

University Of Mumbai
Institute of Distance & Open Learning



**PRACTICAL JOURNAL IN
IMAGE PROCESSING**

SUBMITTED BY

YOGESH M. JADHAV

APPLICATION ID: 27941

SEAT NO: 600104

**MASTER OF SCIENCE IN INFORMATION TECHNOLOGY PART-I
SEMESTER II**

**ACADEMIC YEAR
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**INSTITUTE OF DISTANCE AND OPEN LEARNING
IDOL BUILDING, VIDYANAGARI,
SANTACRUZ (EAST), MUMBAI-400 098**

CONDUCTED AT

**RIZVI COLLEGE OF ARTS, SCIENCE AND COMMERCE
BANDRA (W), MUMBAI 400050**

University of Mumbai
Institute of Distance & Open Learning



Dr.Shankar Dayal Sharama Bhavan, Kalina, Vidanagari,
Santacruz (E), Mumbai-400 098.

Certificate

This is to certify that

Mr./Ms./Mrs. YOGESH M. JADHAV Application ID: 27941, Seat No: 600104 from **Rizvi College of Arts, Science and Commerce Bandra(W)**, Mumbai 400 050 has successfully completed all the practical of **IMAGE PROCESSING**, Subject Code PSIT204 for M.Sc.(I.T.) Part I in the academic year 2022-2023.

Section I _____

Section II _____

MSc (IT) Co-ordinator, IDOL

External Examiner

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Image Processing Practicals

Instructions:-

Install Scilab

In Scilab Console

Application menu-> Module Manager- ATOMS

Select Image Processing

Select Image Processing and Computer Vision Toolbox

Click on Install

Practical 1:- Program to calculate number of samples required for an image

Program:-

```
clc;
clear;
m=4;
n=6;
N=400;
N2=2*N;
Fs=m*N2*n*N2;
disp('Number of samples required to preserve the information in the
image = ',Fs);
```

Output:-

Number of samples required to preserve the information in the
image
=15360000.

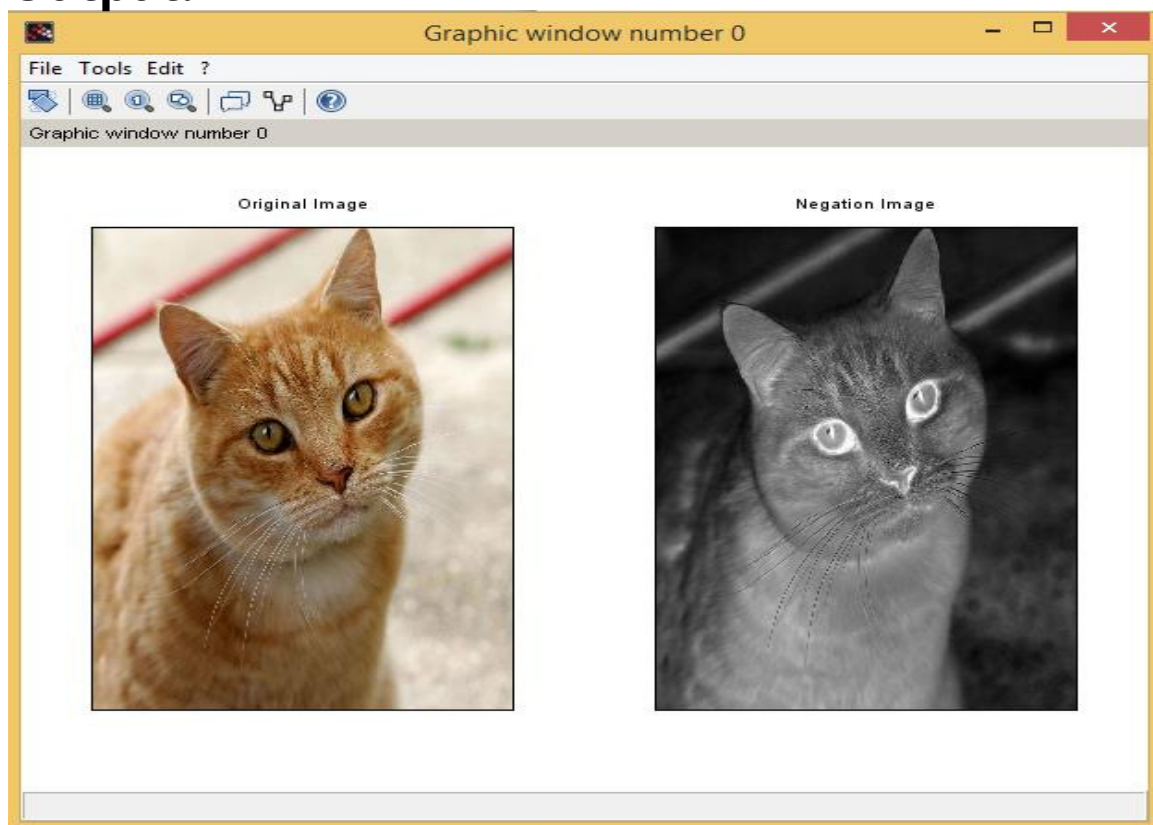
Practical 2:- Program to perform image

negation Program:-

//Practical 2 - Program to perform image negation

```
clc;
clear all;
a=imread('G:\RAFATKHAN\Data\MScIT\ImageProcessing\Practical\Practicals\cat.jpg');
subplot(1,2,1);
imshow(a);
title('Original Image');
[m,n]=size(a);
for i=1:m
for j=1:n
c(i,j)=255-a(i,j)
end
end
subplot(1,2,2);
imshow(c);
title('Negation Image');
```

Output:-

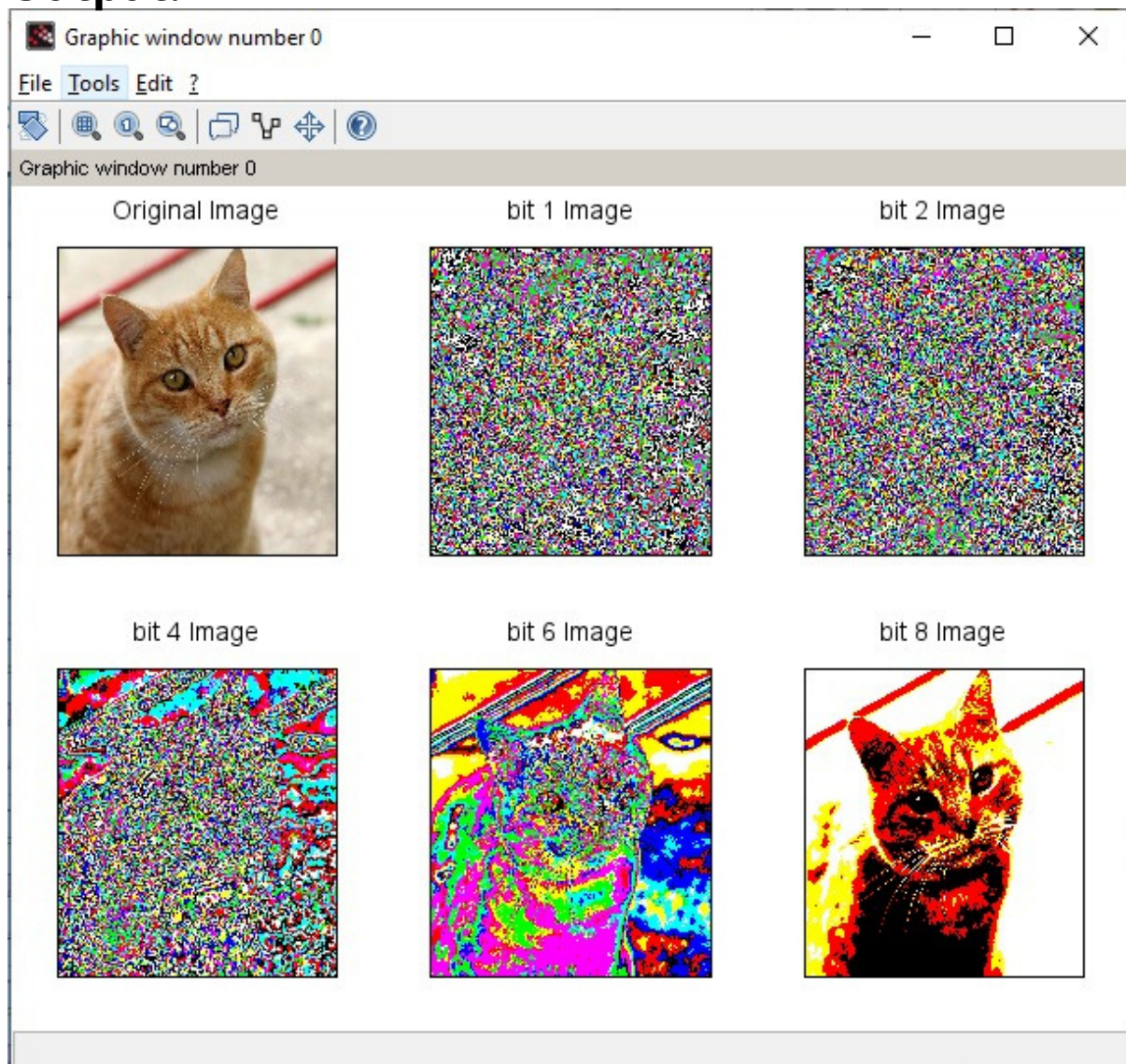


Practical 3:- Program to perform Piecewise Linear Transformations- Bit Plane Slicing

Program:-

```
clc;
clear all;
a=imread('G:\RAFATKHAN\Data\MScIT\ImageProcessing\Practical\Practicals\cat.jpg');
b=double(a);
subplot(2,3,1);
imshow(a);
title('Original Image');
f1=bitget(b,1);
subplot(2,3,2);
imshow(f1);
title('bit 1 Image');
f2=bitget(b,2);
subplot(2,3,3);
imshow(f2);
title('bit 2 Image');
f3=bitget(b,4);
subplot(2,3,4);
imshow(f3);
title('bit 4 Image');
f4=bitget(b,6);
subplot(2,3,5);
imshow(f4);
title('bit 6 Image');
f5=bitget(b,8);
subplot(2,3,6);
imshow(f5);
title('bit 8 Image');
```

Output:-

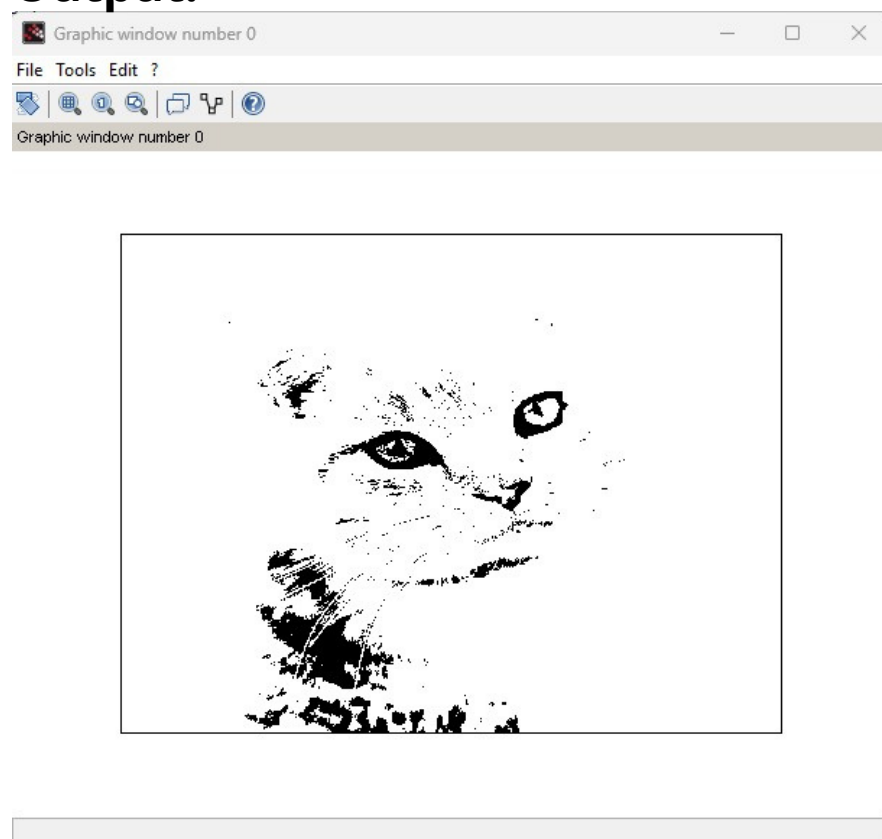


Practical 4 – Program to perform threshold of an

image Program:-

```
a=uigetfile('*.','Select the  
Image:-'); a=imread(a);  
T=100; //threshold value  
[r,c]=size(a);  
for i=1:r  
for j=1:c  
if (a(i,j)<=T)  
x(i,j)=0;  
else  
x(i,j)=255;  
end  
end  
end  
x=uint8(x);  
imshow(x);
```

Output:-

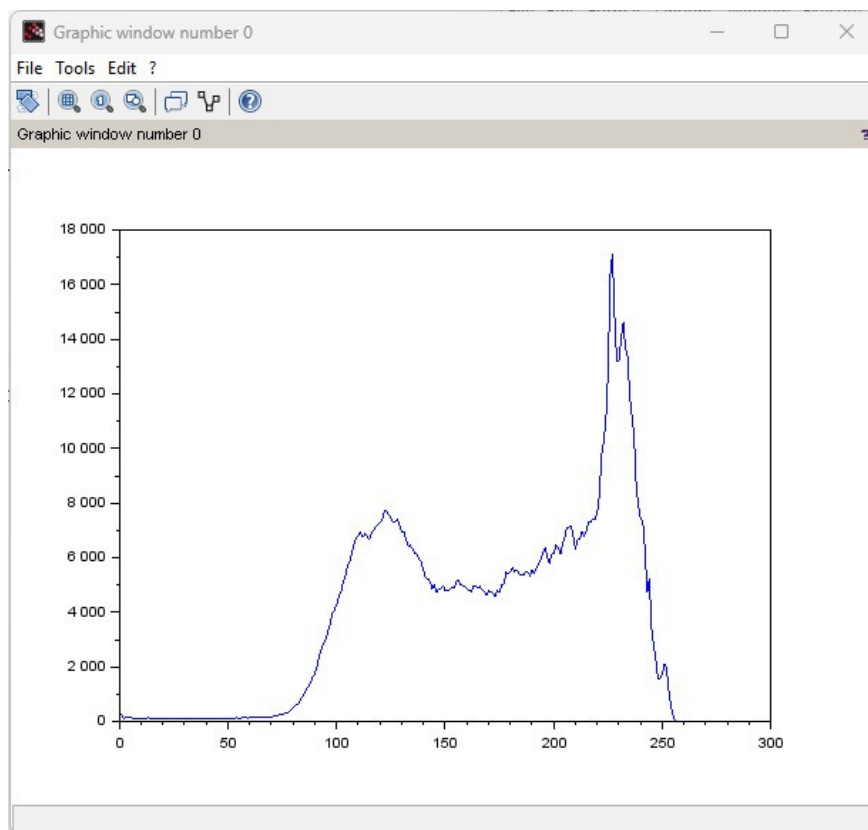


Practical 5- Program to plot the histogram of an image and categorise

Program:-

```
a=uigetfile('*.','Select the  
Image:-'); a=imread(a);  
r=size(a,1);  
c=size(a,2);  
h=zeros(1,256);  
for i=1:r  
    for j=1:c  
        if (a(i,j)==0)  
            a(i,j)=1;  
        end  
        k=a(i,j);  
        h(k)=h(k)+1;  
    end  
end  
plot(h);
```

Output:-

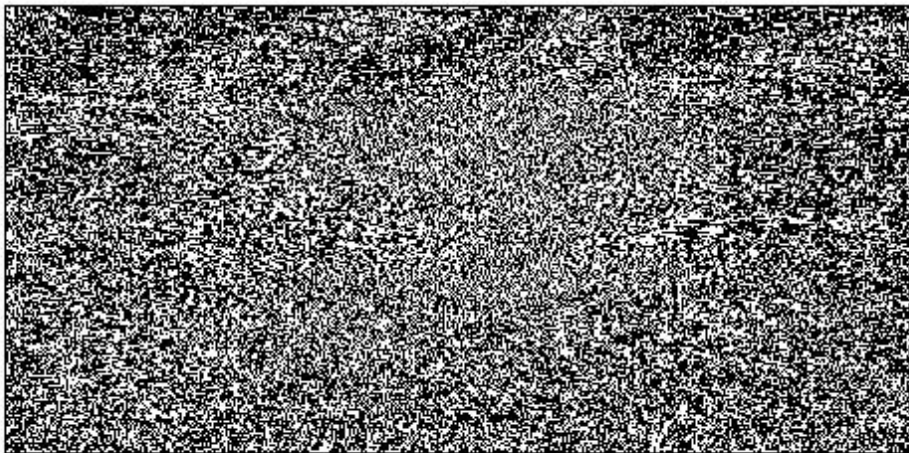


Practical 6- Program to apply Laplacian filter in frequency domain

Program:-

```
// Program to apply Laplacian filter in frequency domain
a=uigetfile('*.','Select the Image:-');
I=imread(a);
Ir = double(I);
mask_laplaciano = [0 -1 0; -1 4 -1; 0 -1 0];
Irl = conv2(mask_laplaciano, Ir);
subplot(221);
subplot(211);
imshow(I);
subplot(212);
imshow(Irl);
```

Output:-

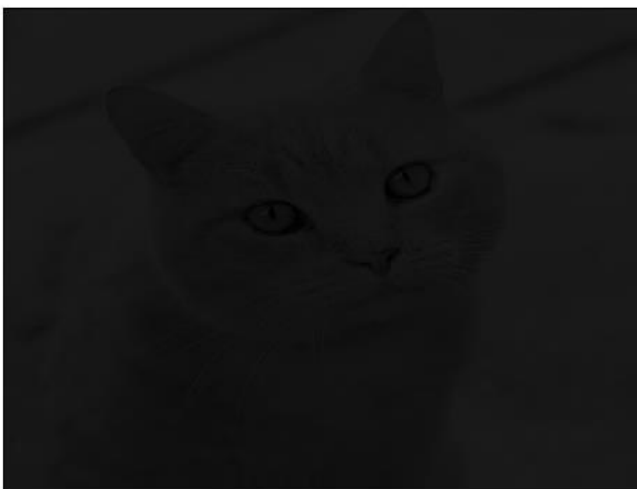


Practical 7- Program to perform Power Law Transformation

Program:-

```
//Power Law Transformation
a=uigetfile('*.*','Select the Image:-');
a=imread(a);
r=size(a,1);
c=size(a,2);
G=0.6;
//G=input('Enter the value of Gamma:-');
for i=1:r
    for j=1:c
        b=double(a(i,j));
        x(i,j)=b.^G;
    end
end
new=x;
new1=uint8(new);
imshow(new1);
```

Output:-



Activate Win

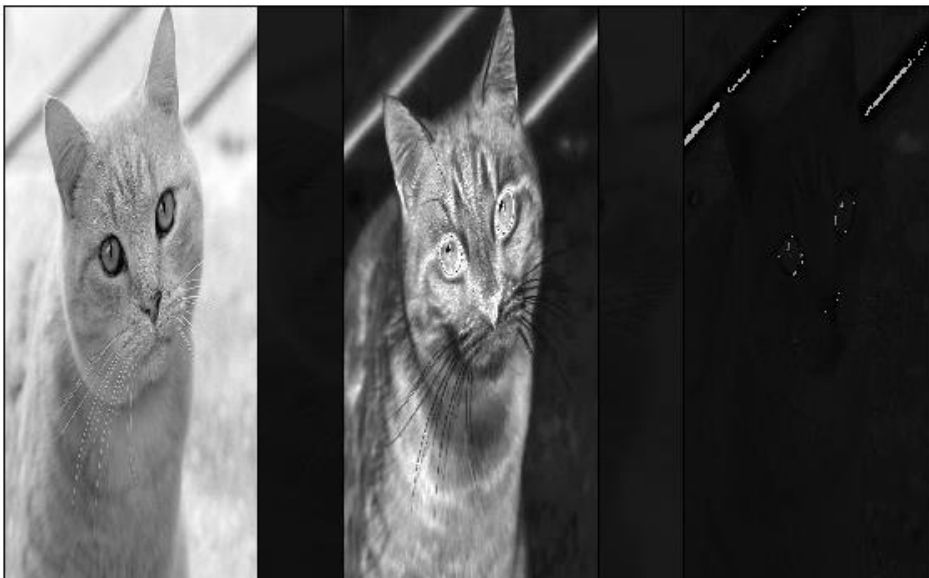
Go to Settings to

Practical 8:- Program for converting from one color model to another model

Program:-

```
a=uigetfile('*.','Select the Image:-'); I=imread(a);
HSV = rgb2hsv(I);
hue = HSV(:,:,1);
sat = HSV(:,:,2);
value = HSV(:,:,3);
subplot(131);
imshow(hue);
subplot(132);
imshow(sat);
subplot(133);
imshow(value);
```

Output:-



Practical 9:- Program to demonstrate color

separations Program:-

```
a=uigetfile('*.','Select the Image:-'); I=imread(a);
subplot(2,3,1);
imshow(I);
title('Original Image');
R=I
R(:, :, [2 3])=0;
subplot(2,3,2);
imshow(R);
title('Red Matrix');
G=I
G(:, :, [1 3])=0;
subplot(2,3,3);
imshow(G);
title('Green Matrix');
B=I
B(:, :, [1 2])=0;
subplot(2,3,4);
imshow(B);
title('Blue Matrix');
```

Output:-

