function Y = nolineal(Img,Tam,Tipo)

I=imread(Img);

R=I(:,:,1);

ImgO=R;

figure('Name','Original','NumberTitle','off')

imshow(R);

[M,N]=size(ImgO);

ImgC=ImgO;

inc = (Tam-1)/2;

%Construir imagen copia con borde

for i=1:(M+(inc\*2))

    for j=1:(N+(inc\*2))

        if i>(inc) && i<=(M+inc) && j>(inc) && j<=(N+inc)

            ImgC(i,j)=ImgO((i-(inc)),(j-(inc)));

        else

            ImgC(i,j) = 0;

        end

    end

end

%Imagen resultante

ImgR=ImgO;

switch Tipo

    case 'm'

        for x=1+inc:M+inc

            for y = 1+inc:N+inc

                suma=255;

                for i=-inc:+inc

                    for j=-inc:+inc

                        valor=ImgC(x+i,y+j);

                        if(valor<suma)

                            suma=valor;

                        end

                    end

                end

                ImgR(x-inc,y-inc)=suma;

            end

        end

    case 'M'

        for x=1+inc:M+inc

            for y = 1+inc:N+inc

                suma=0;

                for i=-inc:+inc

                    for j=-inc:+inc

                        valor=ImgC(x+i,y+j);

                        if(valor>suma)

                            suma=valor;

                        end

                    end

                end

                ImgR(x-inc,y-inc)=suma;

            end

        end

    case 'med'

        for x=1+inc:M+inc

            for y = 1+inc:N+inc

                suma=zeros(1,Tam\*Tam);

                cont=1;

                for i=-inc:+inc

                    for j=-inc:+inc

                        valor=ImgC(x+i,y+j);

                        suma(1,cont)=valor;

                        cont=cont+1;

                    end

                end

                medio=median(suma(1,:));

                ImgR(x-inc,y-inc)=medio;

            end

        end

end

% figure('Name','Final','NumberTitle','off')

%imshow(ImgR);

Y=ImgR;

end