

```
%1-(1)
im = imread('newborn.tif');
t_sp = imnoise(im,'salt & pepper',0.3);
figure,imshow(t_sp)
```



```
% 1-(2)
t_sp_a3= medfilt2(t_sp);
t_sp_a5= medfilt2(t_sp,[5,5]);
figure,imshow([t_sp_a3 t_sp_a5]);
```



```
%1-(3)
t_ga=imnoise(im,'gaussian',0,0.02);
figure, imshow(t_ga);
```

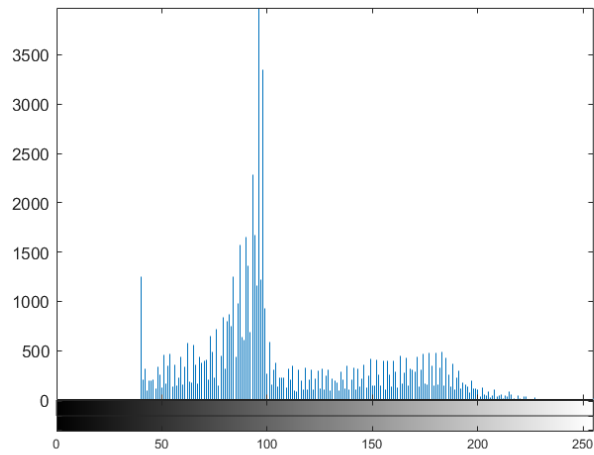


```
% 1- (4)
t1=wiener2(t_ga);
t2=wiener2(t_ga,[5,5]);
figure; imshow([t1 t2]);
```



2번

```
% 2-(1)
im = imread('rice.tif');
```



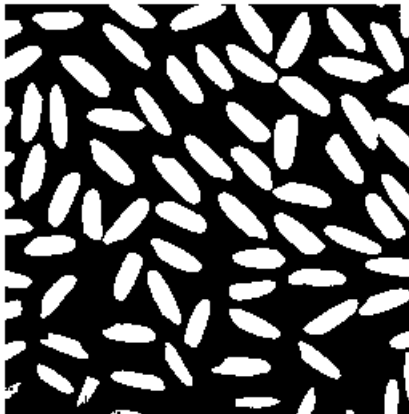
코드 ^

```
% axes 1
xlim([0 255])
ylim([0 3976])
% axes 2
xlim([0 255])
ylim([0.4 1.5])
```

코드 업데이트

복사

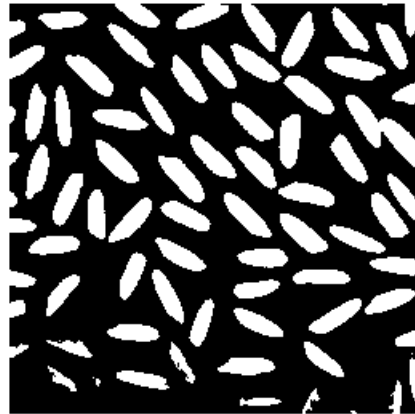
```
figure, imhist(im),axis tight;
figure; imshow(im>110);
```



```
% 2-(2)  
tr=graythresh(im)
```

```
tr = 0.4902
```

```
figure; imshow(im2bw(im,tr));
```

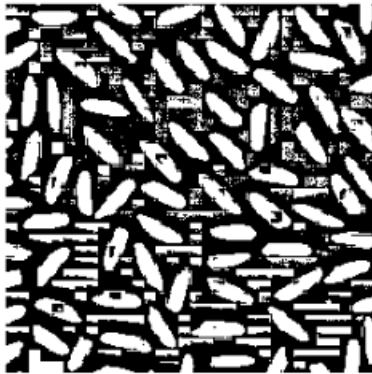


```
%2-3  
im = imread('rice.tif');  
fun= inline('im2bw(im,graythresh(im))');  
t8 = blkproc(im,[32,32],fun);  
figure, imshow(t8);
```



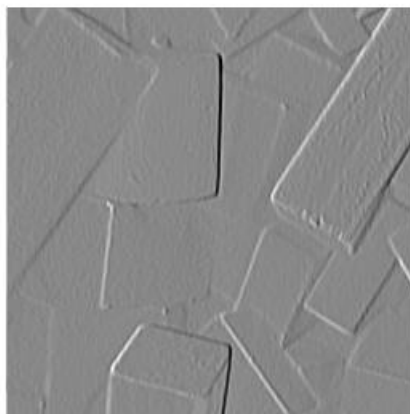
2-(4)

```
im = imread('rice.tif');  
fun = inline('im2bw(im,graythresh(im))');  
t32 = blkproc(im,[8,8],fun);  
figure,imshow(t32);
```

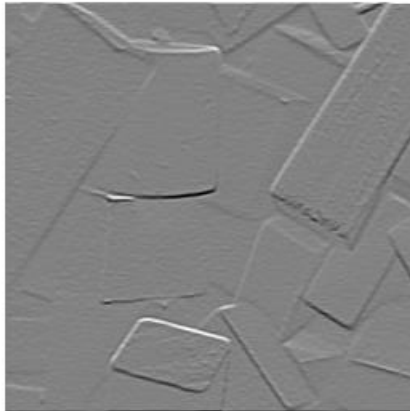


3번

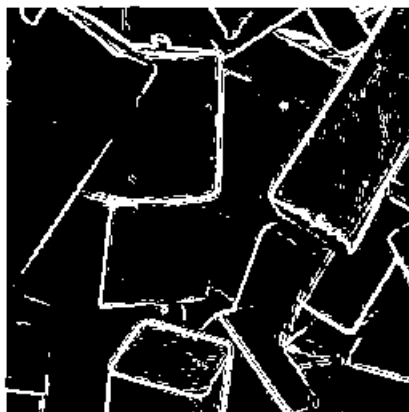
```
% 3- (1)  
im = imread('blocks.tif');  
px=[-1 0 1; -1 0 1; -1 0 1];  
icx=filter2(px,im);  
figure; imshow(icx,[]);
```



```
%3-(2)
py=px';
icy=filter2(py,im);
figure; imshow(icy,[])
```



```
%3-(3)
edge_p=sqrt(icx.^2+icy.^2);
edge_t=im2bw(edge_p/255, 0.3);
figure; imshow(edge_t)
```



```
% 3-(4)|
direction_of_edge = atan2(icy,icx);
figure,imshow([direction_of_edge edge_t.*(direction_of_edge)]);
```



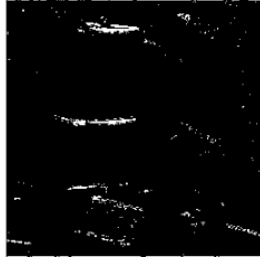
4번

```
im = imread('blocks.tif');
px = [ -1 0 1; -1 0 1; -1 0 1];
icx = filter2(px,im);
py = px';
icy = filter2(py,im);
edge_p = sqrt(icx.^2 + icy.^2);
edge_t = im2bw(edge_p / 255, 0.3);
edge_d = atan2(icy,icx);
```

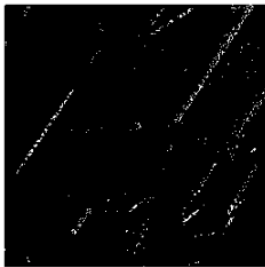
```
% 4-1
edge_phase_vertical = (edge_d >= -10*pi/180 & edge_d < 10*pi/180) | (edge_d == 170*pi/180) | (edge_d == 170*pi/180);
edge_vertical = edge_t.* edge_phase_vertical;
figure, imshow(edge_vertical, []);
```



```
% 4-2
edge_phase_supeong = (edge_d >= 80*pi/180 & edge_d <= 100*pi/180) | (edge_d >= -100*pi/180 & edge_d <= -80*pi/180);
edge_supeong = edge_t.*edge_phase_supeong;
figure ,imshow(edge_supeong,[])
```



```
% 4-3
edge_phase_diagol = (edge_d >= 35*pi/180 & edge_d <= 55*pi/180) | (edge_d >= -145*pi/180 & edge_d <= -125*pi/180);
edge_diagol = edge_t.*edge_phase_diagol;
figure ,imshow(edge_diagol,[]);
```



```
%4-4
edge_phase_diagol = (edge_d >= (125)*pi/180 & edge_d <= (145)*pi/180) | (edge_d >= (-55)*pi/180 & edge_d <= -35*pi/180);
edge_diagol = edge_t.*edge_phase_diagol;
figure ,imshow(edge_diagol,[]);
```

