

A dark blue vertical bar on the left side of the page. A blue arrow points to the right from the bar, containing the date.

1/16/2023

# Digital Image Processing:

Assignment 4:

Several thin, curved lines in dark blue and light grey originate from the bottom left corner and sweep upwards and to the right.

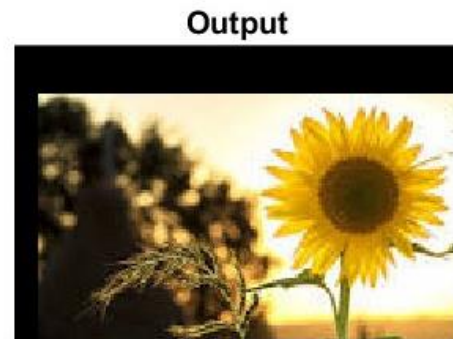
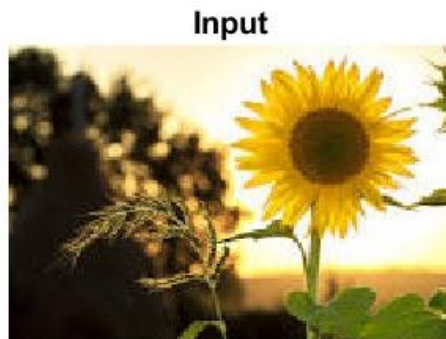
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B.SC SEM-V  
B.SC-(SEM-V)-COMP-O4  
VB-2480 OF 2017-18

## 1. To write and execute program for geometric transformation of image: a. Translation

%To write and execute program for geometric transformation of image: a. Translation

```
img = imread('src/images.jpg');  
  
% Set translation amounts (10 pixels in x direction and 20 pixels in y direction)  
tx = 10;  
ty = 20;  
  
img_translated = imtranslate(img, [tx, ty]);  
  
figure('name','Translation','NumberTitle','off');  
  
subplot(1,2,1)  
imshow(img);  
title('Input')  
  
subplot(1,2,2)  
imshow(img_translated);  
title('Output')
```



## 2. To write and execute program for geometric transformation of image: b. Scaling

%To write and execute program for geometric transformation of image: b. Scaling

```
I = imread('src/images.jpg');  
  
% Define scaling factor  
s = 2; % scale up by a factor of 2  
  
% Apply scaling to image  
I_scaled = imresize(I, s);  
  
imwrite(I_scaled, 'output_4b.png');
```

## 3. To write and execute program for geometric transformation of image: c. Rotation

%To write and execute program for geometric transformation of image: c. Rotation

```
img = imread('src/images.jpg');  
  
% Define the angle of rotation in degrees  
angle = 45;  
  
% Perform the rotation  
rotated_img = imrotate(img, angle);  
  
figure('name', 'Rotation', 'NumberTitle', 'off');  
  
subplot(1,2,1)  
imshow(img);  
title('Input')  
  
subplot(1,2,2)  
imshow(rotated_img);  
title('Output')
```



#### 4. To write and execute program for geometric transformation of image: d. Shrinking

%To write and execute program for geometric transformation of image: d. Shrinking

```
img = imread('src/images.jpg');

% Define the scaling factor
scale = 0.5;

% Perform the shrinking
shrunk_img = imresize(img, scale);

imwrite(shrunk_img, 'output_4d.png');
```

#### 5. To write and execute program for geometric transformation of image: e. Zooming

%To write and execute program for geometric transformation of image: e. Zooming

```
clear
% Load the image
img = imread('src/images.jpg');

% Define the scaling factor
scale_factor = 2;

% Zoom in on the image
new_img = imresize(img, scale_factor);

% Show the original and resized images
imshow(img);
figure;
imshow(new_img);
```

