Moving Average Filter Exercise

Topic: The moving average filter is a very simple lowpass filter that is very common in noise reduction applications. It simply replaces each pixel's value with the average value of all the pixels in a neighborhood. It is very effective in removing Gaussian noise.

Exercise: Create a Python script file and perform the following tasks:

- Import OpenCV and NumPy libraries.
- Create a function that takes as input an image and the size of the moving average filter and performs moving average filtering on the image. Then, it returns the filtered image. It should use 0-padding in order to prevent the creation of black borders in the image. You can add any extra parameters you desire.
- Read an image.
- Corrupt the image with any type of noise you desire.
- Apply moving average filtering to the noise image.
- Finally, display the noise image alongside the filtered one.