MATLAB Implementation

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Course Code: Image Processing and Analysis

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Task 1

Discuss the working of ordfilt2 in details along with the matlab example.

ordfilt2

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Ordfilt2 is used for order-statistics filtering of two dimensional images. It is an estimator of mean of X which uses a linear combination of statistics.
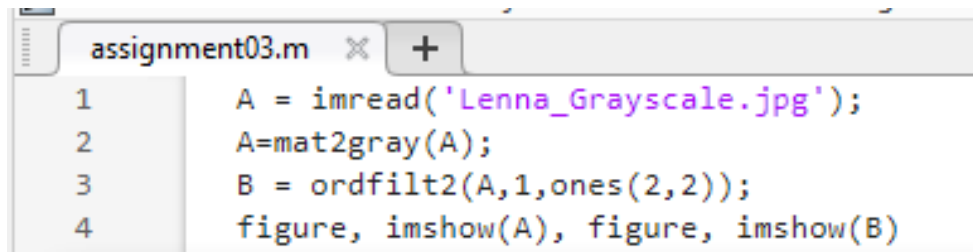
Explanation:

The syntax of ordflit2 is given below:

A = ordfilt2 (image, order, domain)

- Image: input image
- Order: which order of the sorted intensity (minimum to maximum value) taken as output.
- Domain: matrix indicating the neighborhood.
  - 1 : Pixels in neighbor
  - 2 : Pixels not in neighbor

The above function replaces each element in image by the order element in the sorted set of neighbors which is specified by the elements in domain that are non-zero.

For example:

```
assignment03.m    +
1        A = imread('Lenna_Grayscale.jpg');
2        A=mat2gray(A);
3        B = ordfilt2(A,1,ones(2,2));
4        figure, imshow(A), figure, imshow(B)
```

In above example, B = ordfilt2 (A, 1, ones (2, 2)). Ordfilt2 will move over the 2d array A in blocks of the same size as ones (2, 2). For each of these 2x2 blocks, sort all the elements from smallest to largest. Now fill in the corresponding block in B with a bunch of copies of the 1st smallest element.