```
% bit plane splicing
% created by Surya Manohar
clear all;
close all;
clc;
% Define the image URL
imageURL = 'https://magazine.columbia.edu/sites/default/files/styles/
wysiwyg_full_width_image/public/2023-04/Exp_study-hall.jpg?itok=bM9tC0Dt';

% Read the image from the URL
img = webread(imageURL);

% Convert the image to grayscale
grayImg = rgb2gray(img);

% Get the size of the image
[rows, cols] = size(grayImg);

% Create a figure to display the bit planes
figure;
for bit = 7:-1:0  % Start from MSB (bit 7) to LSB (bit 0)
    % Extract the current bit plane
    bitPlane = bitget(grayImg, bit + 1);

    % Convert to 0-255 for display purposes
    bitPlaneImage = uint8(bitPlane * 255);

    % Display the bit-plane
    subplot(2, 4, 8-bit); % Arrange in a 2x4 grid
    imshow(bitPlaneImage);
    title(['Bit plane ', num2str(bit)]);
end

% Show the original grayscale image
figure;
imshow(grayImg);
title('Original Grayscale Image');
```

Bit plane 7

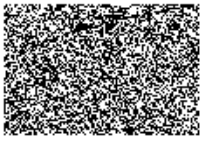
Bit plane 6

Bit plane 5

Bit plane 4

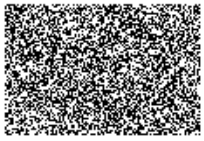
Bit plane 3

Bit plane 2



Bit plane 1

Bit plane 0



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