```
%% 1. Write a Matlab program to determine the frequency of given pixel occurring in an image.

cimg = imread('cameraman.tif');
fprintf('The input image is:',imshow(cimg));
```

```
The input image is:
```

```

[m,n]=size(cimg);

pixel_value= input('Enter the prefered pixel for black and white image:');
```

```
pixel_count=0;

for i=1:m
    for j=1:n
        if(cimg(i,j)==pixel_value)
            pixel_count=pixel_count+1;

        end
    end
end
fprintf('The frequency is %d',pixel_count);
```

```
The frequency is 900
```

```
%% 2. Write a matlab program to calculate the global mean value in a two dimensional matrix M * N.

img = imread('cameraman.tif');
[m,n]=size(img);

sum=0;
SUM = double(sum);

for i=1:m
    for j=1:n
        SUM=SUM+double(img(i,j));
    end
end

globalmean = SUM/double(m*n);
fprintf('The global mean is: %d',globalmean);
```

```
The global mean is: 1.187245e+02
```

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```

```
%% 3. Write a matlab program to calculate the mean value of every row in a two dimensional matrix M * N.

img = imread('cameraman.tif');
fprintf('The input image is',imshow(img));
```

The input image is

```
fprintf('\n\nThe Row-wise mean values are:');
```

The Row-wise mean values are:

```
mean(img,2)
```

```
ans = 256×1
  170.7656
  171.1094
  170.7656
  171.1094
  170.6328
  171.2930
  171.4219
  172.0508
  170.7969
  170.1602
     ⋮
```

```
%% 4. Write a Matlab program to determine the frequency of each pixel occurring in a column of an image.

img = imread('cameraman.tif');
fprintf("The input image is:\n", imshow(img));
```

The input image is:

```
[m,n] = size(img);
fprintf("m = %d \nn = %d\n", m,n);
```

```
m = 256
n = 256
```

```
col = 40;
Sum = 0;
a = {};
for i = 1:m
    a{i} = img(i,col);
end
b = {};
for i = 1:m
    sum = 0;
    for j = 1:m
        if(a{j}==i)
        sum = sum + 1;
        end
    end
    b{i} = sum;
end
fprintf("The Frequencies of pixels in column %d are:\n",col);
```

```
The Frequencies of pixels in column 40 are:
```

```
for i = 1:m
 fprintf("%d = %d\n", i,b{i});
end
```

```
1 = 0
2 = 0
3 = 0
4 = 0
5 = 0
6 = 0
7 = 0
8 = 1
9 = 9
10 = 11
11 = 16
12 = 24
13 = 9
14 = 4
15 = 7
```

```
%% 5. Write a Matlab program to find out total number of pixels which has less than the given intensity.

intensity = input('Enter the prefered intensity: ');
total = 0
```

```
total = 0
```

```
oo = imread('cameraman.tif');
fprintf('The input image is :', imshow(oo));
```

```
The input image is :
```

```
for i=1:m
    for j= 1:n
        if (oo(i,j) < intensity)
        total = total + 1;
        end
    end
end
fprintf('the total number of pixels is: %d',total);
```

```
the total number of pixels is: 35546
```

```
%% 6. Write a Matlab program to determine the frequency of given pixel occurring in a color image.

pixel_val = input('Enter the prefered pixel for color image: ');
pixel_frequency = 0
```

```
pixel_frequency = 0
```

```
imgo = imread('onion.png');
fprintf('The input image is :', imshow(imgo));
```

```
The input image is :
```

```
[m,n] = size(imgo);
for i=1:m
    for j= 1:n
        if (imgo(i,j) == pixel_val)
            pixel_frequency = pixel_frequency + 1;
        end
    end
end
fprintf('the frequency of pixels is: %d',pixel_frequency);
```

```
the frequency of pixels is: 23
```