Images

**Functions**

**Display Image**

|  |  |
| --- | --- |
| imshow | Display image |
| image | Display image from array |
| imagesc | Display image with scaled colors |

**Read, Write, and Modify Image**

|  |  |
| --- | --- |
| imread | Read image from graphics file |
| imresize | Resize image |
| imtile | Combine multiple image frames into one rectangular tiled image |
| imwrite | Write image to graphics file |
| imfinfo | Information about graphics file |
| imformats | Manage image file format registry |

**Convert Image Type**

|  |  |
| --- | --- |
| frame2im | Return image data associated with movie frame |
| im2frame | Convert image to movie frame |
| im2java | Convert image to Java image |
| im2double | Convert image to double precision |
| ind2rgb | Convert indexed image to RGB image |
| rgb2gray | Convert RGB image or colormap to grayscale |
| rgb2ind | Convert RGB image to indexed image |

**Modify Image Colors**

|  |  |
| --- | --- |
| imapprox | Approximate indexed image by reducing number of colors |
| dither | Convert image, increasing apparent color resolution by dithering |
| cmpermute | Rearrange colors in colormap |
| cmunique | Eliminate duplicate colors in colormap; convert grayscale or truecolor image to indexed image |

Show Image

Display a grayscale, RGB (truecolor), indexed or binary image using imshow. MATLAB® includes a TIF file, named corn.tif, that contains three images: a grayscale image, an indexed image, and an RGB image. This example creates a binary image from the grayscale image.

**Display a Grayscale Image**

Read the grayscale image from the corn.tif file into the MATLAB workspace. The grayscale version of the image is the third image in the file.

corn\_gray = imread('corn.tif',3);

Display the grayscale image using imshow.

imshow(corn\_gray)

Convert to byte

load trees

BW = im2bw(X,map,0.4);

imshow(X,map), figure, imshow(BW)

Change Color

Load an indexed image of a mandrill's face. Display image X using its associated colormap, map, which has 220 colors.

figure

load mandrill

image(X)

colormap(map)

axis off

axis image

figure

[Y,newmap] = imapprox(X,map,16);

image(Y)

colormap(newmap)

axis off

axis image