```
image=imread('100_note.jpeg');
imshow(image)
```



## greyimg=rgb2gray(image)

```
greyimg = 1580x3378 uint8 matrix
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```

imshow(greyimg);



### geeyimg=histeq(greyimg)

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geeyimg = 1580x3378 uint8 matrix
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```

imshow(greyimg)



```
% Get the size of the image
 [rows, cols] = size(greyimg)
 rows =
 1580
 cols =
 3378
 % Preallocate a 3D array to store the bit planes
 bitPlanes = zeros(rows, cols, 8, 'uint8')
 bitPlanes = 1580x3378x8 uint8 array
 bitPlanes(:,:,1) =
                           0 0 0 0 0 0 0
                                                  0 0
                                                          0
 % Extract each bit plane
 for bit = 0:7
     % Use bitget to extract the bit plane
     bitPlanes(:, :, bit+1) = bitget(greyimg, bit+1);
 end
jvhhj
```

% Display the bit planes

figure;

```
for bit = 0:7
    subplot(2, 4, bit+1);
    imshow(bitPlanes(:, :, bit+1) * 255); % Multiply by 255 for visualization
    title(['Bit Plane ', num2str(bit)]);
end
```

```
Bit Plane 0
```















```
% Display the matrices for each bit plane in the Command Window
for bit = 0:7
  fprintf('Bit Plane %d Matrix:\n', bit);
  disp(bitPlanes(:, :, bit+1)); % Display the matrix for the bit plane
end
Bit Plane 0 Matrix:
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## set bit 0 valus to zero and adding again

```
% Set Bit Plane 0 to 0
bitPlanes(:, :, 1) = 0; % Modify Bit Plane 0
```

#### showing image

```
% Reconstruct the image by combining all bit planes
reconstructedImage = zeros(rows, cols, 'uint8');
for bit = 0:7
    reconstructedImage = reconstructedImage + bitPlanes(:, :, bit+1) * 2^bit;
end

% Display the original and reconstructed images
figure;
subplot(1, 2, 1);
imshow(greyimg);
title('Original Image');

subplot(1, 2, 2);
imshow(reconstructedImage);
title('ReconstructedImage (Bit Plane 0 set to 0)');
```

# **Original Image**



# **Reconstructed Image (Bit Plane 0 set to 0)**

