Image Understanding and Processing (OpenCv-Python)

Lab Exercise – 09

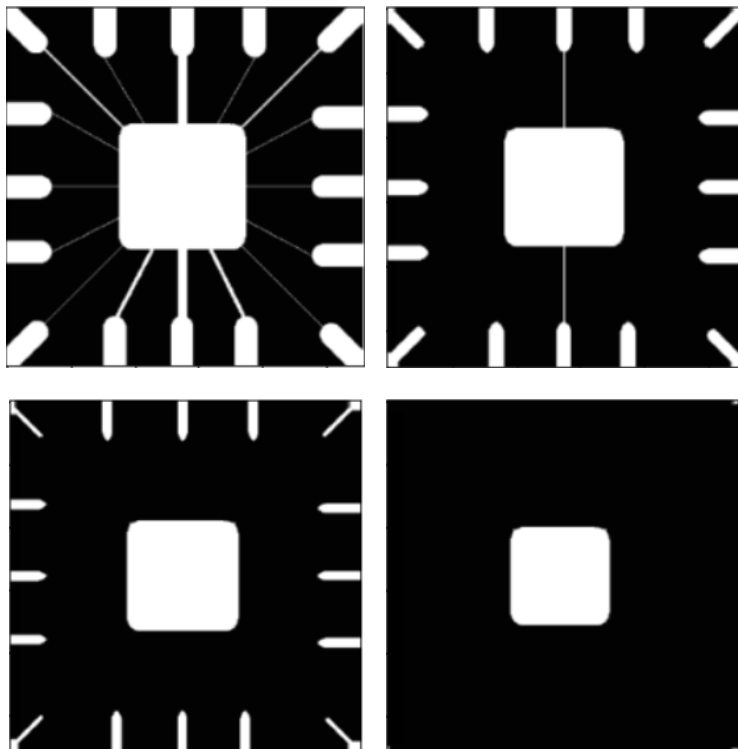**Year 4**   **Semester 1, 2024**

Goal

- Learn different morphological operations like Erosion, Dilation, Opening and Closing

Morphological transformations are some simple operations based on the image shape. It is usually performed on binary images. It needs two inputs: the original image and the structuring element or kernel, which decides the nature of the operation. Two basic morphological operators are Erosion and Dilation.

1. Erosion - generally decreases the sizes of objects and removes small anomalies by subtracting objects with a radius smaller than the structuring element.

2. Dilation - generally increases the sizes of objects, filling in holes and broken areas, and connecting areas that are separated by spaces smaller than the size of the structuring element.

3. Opening - Opening is just another name of erosion followed by dilation. It is useful in removing noise.

4. Closing - Closing is reverse of Opening, Dilation followed by Erosion. It is useful in closing small holes inside the foreground objects, or small black points on the object.

5. Removing irrelevant details – Try to obtain the outputs below.