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E10

```
im = imread('n2538.tif');
imshow(im), title('imatge original');
ee= strel('disk',3);
dil=imdilate(im,ee);
ero=imerode(im,ee);
op=imopen(im,ee);
cl=imclose(im,ee);
figure, imshow(dil),title('dilatacio')
figure, imshow(ero),title('erosio')
figure, imshow(op),title('open')
figure, imshow(cl),title('close')

im=imread('Birds.tif');
imshow(im), title('imatge original');

ee=strel('square',3);
op=imopen(im,ee);
figure,imshow(op), title('open');

cl=imclose(im,ee);
figure,imshow(cl), title('open - close');

im= imread('danaus.tif');
imshow(im), title('imatge original');
ee=strel('disk',1);
dil=imdilate(im,ee);
ero=imerode(im,ee);
edge=imsubtract(dil,ero);
figure,imshow(edge), title('contorn doble');
im=imread('nshadow.tif');
imshow(im), title('imatge original');
ee=strel('disk',5);
op= imopen(im,ee);
figure,imshow(op), title('iluminacio');
th=imsubtract(im,op);
figure,imshow(th,[], title('top hat');
figure, imhist(im),title('imatge original')
figure, imhist(th),title('imatge filtrat')
```

imatge original



dilatacio

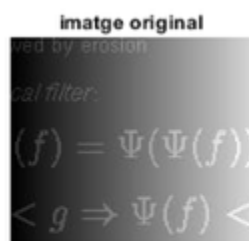
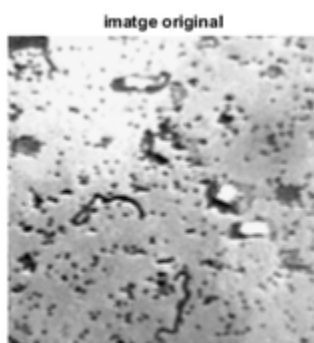
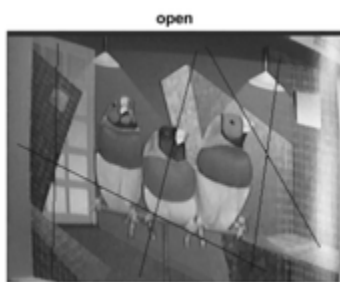
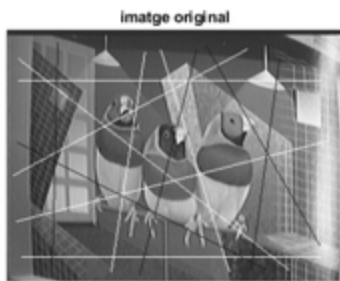


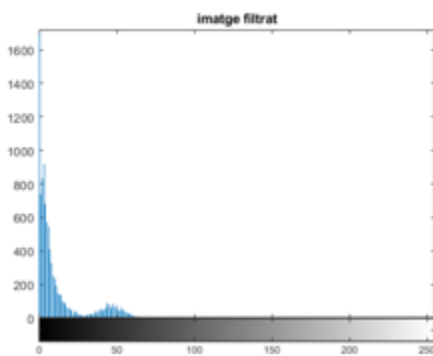
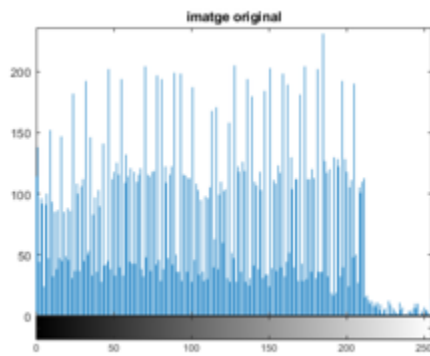
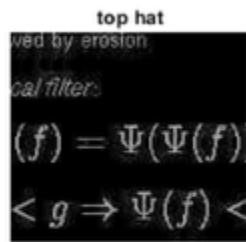
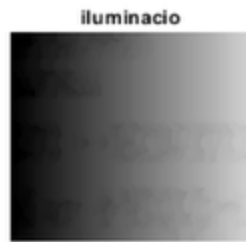
erosio



open







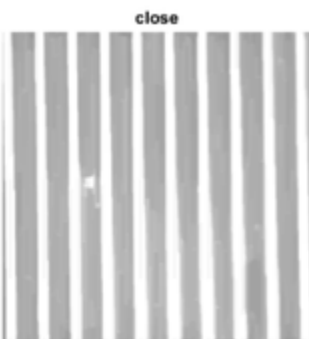
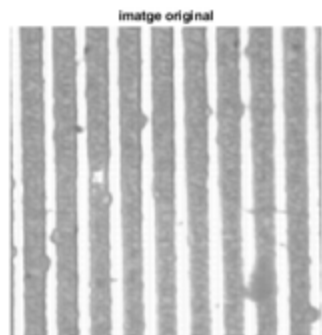
Exercici

```
im=imread('r4x2_256.tif');
imshow(im), title('imatge original');
ee=ones(35,3);
```

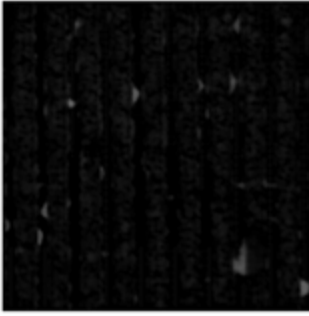
```
cl=imclose(im,ee);
figure,imshow(cl), title('close');
im=imsubtract(cl,im);
ee=strel('disk',1);
im=imopen(im,ee);
figure,imshow(im), title('desperfecto');
figure, imhist(im),title('imatge filtrat')

im = imread('bloodcells.tif');
imshow(im),title('imatge original');
mark=im;
mark(2:end-1,2:end-1) = 0;
rec = imreconstruct(mark,im);
figure,imshow(rec),title('imatge sense nucli');
nrec=imcomplement(rec);
figure,imshow(nrec),title('imatge negatiu');

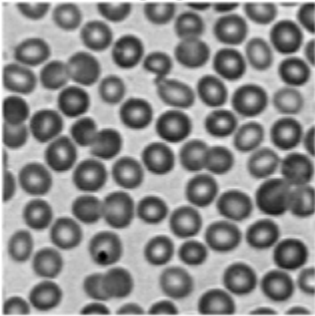
mark = nrec;
mark(2:end-1,2:end-1)=0;
rec2=imreconstruct(mark,nrec);
figure,imshow(rec2),title('celules a les vores');
res=imsubtract(nrec,rec2);
figure,imshow(res),title('imatge resultat');
```



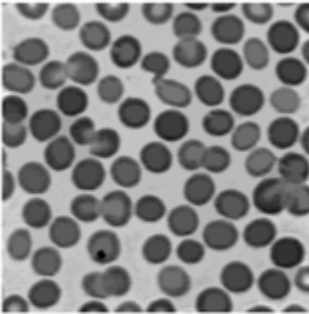
desperfecto



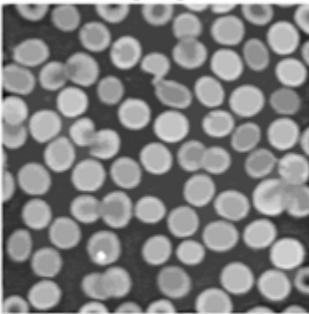
imatge original

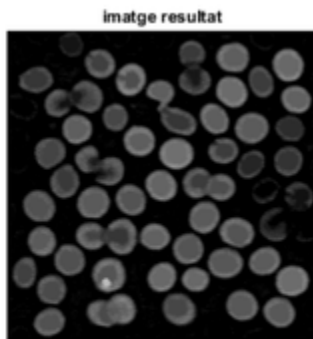
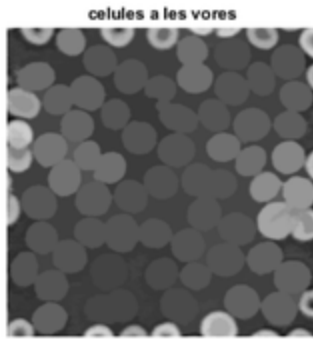


imatge sense nuclei



imatge negatiu





Maxim regional

```
im = imread('astablet.tif');  
figure, imshow(im), title('imatge original');  
  
rm=imregionalmax(im);  
figure, imshow(rm), title('maxims regionals');  
  
ee=strel('disk',20,0);  
op = imopen(im,ee);  
figure, imshow(op), title('imatge open');  
  
rm2=imregionalmax(op);  
figure, imshow(rm2), title('maxims regionals 2');
```

