EXPERIMENT 6 - Local Binary Pattern

```
% By Pritish Deshmukh
clear;
close all;
clc;
% input image
input_image =
imread('https://upload.wikimedia.org/wikipedia/commons/6/6d/Blue-and-
Yellow-Macaw.jpg');
% image to grayscale convertion
gray_image = rgb2gray(input_image);
% Dimensions of the image
[rows, cols] = size(gray_image);
% Initialize the Local Binary Pattern(LBP)
lbp_image = zeros(rows, cols);
% Define the eight neighbors
neighbors = [
   -1 -1; -1 0; -1 1;
    0 -1;  0 1;
    1 -1;  1 0;  1 1
];
% Calculate the Local Binary Pattern for each pixel
for i = 2:rows-1
   for j = 2:cols-1
       center_pixel = gray_image(i, j);
       binary_pattern = zeros(1, 8);
       for k = 1:8
           neighbor_pixel = gray_image(i + neighbors(k, 1), j +
neighbors(k, 2));
           binary_pattern(k) = neighbor_pixel >= center_pixel;
       end
       lbp_image(i, j) = sum(binary_pattern .* 2 .^ (7:-1:0));
   end
end
% Display images
figure;
subplot(1, 2, 1);
imshow(gray_image);
title('Original Image');
subplot(1, 2, 2);
imshow(uint8(lbp_image));
title('Local Binary Pattern Image');
```

INPUT -

OUTPUT–