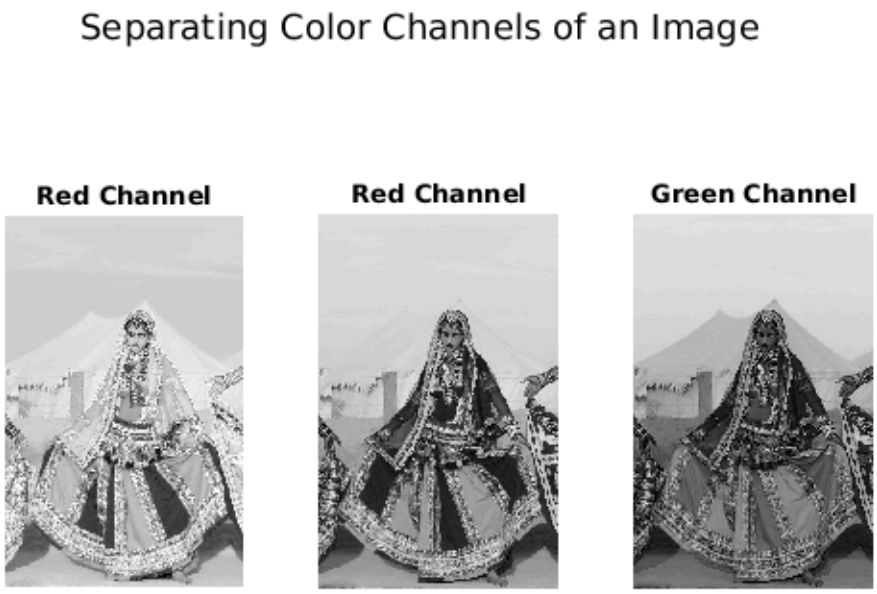
```
% Inspect image values
img = imread('rajasthani_dancers.jpg');
disp(size(img));

% Crop to show only middle dancer
cropped = img(100:800, 400:850, :);

% Show Red, Blue, and Green channels separately
red = cropped(:,:,1);
blue = cropped(:,:,2);
green = cropped(:,:,3);
figure(1)
sgtitle('Separating Color Channels of an Image')
subplot(1,3,1)
imshow(red)
title('Red Channel')
subplot(1,3,2)
imshow(blue)
title('Red Channel')
subplot(1,3,3)
imshow(green)
title('Green Channel')

% overlay two dancers
dancer_1 = img(100:800, 400:850, :);
disp(size(dancer_1));
dancer_2 = img(100:800, 01:451, :);
disp(size(dancer_2));
figure(2)
sgtitle('Overlaying Two Dancers with Averaging')
two_dancers = dancer_1/2 + dancer_2/2;
subplot(1,3,1)
imshow(dancer_1)
title('Dancer 1')
subplot(1,3,2)
imshow(dancer_2)
title('Dancer 2')
subplot(1,3,3)
imshow(two_dancers)
title('Averaged Dancers')

% add gaussian noise
big_sigma = 50;
small_sigma = 5;
big_noise = uint8(rand(size(cropped))).*big_sigma;
small_noise = uint8(rand(size(cropped))).*small_sigma;
figure(3)
sgtitle('Gaussian Noise Produced with Small and Large Sigma')
subplot(1,2,1)
im_lots_noise = cropped+big_noise;
imshow(im_lots_noise)
title('Sigma = 50')
```

```
subplot(1,2,2)
im_little_noise = cropped+small_noise;
imshow(im_little_noise)
title('Sigma = 5')
```

```
         853        1280           3

   701   451      3

   701   451      3
```



Overlaying Two Dancers with Averaging

Dancer 1

Dancer 2

Averaged Dancers

Gaussian Noise Produced with Small and Large Sigma

Sigma = 50

Sigma = 5

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