HW： Blurring/Averaging a picture

In this homework, you are required to do the blurring/averaging a picture.

You can use the code from the homework: Convert color image to gray image.

The algorithm is as following:

Loop over every pixel, and replace its color by the average of the colors of the pixels in the predefined neighborhood.

You can define the neighborhood of a pixel by yourself, for example, a disk with a fixed radius (1, 2, 3, or even bigger) and centered at the pixel, or a square with a fixed width and centered at the pixel.

You can also add the weights for the averaging. The weights can be chosen from the Gaussian function: https://en.wikipedia.org/wiki/Gaussian_function, choose meaningful parameters for the Gaussian function by yourself.

You need to pay attention to the pixels close to the boundary of the image. Since their neighborhood may out of the boundary. Select a strategy for this case.

Select a color picture and test your serial code.

And then parallel your code by using OpenMP.

Test your code with different thread numbers and write a final report as what you did in previous homework.