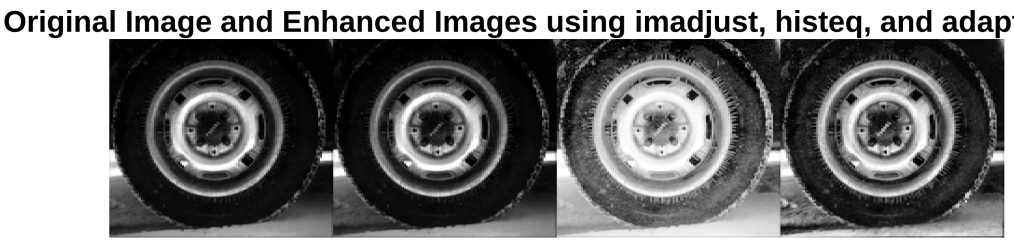
Demonstrate enhancing contrast of 2D images

Grayscale image, enhancement

```
pout = imread("tire.tif");
pout_imadjust = imadjust(pout);
pout_histeq = histeq(pout);
pout_adapthisteq = adapthisteq(pout);
```

Display output

```
montage({pout,pout_imadjust,pout_histeq,pout_adapthisteq},"Size",[1 4]);
title("Original Image and Enhanced Images using imadjust, histeq, and
adapthisteq");
```



Color Image

```
shadow = imread("lowlight_2.jpg");
shadow_lab = rgb2lab(shadow);
```

The values of luminosity span a range from 0 to 100. Scale the values to the range [0 1], which is the expected range of images with data type `double`.

```
max_luminosity = 100;
L = shadow_lab(:,:,1)/max_luminosity;
```

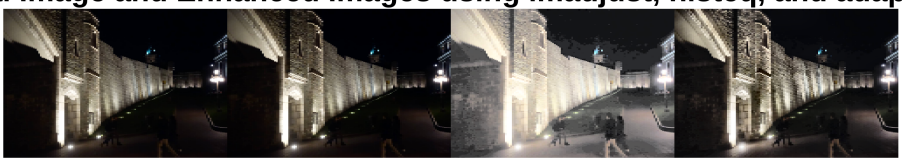
Perform the three types of contrast adjustment on the luminosity channel, and keep the a* and b* channels unchanged. Convert the images back to the RGB color space.

```
shadow_imadjust = shadow_lab;
shadow_imadjust(:,:,1) = imadjust(L)*max_luminosity;
shadow_imadjust = lab2rgb(shadow_imadjust);

shadow_histeq = shadow_lab;
shadow_histeq(:,:,1) = histeq(L)*max_luminosity;
shadow_histeq = lab2rgb(shadow_histeq);

shadow_adapthisteq = shadow_lab;
shadow_adapthisteq(:,:,1) = adapthisteq(L)*max_luminosity;
shadow_adapthisteq = lab2rgb(shadow_adapthisteq);
```

Display the original image and the three contrast adjusted images as a montage.

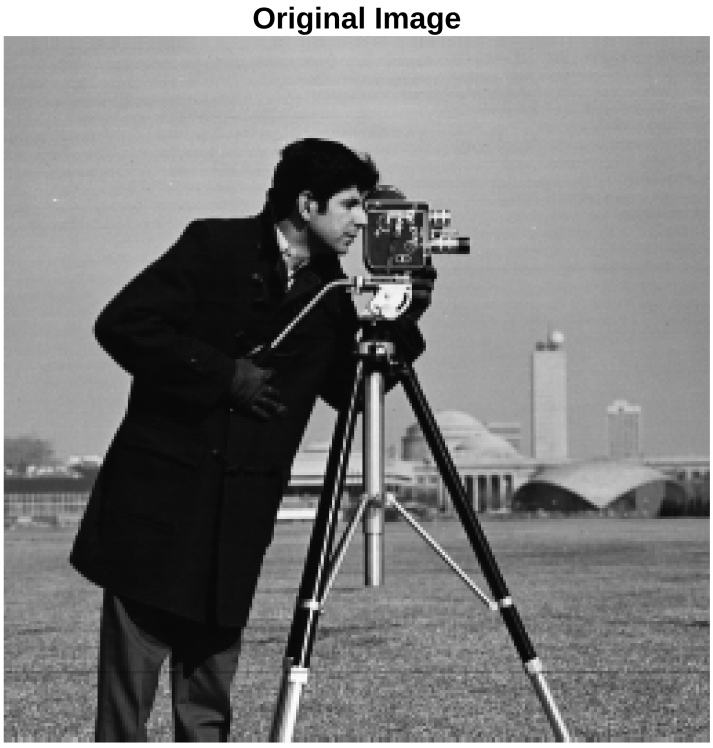
```
figure
montage({shadow,shadow_imadjust,shadow_histeq,shadow_adapthisteq},"Size",[1
4])
title("Original Image and Enhanced Images using " + ...
    "imadjust, histeq, and adapthisteq")
```

Original Image and Enhanced Images using imadjust, histeq, and adapthisteq



Segmenting

```
I = imread('cameraman.tif');
imshow(I)
title('Original Image');
```




```
mask = false(size(I));
mask(170,70) = true;

W = graydiffweight(I, mask, 'GrayDifferenceCutoff', 25);

thresh = 0.01;
[BW, D] = imsegfmm(W, mask, thresh);
figure
imshow(BW)
title('Segmented Image')
```

Segmented Image