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Experiment = 1

To understand and implement program for threshold an image.

```
Clear all;
clc;
Close all;
a = imread ('Pout.jpg');
[m,n] = size (a)
for i=1:1:m
for j=1:1:n
if (a(i,j)<12.5)
b(i,j)=0
else
b(i,j)=255;
end
end
end
Subplot (1,2,1), Subimage (a), title('original image');
Subplot (1,2,2), Subimage (b), title ('threshold image');
```

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Experiment = 2

To understand and implement program to rotate an image.

```
Clear all;
clc;
close all;
a = imread ('Pout.jpg');
b = imrotate (a, 15);
Subplot (1,2,1);
Subimage (a);
title ('input image');
Subplot (1,2,2);
Subimage (b);
title ('output image');
```

Note:- I = imrotate (I, angle)
↳ Rotate image

(To rotate image clockwise
Specify a negative value for angle)

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Experiment =3

To understand and implement program to scale (resize) an image.

```
Clear all;
clc;
Close all ;
I = imread ('P.out.jpg');
J = imresize (I, 0.5);
    Figure
    imshow (I)
    title ('original image');
    figure
    imshow (J);
    title ('resize image');
```

Teacher's Signature.....

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Experiment = 4

To understand and implement program for translate an image.

```
clear all;
clc;
close all;
I = imread ('C:\Users\Test\Download\part.jpg');
figure(1);
imshow(I);
[r, c, w] = size(I);
shift(1:r, 1+1000 : c+1800, :) = I
figure(2);
imshow(shift);
```

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Experiment = 5

```
Clear all ;
clc ;
Close all;
I = imread ('C:\Users\Test\Pictures\images.jfig')
figure(1);
imshow(I)
[r, c, v] = size(I)
Shift (1:r, 1+10:c+10, :) = I;
figure (2)
imshow (Shift)
```

Teacher's Signature.....

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Experiment = 6

To understand and implement program to obtain histogram equalization of an image.

Theory:

Histogram Equalization :- This method usually increases the global Contrast of many images, especially when the usable data of the image is represented by close contrast values. Through this ~~implement~~ adjustment, the intensities can be better distributed on the histogram. This allows for areas of lower local Contrast to gain a higher Contrast. Histogram equalization accomplishes this by effectively spreading out the most frequent intensity values.

Program:

```
Clear all
clc
I = imread ('Cameraman.tif');
I = double (I);
maximum_value = max ((max (I)));
[row col] = size (I);
C = row * col;
h = zeros (1, 300);
z = zeros (1, 300);
for n = 1: row
for m = 1: col
```

Teacher's Signature.....

```
if l(n,m) == 0
l(n,m) = 1;
end
end
end
for n=1: row
for m=1: col
t = l(n,m)
h(t) = h(t)+1
end
end
Pdf = h/C;
Cdf(1) = Pdf(1);
for x = 2 maximum_value
Cdf(x) = Pdf(x) + Cdf(x-1)
end
new = round( Cdf* maximum_value );
new = new+1;
for p= 1: row
for q=1: col
temp = l(p,q)
b(p,q) = new(temp);
t=b(p,q);
z(t) = z(t)+1;
end
end
b = b-1
Subplot (2,2,1) imshow(uint8(l)), title`image1');
Subplot (2,2,2); bar(h), title ("Histogram of d orig. Image');
Subplot (2,2,3), imshow (uint8(b), title 'Image2');
Subplot (2,2,4); bar(z), title ('Histogram Equalization of Image 2');
```