

```
x=1:0.1:10
```

```
x = 1×91  
1.0000 1.1000 1.2000 1.3000 1.4000 1.5000 1.6000 1.7000 ...
```

```
y=1:0.1:10
```

```
y = 1×91  
1.0000 1.1000 1.2000 1.3000 1.4000 1.5000 1.6000 1.7000 ...
```

```
k=1
```

```
k = 1
```

```
s=0.5
```

```
s = 0.5000
```

```
k*exp(-(x.^2+y.^2)/(s.^2))
```

```
ans = 1×91  
10-3 x  
0.3355 0.0625 0.0099 0.0013 0.0002 0.0000 0.0000 0.0000 ...
```

```
a=zeros(5,5)
```

```
a = 5×5  
0 0 0 0 0  
0 0 0 0 0  
0 0 0 0 0  
0 0 0 0 0  
0 0 0 0 0
```

```
b=ones(5,5)
```

```
b = 5×5  
1 1 1 1 1  
1 1 1 1 1  
1 1 1 1 1  
1 1 1 1 1  
1 1 1 1 1
```

```
c=rand(5,5)
```

```
c = 5×5  
0.7424 0.7590 0.5970 0.4510 0.8270  
0.9374 0.9933 0.4306 0.6401 0.3081  
0.5134 0.3567 0.7307 0.1320 0.4024  
0.2409 0.7529 0.2612 0.4528 0.8842  
0.2600 0.1100 0.0948 0.6522 0.7006
```

```
d=rand(5,5)
```

```
d = 5×5  
0.2419 0.3747 0.9367 0.4896 0.0326  
0.7598 0.4369 0.8602 0.2698 0.3320  
0.2909 0.3043 0.3972 0.9897 0.7487  
0.2774 0.2909 0.4794 0.1837 0.6444  
0.0061 0.2425 0.5650 0.8617 0.1692
```

```
e=(a+10)*(b*0.5)
```

```
e = 5x5
    25    25    25    25    25
    25    25    25    25    25
    25    25    25    25    25
    25    25    25    25    25
    25    25    25    25    25
```

```
e(1,:)
```

```
ans = 1x5
    25    25    25    25    25
```

```
c(1,:)
```

```
ans = 1x5
    0.7424    0.7590    0.5970    0.4510    0.8270
```

```
c(1,end)
```

```
ans = 0.8270
```

```
size(a)
```

```
ans = 1x2
     5     5
```

```
sum(e)
```

```
ans = 1x5
   125   125   125   125   125
```

```
sum(sum(e))
```

```
ans = 625
```

```
[m1,m2]=find(max(c))
```

```
m1 = 1x5
     1     1     1     1     1
m2 = 1x5
     1     2     3     4     5
```

```
length(d)
```

```
ans = 5
```

```
whos
```

Name	Size	Bytes	Class	Attributes
a	5x5	200	double	
ans	1x1	8	double	
b	5x5	200	double	
c	5x5	200	double	
d	5x5	200	double	
d_comp	5x5	200	double	
d_das	5x5	200	double	
e	5x5	200	double	
f	256x256	524288	double	

image	256x256	65536	uint8
k	1x1	8	double
m1	1x5	40	double
m2	1x5	40	double
s	1x1	8	double
s_comp	256x256	65536	uint8
x	1x91	728	double
y	1x91	728	double

```
image=imread('cameraman.tif')
```

```
image = 256x256 uint8 matrix
156 159 158 155 158 156 159 158 157 158 158 159 160 ...
160 154 157 158 157 159 158 158 158 160 155 156 159
156 159 158 155 158 156 159 158 157 158 158 159 160
160 154 157 158 157 159 158 158 158 160 155 156 159
156 153 155 159 159 155 156 155 155 157 155 154 154
155 155 155 157 156 159 152 158 156 158 152 153 159
156 153 157 156 153 155 154 155 157 156 155 156 155
159 159 156 158 156 159 157 161 162 157 157 159 161
158 155 158 154 156 160 162 155 159 161 156 161 160
155 154 157 158 160 160 159 160 158 161 160 160 158
⋮
```

```
imshow(image)
```

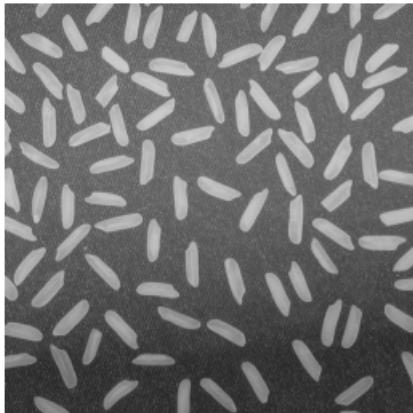


```
s=imread("rice.png");
imfinfo("rice.png")
```

```
ans = struct with fields:
    Filename: 'C:\Program Files\MATLAB\R2020b\toolbox\images\imdata\rice.png'
    FileModDate: '26-Jan-2003 11:33:06'
    FileSize: 44607
    Format: 'png'
    FormatVersion: []
    Width: 256
    Height: 256
    BitDepth: 8
    ColorType: 'grayscale'
    FormatSignature: [137 80 78 71 13 10 26 10]
    Colormap: []
```

```
    Histogram: []
    InterlaceType: 'none'
    Transparency: 'none'
SimpleTransparencyData: []
    BackgroundColor: []
    RenderingIntent: []
    Chromaticities: []
        Gamma: []
    XResolution: []
    YResolution: []
    ResolutionUnit: []
        XOffset: []
        YOffset: []
    OffsetUnit: []
SignificantBits: []
    ImageModTime: '27 Dec 2002 19:57:12 +0000'
        Title: []
        Author: []
    Description: 'Rice grains'
    Copyright: 'Copyright The MathWorks, Inc.'
    CreationTime: []
        Software: []
    Disclaimer: []
        Warning: []
        Source: []
        Comment: []
    OtherText: []
```

```
imshow(s)
```



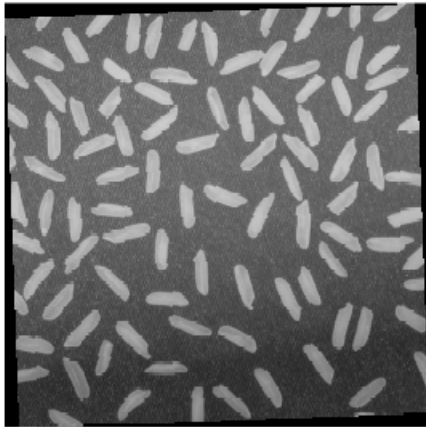
```
size(s)
```

```
ans = 1x2
      256   256
```

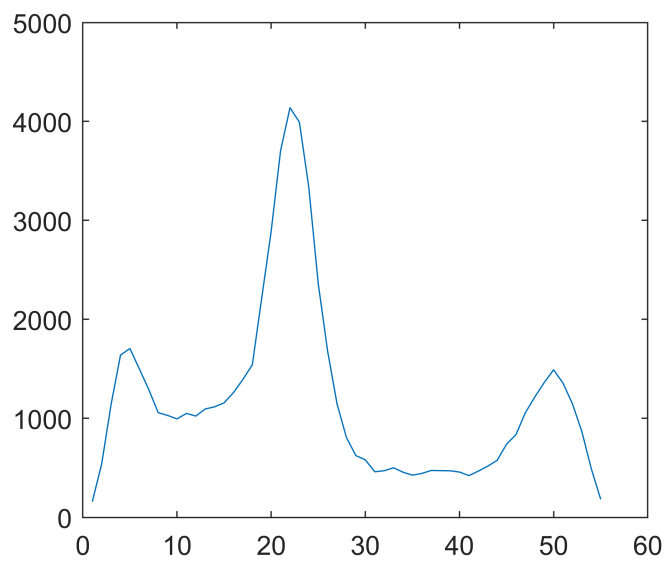
```
imcrop(s,[4,5,7,9])
```

■

```
imshow(imrotate(s,2))
```



```
plot(histcounts(s))
```

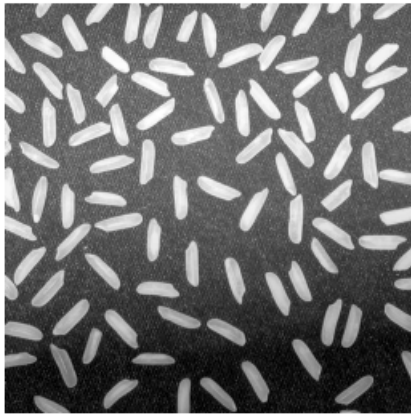


```
f=mat2gray(s)
```

f = 256×256

0.5000	0.3171	0.3354	0.3598	0.3780	0.4085	0.2988	0.3049 ...
0.3598	0.3598	0.3780	0.2561	0.3659	0.2988	0.3110	0.2866
0.3476	0.4085	0.3841	0.2805	0.3537	0.3171	0.3232	0.3415
0.3780	0.3659	0.3598	0.2866	0.3476	0.2988	0.4268	0.3354
0.2683	0.4085	0.3537	0.3598	0.3171	0.3293	0.3902	0.3110
0.2805	0.4085	0.3232	0.4085	0.3110	0.4207	0.3171	0.3963
0.3476	0.3902	0.3049	0.3232	0.3232	0.3415	0.2988	0.4939
0.3963	0.3780	0.4268	0.3476	0.3659	0.3232	0.2988	0.4024
0.4329	0.3476	0.3659	0.3354	0.4268	0.3537	0.3841	0.3963
0.3476	0.2927	0.4512	0.3232	0.3415	0.2866	0.3720	0.3293
⋮							

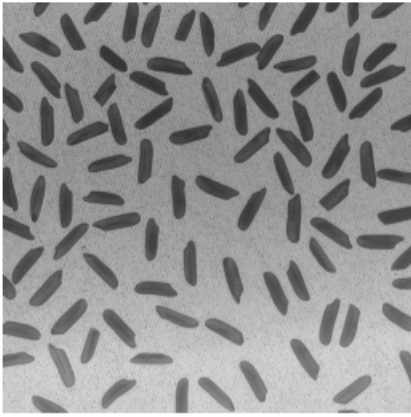
```
imshow(f)
```



```
s_comp=imcomplement(s)
```

```
s_comp = 256x256 uint8 matrix
133 163 160 156 153 148 166 165 160 145 164 159 174 ...
156 156 153 173 155 166 164 168 169 161 168 157 163
158 148 152 169 157 163 162 159 159 162 155 134 159
153 155 156 168 158 166 145 160 162 172 166 152 149
171 148 157 156 163 161 151 164 151 167 129 161 153
169 148 162 148 164 146 163 150 164 166 145 163 151
158 151 165 162 162 159 166 134 155 153 161 161 158
150 153 145 158 155 162 166 149 153 138 160 140 157
144 158 155 160 145 157 152 150 162 141 163 154 161
158 167 141 162 159 168 154 161 153 151 152 159 158
⋮
```

```
imshow(s_comp)
```



```
imadd(s_comp,4*ones(256,256))
```

Error using imadd (line 72)
X and Y must have the same size and class or Y must be a scalar double.