

Image Thresholding

- In digital image processing, thresholding is the simplest method of segmenting images.
- The simplest thresholding methods replace each pixel in an image with a black pixel if the image intensity $I_{i,j}$ is less than some fixed constant T (that is, $I_{i,j} < T$), or a white pixel if the image intensity is greater than that constant. In the example image on the right, this results in the dark tree becoming completely black, and the white snow becoming completely white



**ALL THE NUMBERS IN THE
ORIGINAL IMAGE HAVE A
GRAYSCALE VALUE EQUAL TO THE
VALUE OF THE NUMBER. SO, '255'
IS THE BRIGHTEST AND '5' THE
DARKEST.**

IMPORTING IMAGE

```
▶ import cv2
```

```
▶ import numpy as np
```

```
▶ src = cv2.imread("D:/Kriti Banka/threshold.png", cv2.IMREAD_GRAYSCALE)
```

IMPORT CV2

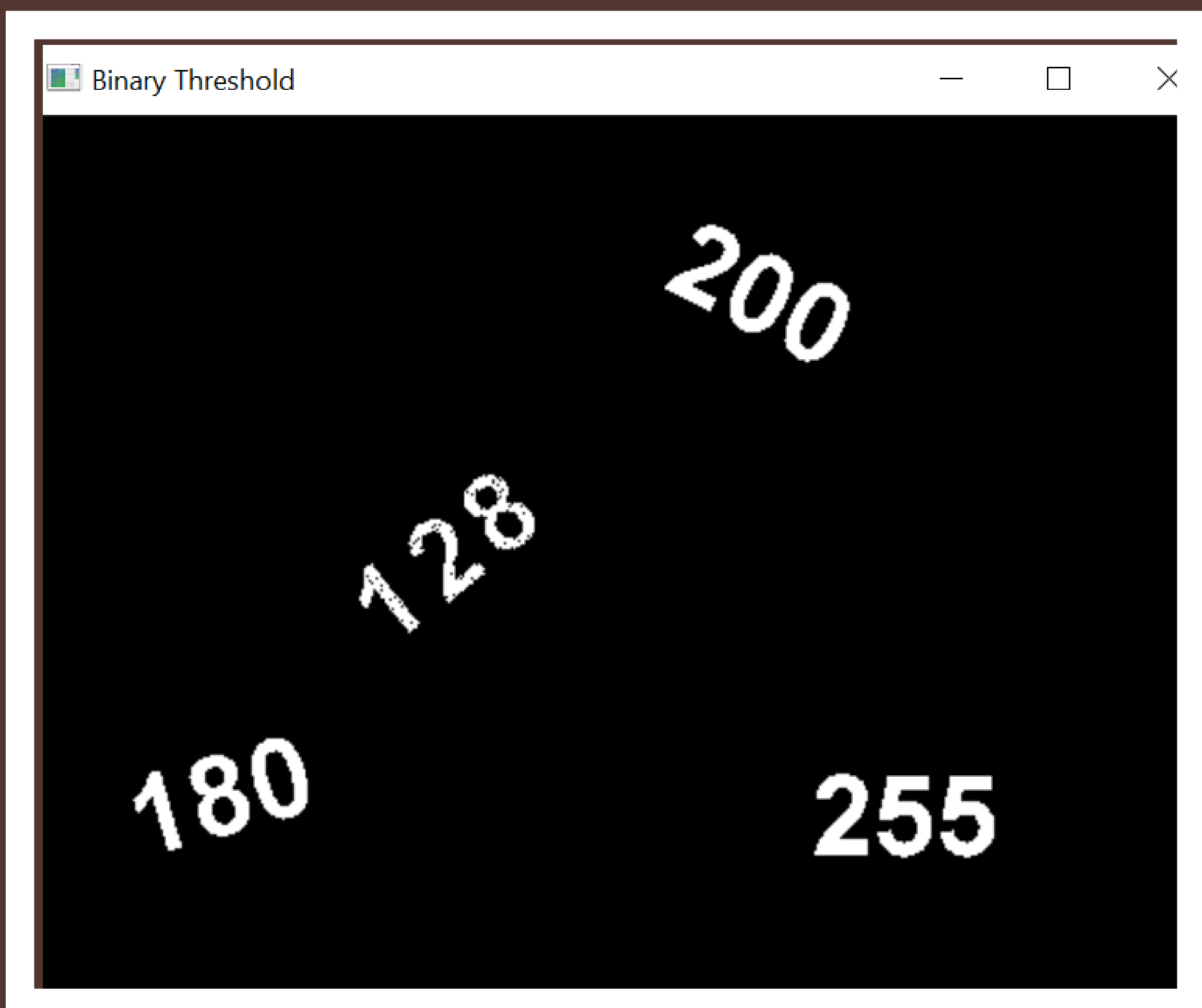
IMPORT NUMPY AS NP

SRC =

CV2.IMREAD("D:/KRITI
BANKA/THRESHOLD.PNG",
CV2.IMREAD_GRAYSCALE)

BINARY THRESHOLDING (THRESH_BINARY)

IF PIXEL INTENSITY IS
GREATER THAN THE SET
THRESHOLD, VALUE SET TO
255, ELSE SET TO 0 (BLACK).

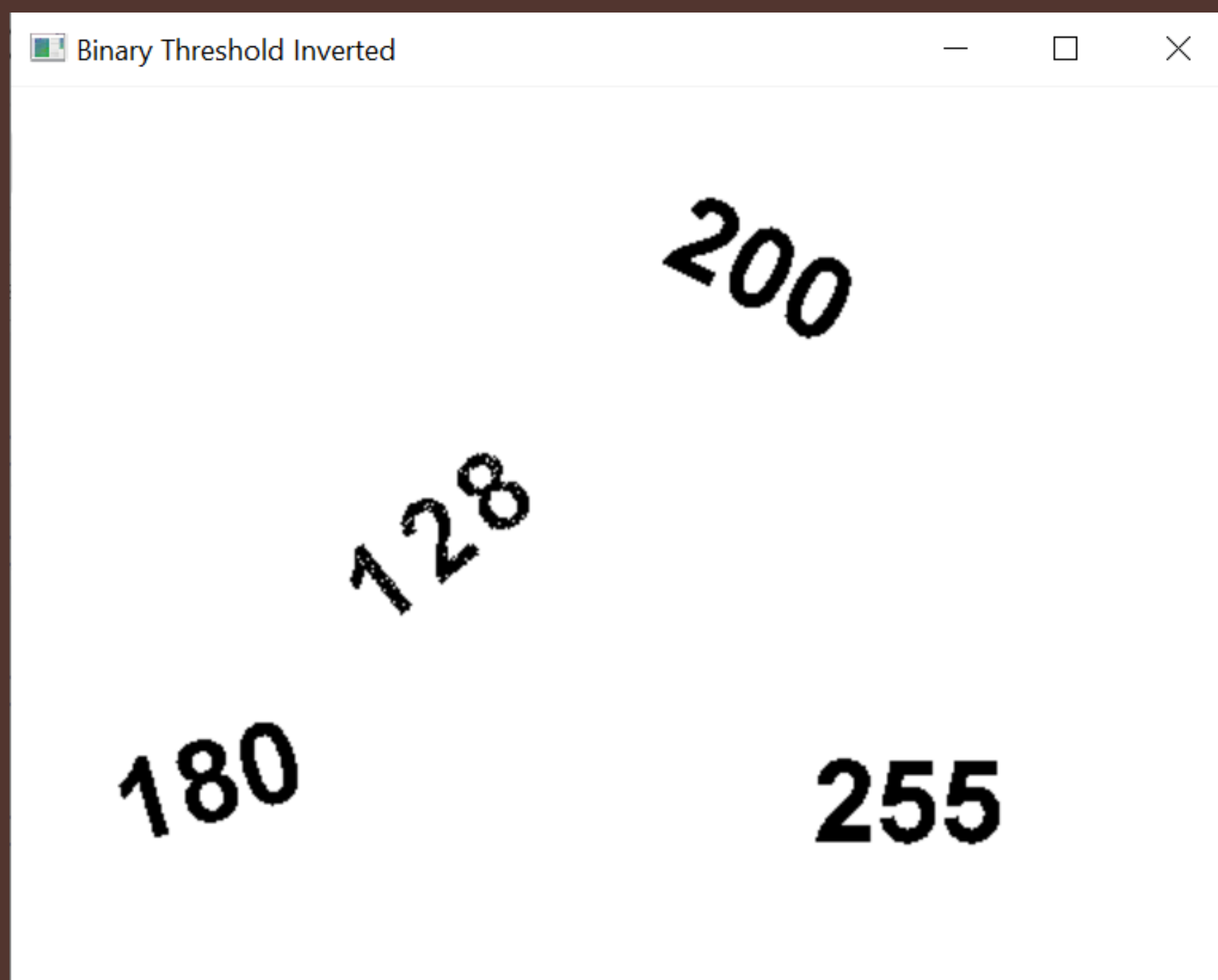


INVERSE-BINARY THRESHOLDING (THRESH_BINARY_INV)

**INVERSE-BINARY THRESHOLDING IS
JUST THE OPPOSITE OF BINARY
THRESHOLDING. THE DESTINATION
PIXEL IS SET TO:**

**ZERO, IF THE CORRESPONDING
SOURCE PIXEL IS GREATER THAN THE
THRESHOLD**

**MAXVALUE, IF THE SOURCE PIXEL IS
LESS THAN THE THRESHOLD**

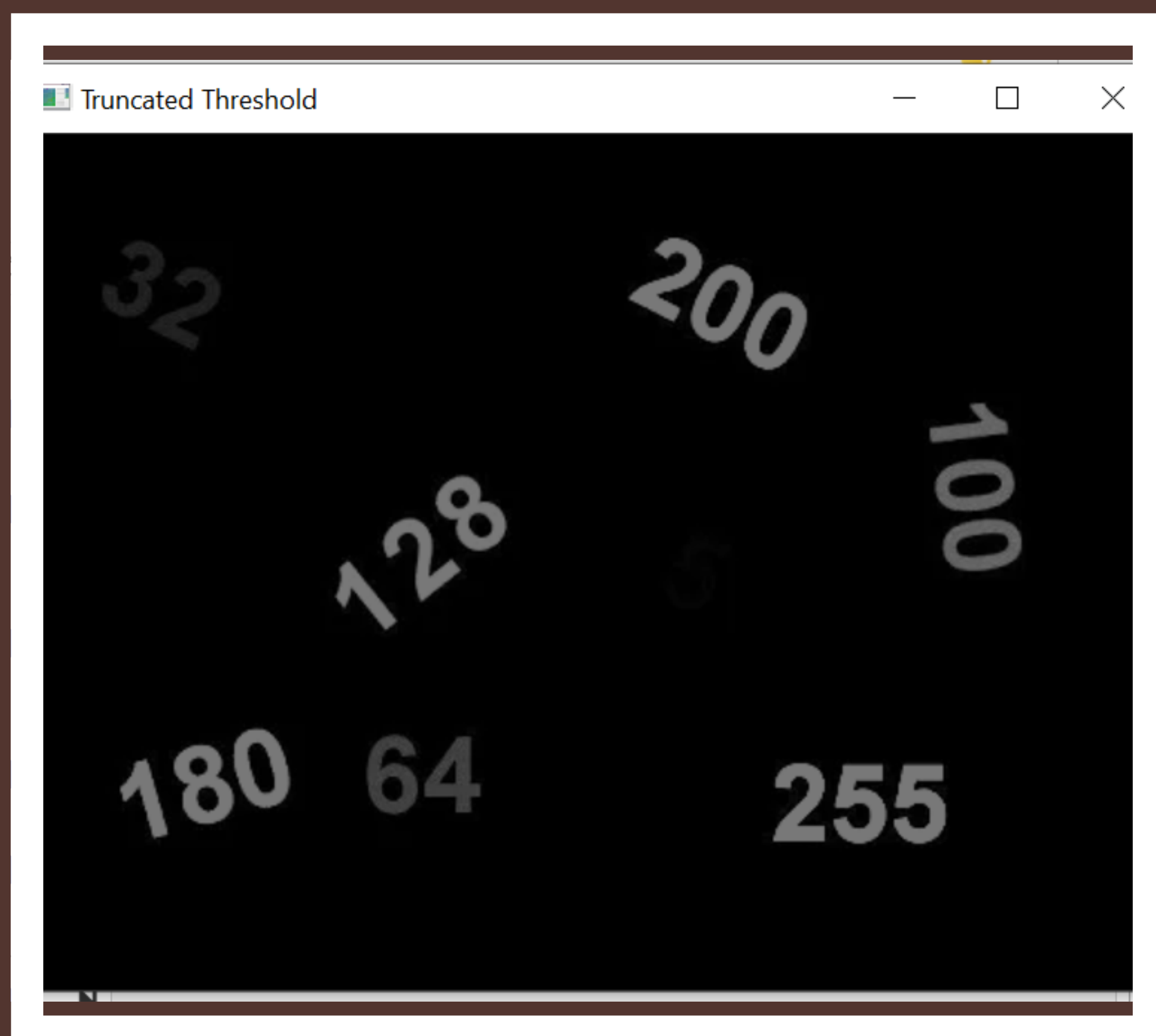


TRUNCATE THRESHOLDING (THRESH_TRUNC)

THE DESTINATION PIXEL IS SET TO THE THRESHOLD (THRESH), IF THE SOURCE PIXEL VALUE IS GREATER THAN THE THRESHOLD.

OTHERWISE, IT IS SET TO THE SOURCE PIXEL VALUE

THE MAXVALUE IS IGNORED

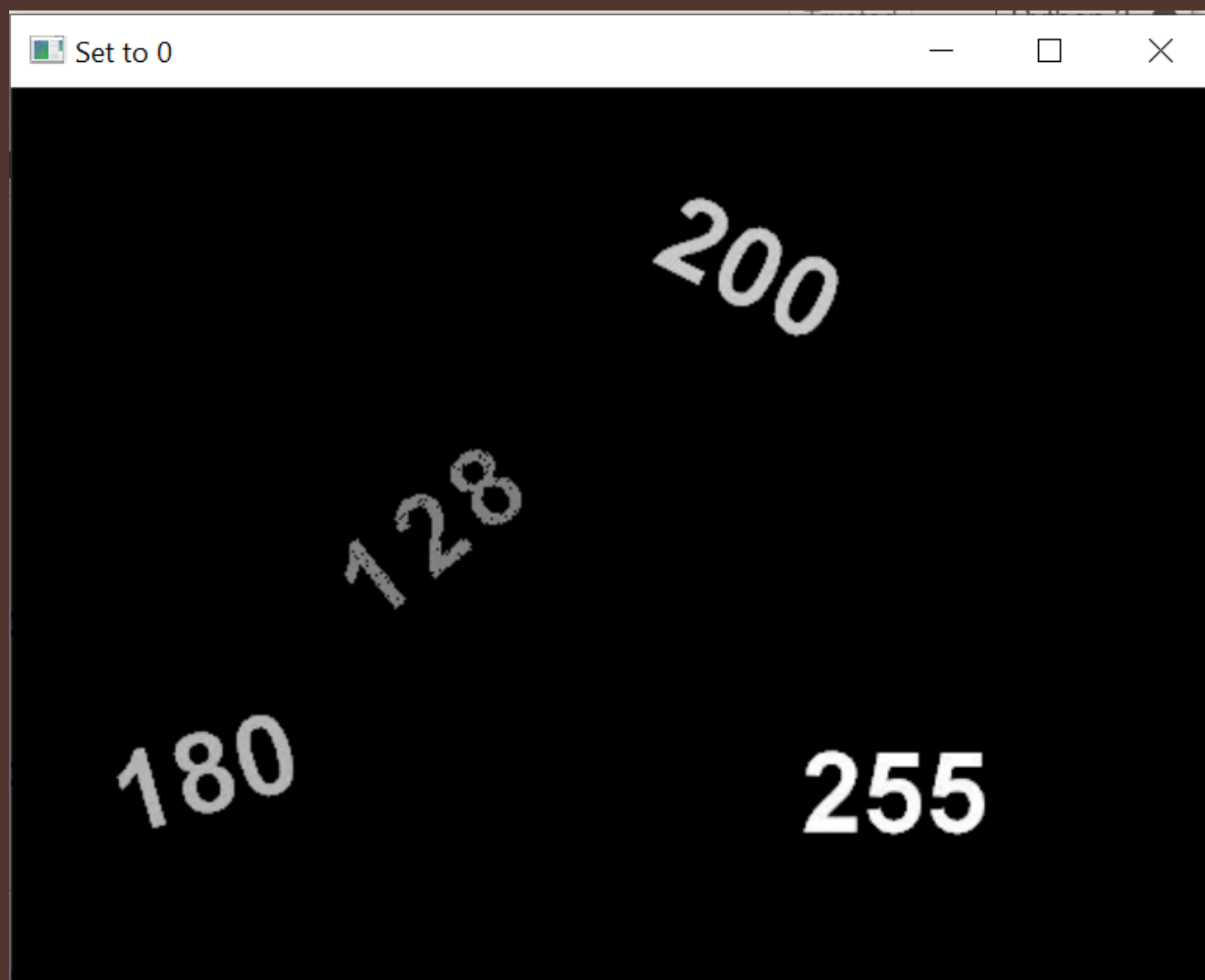


THRESHOLD TO ZERO (THRESH_TOZERO)

THE DESTINATION PIXEL VALUE IS SET TO THE PIXEL VALUE OF THE CORRESPONDING SOURCE , IF THE SOURCE PIXEL VALUE IS GREATER THAN THE THRESHOLD.

OTHERWISE, IT IS SET TO ZERO

THE MAXVALUE IS IGNORED



INVERTED THRESHOLD TO ZERO (THRESH_T0ZERO_INV)

THE DESTINATION PIXEL VALUE
IS SET TO ZERO, IF THE SOURCE
PIXEL VALUE IS GREATER THAN
THE THRESHOLD.

OTHERWISE, IT IS SET TO THE
SOURCE PIXEL VALUE

THE MAXVALUE IS IGNORED

