Task 6- Spatial Filtering

(17th of November, 2022)

Statement:

Using the GUI you created in assignment 1, after browsing for an image you are required to:

1. **Display the image**
2. **Perform un-sharp masking**
   a. You will need to create a box filter. Kernel size: USER INPUT
   b. You will need to implement a 2D convolution function that convolves the kernel with the image (from scratch). Note: Use padding
   c. You will need to subtract blurred image from original
   d. The result of 'c' will be multiplied by a factor K: USER INPUT. Then added to the original image
   e. The result of d is the enhanced image
3. **Display enhanced image**

Note: The result can have negative values; you should implement a scaling function so the displayed result will be in the range 0-255 for an 8-bit image.

Bonus: Add salt and pepper noise to the image, display the noisy image, then use the proper spatial filter to remove the noise and display the de-noised image.

Deadline: 04:00 AM, Thursday, 24th of November, 2022

Policy: Individual Task