DHA – Digital Image Processing

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Q. Perform the elementary operations on your image and describe the basic operation performed.

Ans. For this assignment, I have used the OpenCV library and have written the code in Python. I have used the thresholding function for converting my image into binary and into inverse of binary. The function used is **cv2.threshold**. First argument is the source image, which should be a grayscale image. Second argument is the threshold value which is used to classify the pixel values. Third argument is the maxVal which represents the value to be given if pixel value is more than (sometimes less than) the threshold value.

The thresholding has been done based on the following scheme,

THRESH_BINARY Python: cv.THRESH_BINARY	$\texttt{dst}(x,y) = \begin{cases} \texttt{maxval} & \text{if } \texttt{src}(x,y) > \texttt{thresh} \\ 0 & \text{otherwise} \end{cases}$
THRESH_BINARY_INV Python: cv.THRESH_BINARY_INV	$\texttt{dst}(x,y) = \begin{cases} 0 & \text{if } \texttt{src}(x,y) > \texttt{thresh} \\ \texttt{maxval} & \text{otherwise} \end{cases}$

The graphs representing the thresholding operation are as follows,