Read Image Data into the Workspace

This example shows to read image data from a graphics file into the MATLAB workspace using the `imread` function.

Open Script

Read a truecolor image into the workspace. The example reads the image data from a graphics file that uses JPEG format.

```
RGB = imread('football.jpg');
```

If the image file format uses 8-bit pixels, `imread` returns the image data as an m-by-n-by-3 array of `uint8` values. For graphics file formats that support 16-bit data, such as PNG and TIFF, `imread` returns an array of `uint16` values.

```
whos
```

```
  Name        Size                Bytes  Class    Attributes

  RGB       256x320x3            245760  uint8
```

Read a grayscale image into the workspace. The example reads the image data from a graphics file that uses the TIFF format. `imread` returns the grayscale image as an m-by-n array of `uint8` values.

```
I = imread('cameraman.tif');
whos
```

```
  Name        Size                Bytes  Class    Attributes

  I         256x256                65536  uint8
  RGB       256x320x3             245760  uint8
```

Read an indexed image into the workspace. `imread` uses two variables to store an indexed image in the workspace: one for the image and another for its associated colormap. `imread` always reads the colormap into a matrix of class `double`, even though the image array itself may be of class `uint8` or `uint16`.

```
[X,map] = imread('trees.tif');
whos
```

```
  Name        Size                Bytes  Class     Attributes

  I         256x256                65536  uint8
  RGB       256x320x3             245760  uint8
  X         258x350                90300  uint8
  map       256x3                   6144  double
```

In these examples, `imread` infers the file format to use from the contents of the file. You can also specify the file format as an argument to `imread`. `imread` supports many common graphics file formats, such as the Graphics Interchange Format (GIF), Joint Photographic Experts Group (JPEG), Portable Network Graphics (PNG), and Tagged Image File Format (TIFF) formats. For the latest information concerning the bit depths and image formats supported, see `imread` and `imformats` reference pages.

```
pep = imread('peppers.png','png');
whos
```

```
Name        Size                Bytes  Class     Attributes

I           256x256             65536  uint8
RGB         256x320x3          245760  uint8
X           258x350             90300  uint8
map         256x3                6144  double
pep         384x512x3          589824  uint8
```