center+y,1);
        putpixel(x_center-x,y_center-y,1);
        putpixel(x_center+x,y_center-y,1);
        putpixel(x_center-x,y_center+y,1);

        if(d>=0)
        d=d-fy+a_sqr;
        else
        {

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        x=x+1;

        d=d+fx-fy+a_sqr;

        fx=fx+(2*b_sqr);

    }

    y=y-1;

    fy=fy-(2*a_sqr);

}

while (y>0);

getch();

closegraph();

}

```

