Aim:- Accessing the pixel values of gray and color images

```
>% Read the image
>> pic = imread('C:\Users\student1\Downloads\i3.jpg'):

>> % Convert to grayscale
>> gray-pic = rgb2gray (Pic);

>> % pixel value of gray image
>> pixel_val = gray-pic (60,70):
>> fprint f('Pixel Value of gray image at 60,70, %d',
            pixel-val);

>> % pixel values of colored images
>> red-val = pic(60,70,1);
>> green-val = pic (60,70,2);
>> blue-val = pic (60,70,3);
>> fprintf("Pixel value of Red %d, Green %d, Blue %d'
        , red-val, green-val, blue-val);
```

2

Date 25/3/22

Expt. No. 1.3

Aim:- Accessing RGB channel values of an image

```
>>% Read the image
>>image = imread('C:\Users\student1\Downloads\i3.jpg');

>>%Extracting RGB Channel Values of image
>> red-channel = image(:,:,1);
>> green-channel = image(:,:,2);
>> blue-channel = image(:,:,3);

>> % ploting the values of RGB channels
>> subplot(2,2,1); imshow(image); title('image');
>> subplot(2,2,2); imshow(red-channel); title('red-
   channel');
>> subplot(2,2,3); imshow(~~Ha~~ green-channel);
   title('green-channel');
>> subplot(2,2,4); imshow(blue-channel);
   title('blue-channel');
```

Aim: To apply threshold function on an image

```
>> % Read an image
>> img= imread('C:\Users\Student1\Downloads\C.jpg');

>>% threshold function
>>bw =im2bw (img);
>>t-val= graythresh (img);
>> fprintf("Threshold Value =%d', t-val);
>> t-img =im2bw (img, t-val);

>> t1 = im2bw (img, 0.5);
>> i2 = im2bw (img, 0.7);

>> subplot(5,1,1); imshow ( ); title('original');
>> subplot (5,1,2); imshow(bw); title ('Black & white');
>> subplot (5,1,3); imshow (t-img); title ('Threshold');
>> subplot (5,1,4); imshow ( t1); title ('0.5 Threshold');
>> subplot (5,1,5); imshow( t2); title('0.7 Threshold');
```

22/4

4. To apply Scaling, rotation, and translate function on ~~in~~ an image.

```
>>pic1 = imread('C:\Users\student1\Downloads\i3.jpg');

>>rotateImage = imrotate(pic1,180);
>>scaleImage  = imresize(pic1, 3);
>> translateImage = intranslate (pic1, [50,40]);

>> subplot (3,1,1) ;  imshow(pic1); title ('Original Image');
>>subplot (3,1,2) ;  imshow (rotateImage); title('rotated');
>> subplot (3,1,3) ; imshow (translateImage); title('Translated');

>>figure (); imshow(scale Image);


>> % translateImage with fill value

>>figure (), imshow (pic1);

>> translatefillvalue = imtranslate (pic1, [50,-50],'fill value', 255);

>> figure(), imshow ( translate fillvalue);
```

29/4

Date

Expt. No. 5.

Page No.

Aim:- Implement the linear filtering using Convolution, Highly selective filters.

```
>> myimage = imread('C:\Users\student\Desktop\photo.jpg');
myimage = rgb2gray(myimage);
subplot(3,3,1);
imshow(myimage); title('original Image');

>> gaussmask = fspecial('guassian', 3);
filting = imfilter(myimage, gaussmask);
subplot(3,3,2);
imshow(filting,[]) ,title('Output of Gaussian filter 3x3');

>> avgfilt = [1 1 1 1 1 1 1;
              1 1 1 1 1 1 1;
              1 1 1 1 1 1 1;
              1 1 1 1 1 1 1;
              1 1 1 1 1 1 1;
              1 1 1 1 1 1 1;
              1 1 1 1 1 1 1];

>> avgfiltmask = avgfilt/sum(avgfilt);
convimage = conv2(double(myimage), double(avgfiltmask));

>> subplot(3,3,3); imshow(convimage,[]);
title('Average filter with conv2()');

>> subplot(3,3,4);
```

```
noisying= imnoise(myimage,'Salt & Pepper', 0.5);
imshow ( noisying, []);
title ('Noisy Image);

>> mymed3img = medfilt2(noisying,[3 3]);
subplot (3,3,5);
imshow(mymed3img,[]), title('Output of 3x3
                              Median filter');

>> mymed7img = medfilt2(noisying, [7.7]);
subplot (3,3,6);
imshow(mymed7img,[]), title('Output of 7x7
                              Median filter')

>> h=[1 -2 -1; -1 5 -1; 1 -2 1];
hpt3t = conv2(double (myimage), double(h));
subplot(3,3,7);
imshow(hpt3/100), title('Output of High pass filte
```