Multiplicative Noise Exercise

Topic: Multiplicative noise, also known as speckle noise, refers to an unwanted random signal that gets multiplied into a signal during the capture, transmission, or processing process. It can be reduced by adaptive filters, which are better at preserving edges and details, as well as non-adaptive filters, such as the moving average and median filters, which are simpler and require less computational power.

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, creates a random noise signal, and multiplies it with the clean image. Then the noise image is returned. You can add any extra parameters you desire.
- Read an image.
- Corrupt the clean image with multiplicative noise.
- Finally, display the original image alongside the noise one.