```
i = imread("IMG-20191216-WA0102.jpg");
g = rgb2gray( i );
imshow(g);
```

```
[r, column]=size(g);
pix = r*column;
freq = zeros(1,256);
pf = zeros(1,256);
for c = 1 : column
 for r = 1 : r
 level = g(r, c);

 freq(level+ 1) = freq(level+1) + 1;
 pf(level+1) = freq(level+1)/pix;
 end
end
ent = 0;
for i = 1: 256
 if freq(i)~=0
 ent = ent - (pf(i)*log2(pf(i)));
 end
end
disp(ent);
```

```
    7.3029
```

Huffman Compression Algorithm:

```
a=double(g(:));
e = entropy(g);
disp('The Entropy of the image is ');
```

```
The Entropy of the image is
```

```
disp(e);
```

```
    7.3050
```

```
[p,symbols]=hist(a,unique(a));
[code,avglen] = huffman5(p);
display(code);
```

```
code = 234×1 string
"0011100100111101000010"
"0011100100111101000011"
"0011100100111101000000"
"0011100100111101000010"
"0011100100111000010"
"0011100100111101000011"
"0011100100111000011"
"0011100100111000000"
"0011100100111101101"
"0011100100111000001"
    ⋮
```

```
disp('The Efficiency of the huffman is ');
```

```
The Efficiency of the huffman is
```

```
display(e/avglen);
```

```
    0.9955
```