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Expt. No. 29 Page No. 46

Write a program for image processing.

(a) Program :-

```
clear all;
img = imread('desert.jpg'); % load image
imshow(img);                % show image
x = imresize(img, [250, 250]); % resize image
imshow(x);
x1 = imresize(image, 1/2);  % resize
imshow(x1);
imfo('desert.jpg');         % info. about image
g = rgb2gray(x);            % convert color to gray
imshow(g);
figure                      % hold window
imshow(x);
figure
imshow(g);
m = rand(250, 250);         % create image
m = m*100;
m = uint8(m)
imshow(m);
```

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Expt. No. 29 Page No. 47

(6) Image Processing Histogram

Program:-

```
img = imread('desert.jpg');
img = rgb2gray(img);
figure
    imhist(img);
figure
    eq = histeq(img);
    ad = imadjust(img);
figure
    imhist(ad);
figure
    imshow(img);
figure
    imshow(eq);
    imshow(ad);
```

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Expt. No. 30 Page No. 48

Write a program for Denoising.

Program:-

```
img = imread('desert.jpg');
m = rgb2gray(img);
x = imresize(m, [250, 250]);
imshow(x);
i = imnoise(x, 'speckle', 0.05);
imshow(i);
h = ones(5,5);
z = imfilter(i, h);
imshow(z);
h1 = fspecial('unsharp');
z1 = imfilter(i, h1);
imshow(z1);
h2 = fspecial('average', 3);
z2 = imfilter(i, h2);
imshow(z2);

m = medfilt2(i, [3, 3]);        % Median filter
imshow(m);

n = wiener2(i, [3, 3]);         % Wiener filter
imshow(n);

g = imgaussfilt(i);             % gaussian filter
imshow(g);
```

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Expt. No. 31

Page No. 49

Write a program for Linear Regression.

Program :-

```
X = [3, 8, 9, 13, 3, 6, 11, 21, 1, 16];
Y = [30, 57, 64, 72, 36, 43, 59, 90, 20, 83];

mean_x = mean(X);
mean_y = mean(Y);
sum1 = 0;
sum2 = 0;
for i = 1 : 10
  sum1 = sum1 + (x(i) - mean_x) * (y(i) - mean_y);
  sum2 = sum2 + (x(i) - mean_x) ^ 2;
end
w1 = sum1 / sum2;
w0 = mean_y - w1 * mean_x;
fprint('y = %f + %f * x \n', w0, w1);
```

Output :- y = 23.208972 + 3.537476 x

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