DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

PSG COLLEGE OF TECHNOLOGY

(AUTONOMOUS INSTITUTION)

Assignment Presentation

(19L605-DIGITAL IMAGE PROCESSING)

ACADEMIC YEAR: 2022-2023

SEMESTER- 6

BATCH:5

TITLE: IMAGE SMOOTHING USING MATLAB

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MATLAB CODE:

```
%DIP ASSIGNMENT PRESENTATION:
%BATCH:IMAGE SMOOTHING:
clc;
clear all;
close all;
I = imread('imageasn.jpg');
%gaussian low pass filtering
Iblur1 = imgaussfilt(I,2);
Iblur2 = imgaussfilt(I,4);
Iblur3 = imgaussfilt(I,8);
figure
subplot(221);
imshow(I);
title('Original image');
subplot(222);
imshow(Iblur1);
title('Smoothed image, \sigma = 2');
subplot(223);
imshow(Iblur2);
title('Smoothed image, \sigma = 4');
subplot(224);
imshow(Iblur3);
title('Smoothed image, \sigma = 8');


IblurX1 = imgaussfilt(I,[4 1]);
IblurX2 = imgaussfilt(I,[8 1]);
IblurY1 = imgaussfilt(I,[1 4]);
IblurY2 = imgaussfilt(I,[1 8]);
figure
subplot(221);
imshow(IblurX1);
title('Smoothed image,  \sigma_x = 4, \sigma_y = 1');
subplot(222);
imshow(IblurX2);
title('Smoothed image,  \sigma_x = 8, \sigma_y = 1');
subplot(223);
imshow(IblurY1);
title('Smoothed image,  \sigma_x = 1, \sigma_y = 4');
subplot(224);
imshow(IblurY2);
title('Smoothed image,\sigma_x = 1, \sigma_y = 8');
```

OUTPUT:

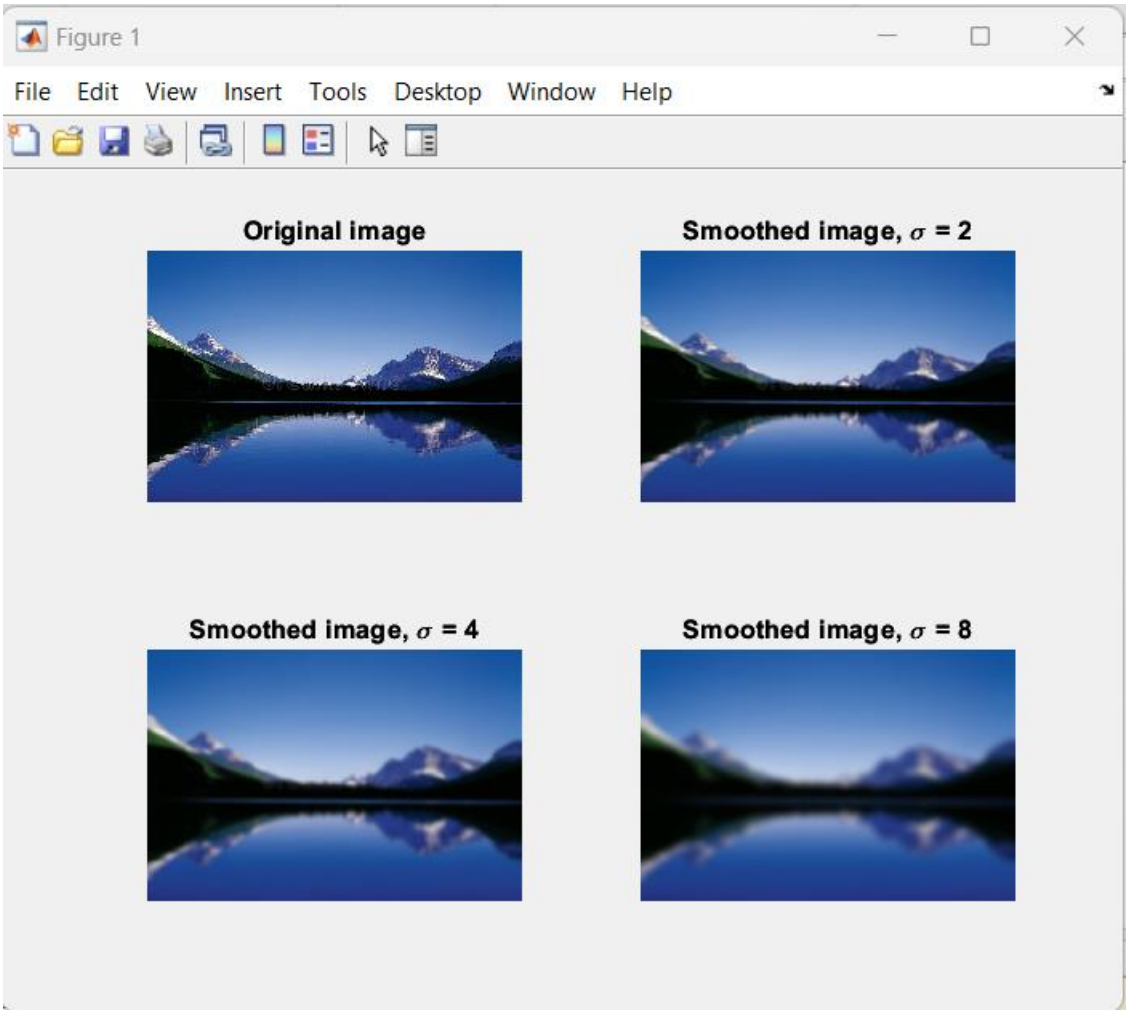
Figure 1
File Edit View Insert Tools Desktop Window Help
Original image
Smoothed image, σ = 2
Smoothed image, σ = 4
Smoothed image, σ = 8

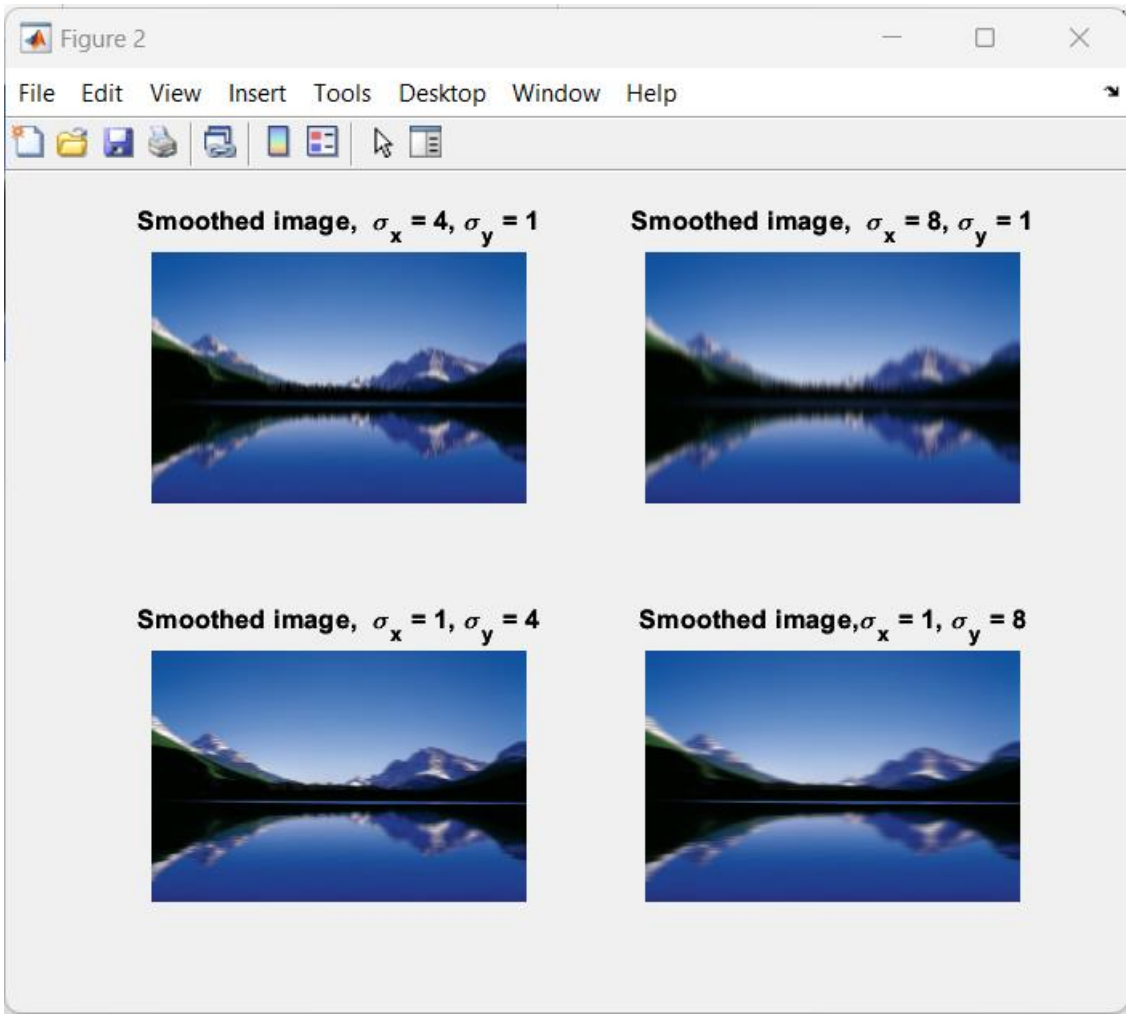
Figure 2
File Edit View Insert Tools Desktop Window Help
Smoothed image, σ_x = 4, σ_y = 1
Smoothed image, σ_x = 8, σ_y = 1
Smoothed image, σ_x = 1, σ_y = 4
Smoothed image,σ_x = 1, σ_y = 8