Write a python code that depends on the OpenCV library and that performs all the methods of this lecture:

- 1. Point transformations
- 2. Local Transformations
- 3. Global Transformations: AHE, CLAHE, Histogram Equalization, Histogram Specification
- 4. Linear Filtering: Mean, Gaussian, Gradient, Laplacian, with applications.
- 5. Non-linear filtering: Min, Max, Median, and Mean Shift Filters.

Simulations should be conducted to evaluate (qualitative and quantitative) and compare the methods with various parameters.