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%Code to implement Shannon Hertley for Binary Systems (M=2)
clc;
clear all;
close all;

I = imread('Vidit.jpg');
if size(I,3)==3
    I=rgb2gray(I);
end
imshow(I);
counts=imhist(I); %takes a count of the pixels at different intensities
p=counts/sum(counts); %takes the probability of the particular intensity.

H=0; %Variable to store final entropy value
for i=1:length(p) %for all 256 gray levels
    if p(i)~=0 %to check whether the input is not zero else the log2(0) would
be undefined
        H=H-p(i)*log2(p(i)); %applying the formula for the Shannon entropy.
Log2 for M=2.
    end
end

disp(['Image Entropy=', num2str(H), ' bits/pixel']); %displays the value fo
teh entropy in text format and displays it on the command window.
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```
Image Entropy=7.2563 bits/pixel
```

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