**Adaptive thresholding** is a method used in image processing to create a binary image (black and white) based on the local content of the image. Unlike a global thresholding approach where a single threshold value is applied to the entire image, adaptive thresholding adjusts the threshold for each pixel based on the surrounding neighbourhood pixels. This allows for better handling of variations in lighting and contrasts, especially in images with non-uniform illumination or varying regions.

How I plan to implement

Input file- get an image from folder (path will be specified in config file)

Convert the image into gray scale and store the converted version(processed image will be stored in a folder, path will be specified in config file)

For gray scale conversion, we will iterate through each pixel and combining the R, G, and B channels into a single intensity value using the weighted sum: 0.3 \* R + 0.59 \* G + 0.11 \* B

Each pixel's grayscale value is compared against a threshold value. We will consider adaptive threshold to be 125 for now. (pixels range from 0 to 255, so 125 is somewhere in between)

If the pixel's value is greater than the threshold, it is set to white otherwise black