
```
% Digital Image Processing
% Created by Vipul Pawar
clc;
clear all;
close all;

% Importing the image
image_url = 'https://media.istockphoto.com/id/504633706/photo/winter-pearl-
lake.jpg?s=612x612&w=0&k=20&c=jmzs_o2blxe4m_PJoQCepBQpy5p4d900JewKG50pUDw%3D';
original_image = imread(image_url);

% Convert the original image to grayscale using average method
red_channel = original_image(:, :, 1);
green_channel = original_image(:, :, 2);
blue_channel = original_image(:, :, 3);
grayscale_image = (double(red_channel) + double(green_channel) +
double(blue_channel)) / 3;

% Count the sum of all pixel values in the grayscale image
total_intensity = sum(grayscale_image(:));

% Convert the grayscale image to black and white using a threshold
[image_height, image_width, ~] = size(original_image);
threshold = total_intensity / (image_height * image_width);
binary_image = grayscale_image > threshold;

% Create an all-blue version of the original image
blue_image = original_image;
blue_image(:, :, 1) = 0; % Remove red channel
blue_image(:, :, 2) = 0; % Remove green channel

% Create an all-green version of the original image
green_image = original_image;
green_image(:, :, 1) = 0; % Remove red channel
green_image(:, :, 3) = 0; % Remove blue channel

% Create an all-red version of the original image
red_image = original_image;
red_image(:, :, 2) = 0; % Remove green channel
red_image(:, :, 3) = 0; % Remove blue channel

% Plotting all the results
figure;

subplot(2, 3, 1);
imshow(original_image);
title("Original Image");

subplot(2, 3, 2);
imshow(uint8(grayscale_image)); % Convert to uint8 for display
title("Grayscale Image");
```

```
subplot(2, 3, 3);  
imshow(binary_image);  
title("Black & White Image");  
  
subplot(2, 3, 4);  
imshow(red_image);  
title("Red Image");  
  
subplot(2, 3, 5);  
imshow(green_image);  
title("Green Image");  
  
subplot(2, 3, 6);  
imshow(blue_image);  
title("Blue Image");
```

Original Image



Grayscale Image



Black & White Image



Red Image



Green Image



Blue Image

