Lab 1. Preparation tasks
Template for answers

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Version (in case you need to re-submit): 1

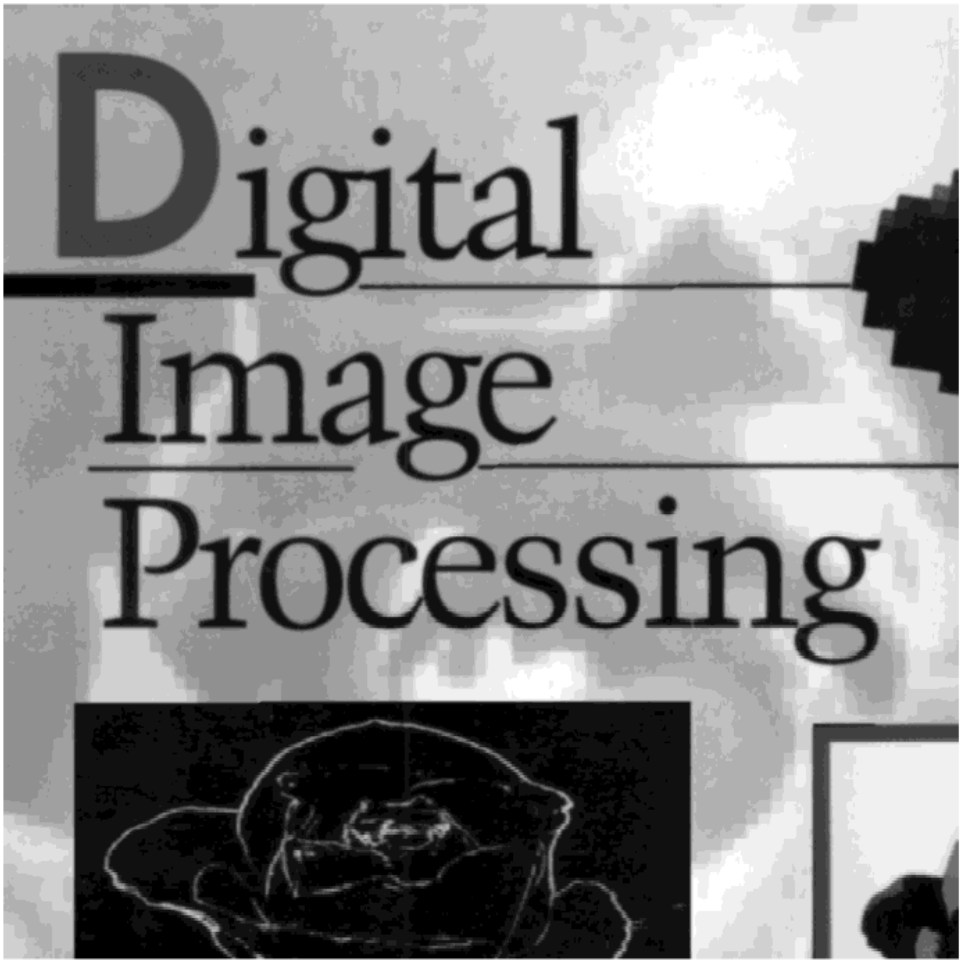
1. Basic image operations and data types

1 A) What is the highest pixel value in the image?
max(Image(:)) = 253

1 B) What is the maximum value for `Image2`?
max(Image2(:)) = 16

1 C) What do you see if you display `Image2`?
A very dark version of the first image

1 D) Image3:



1 E) How many gray levels does `Image3` have?
Using: amounteGreyLevels1 = numel(unique(Image3)) we get 17 different greylevels
1 F) Explain what has happened to the image after these operations!
After the operations, Image3 is a version of the original image where the intensity levels were altered, then approximated back with fewer unique gray levels than the original

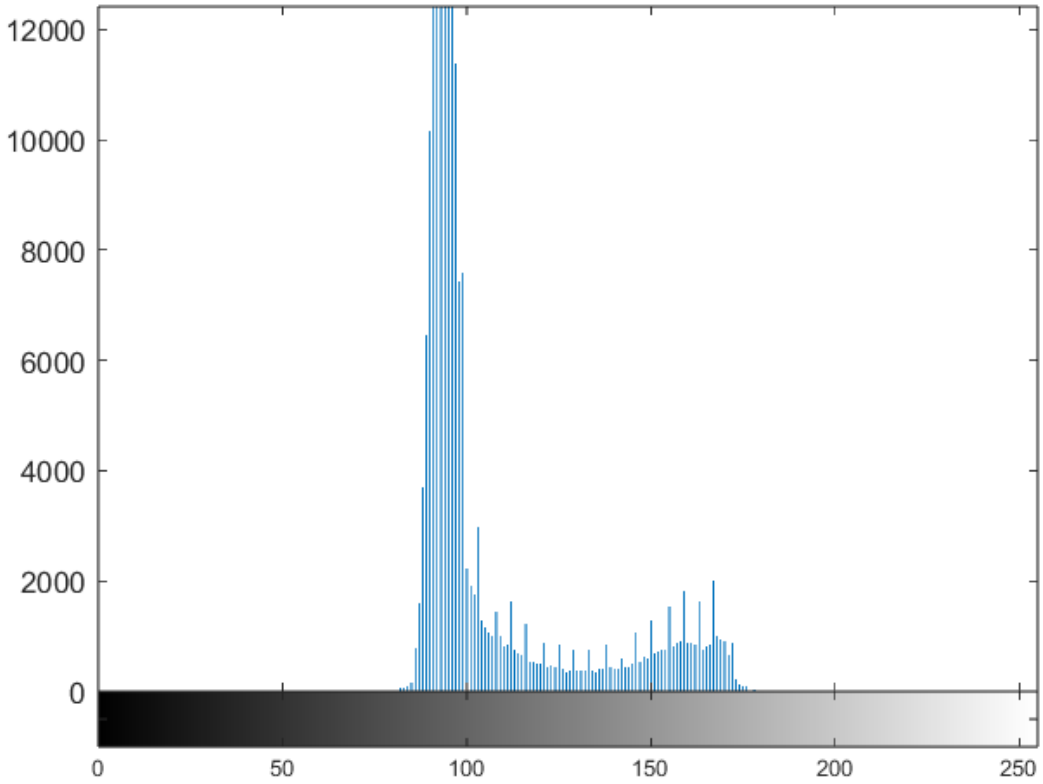
1 G) Explain the difference between using `uint8` images and `double` images in this task.
More precision in the image when using double, though larger file-size.

1 H) Which class (data type) should you make sure to use when applying such operations to images?
double

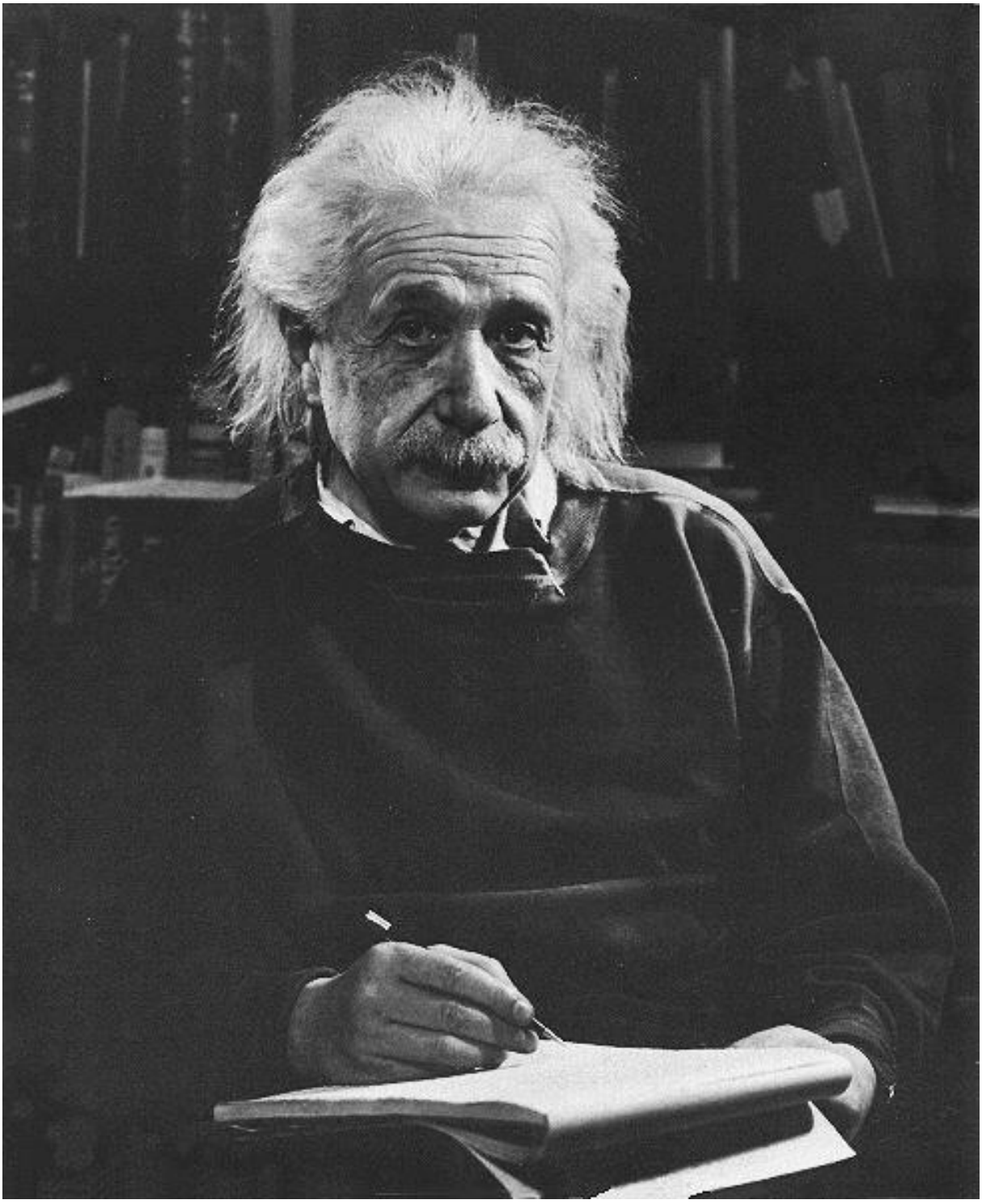
2. Contrast stretching and image histogram

2 A) What is the max- and min- values for the image?
Max = 0.6980, Min = 0.2902

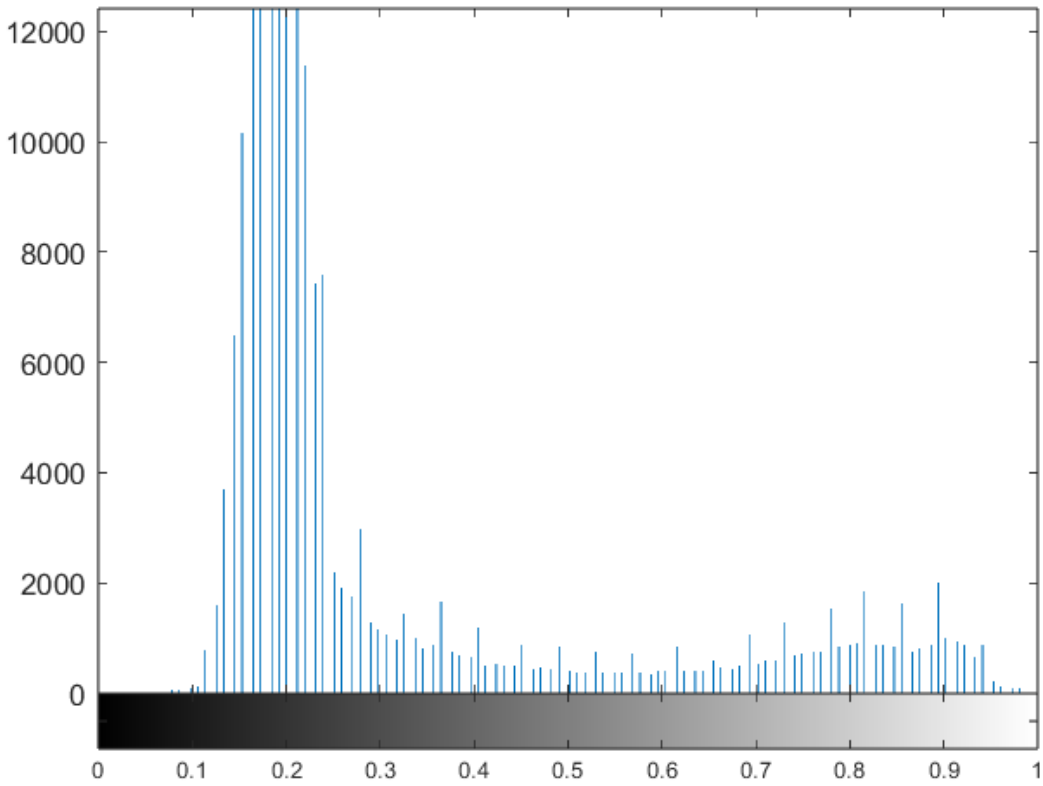
2 B) Histogram:



2 C) Resulting image after contrast stretching:

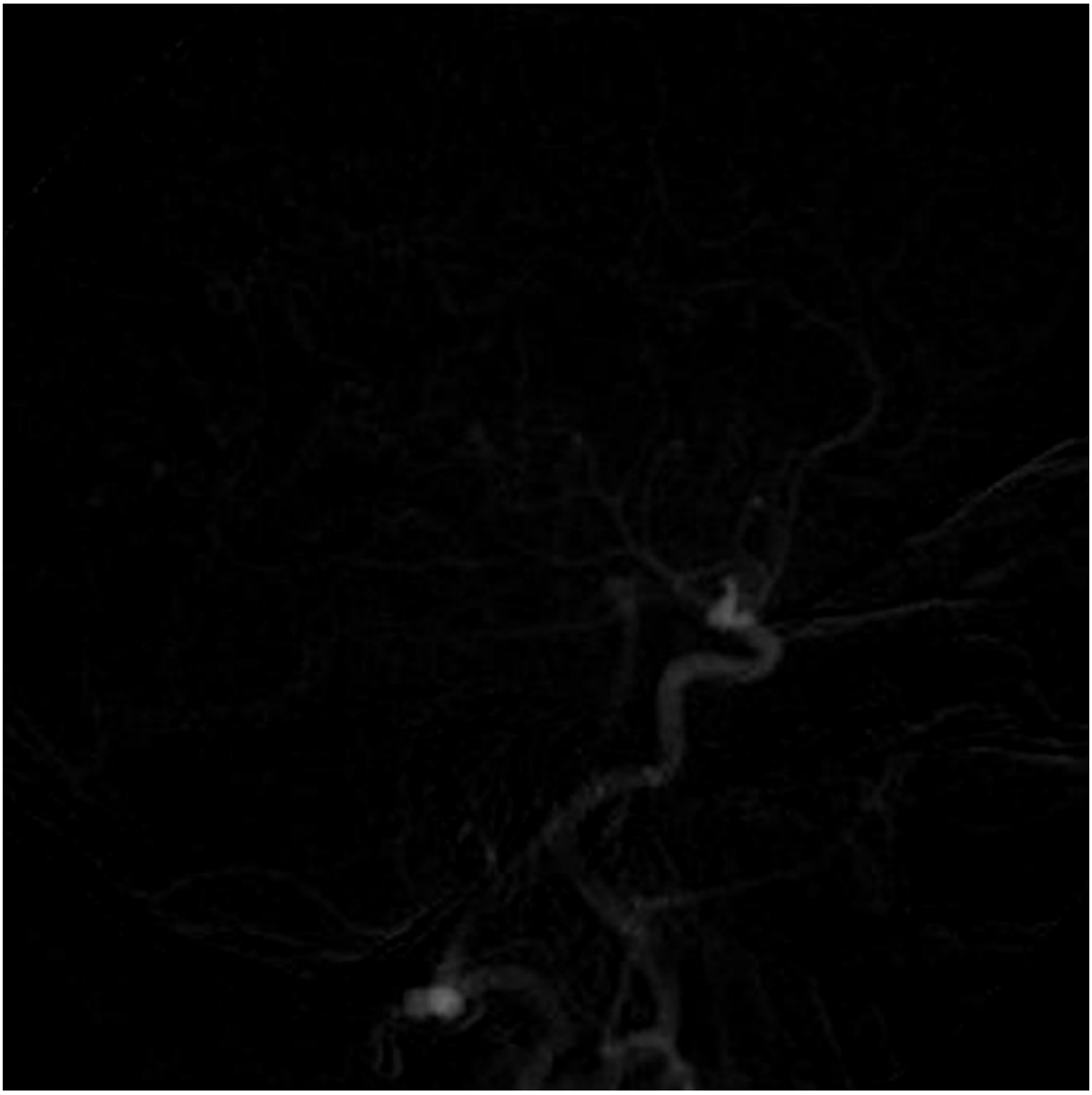


2 D) What will the max- and min- values be for the stretched image?
min = 0, max = 1
2 E) Histogram for the stretched image:



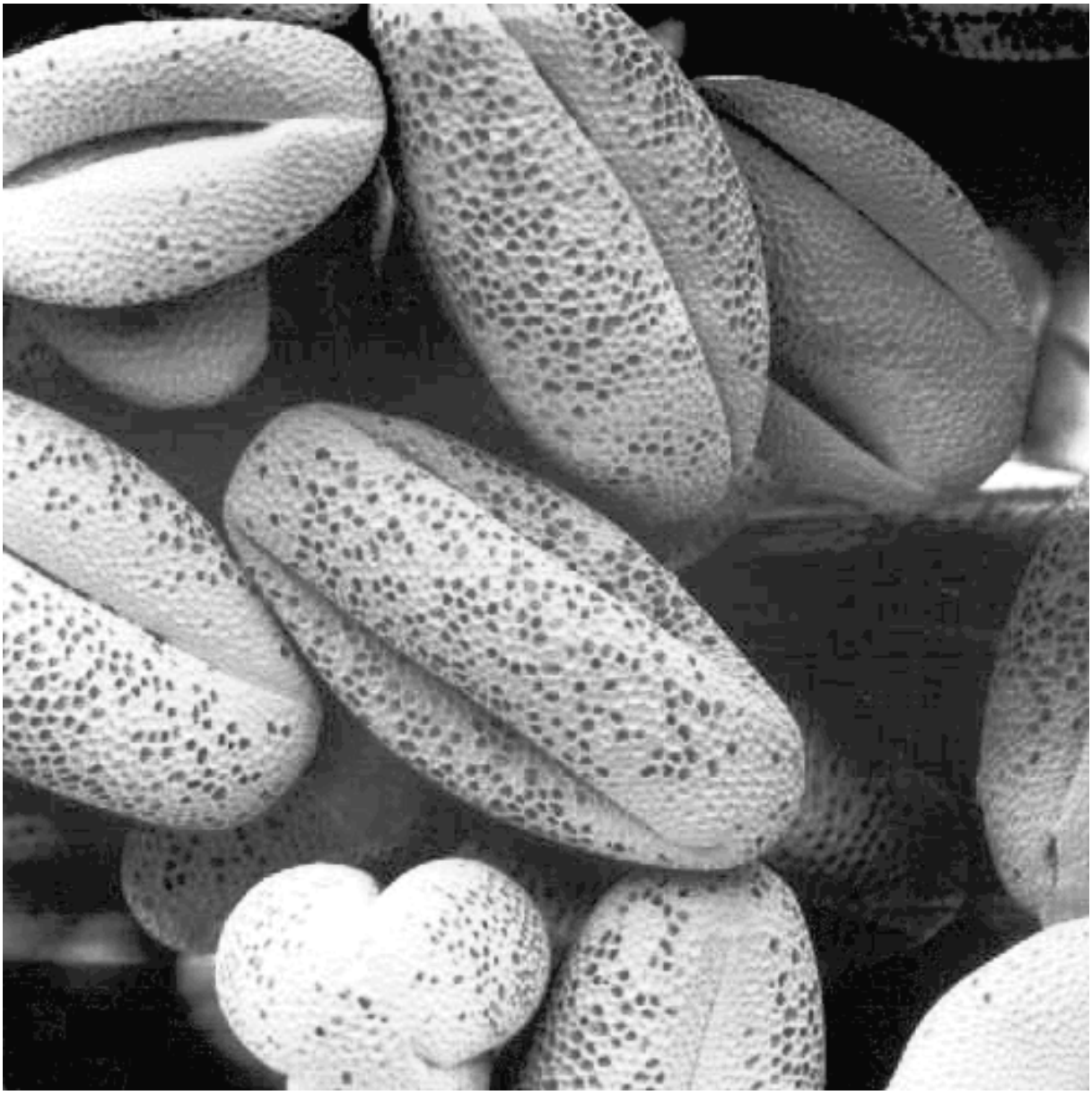
3. Image subtraction

3 A) Enhanced difference image:

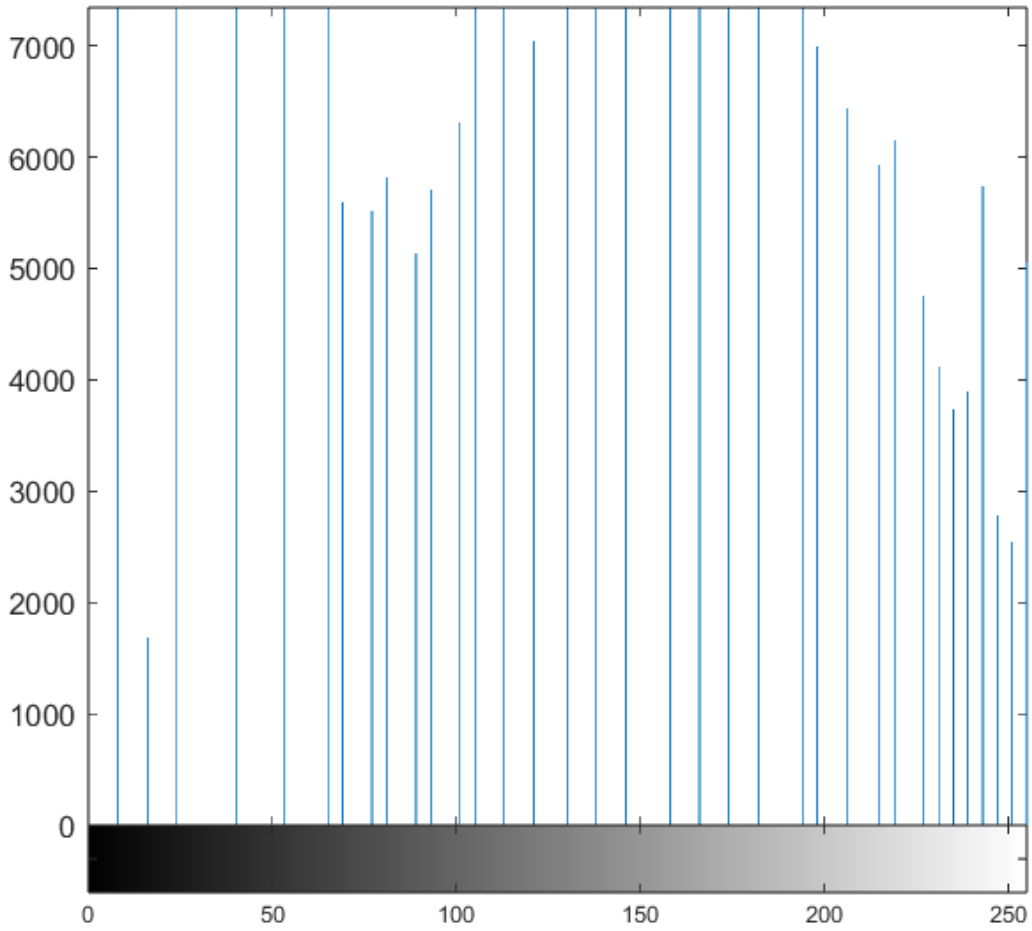


4. Histogram equalization

4 A) Equalized image:

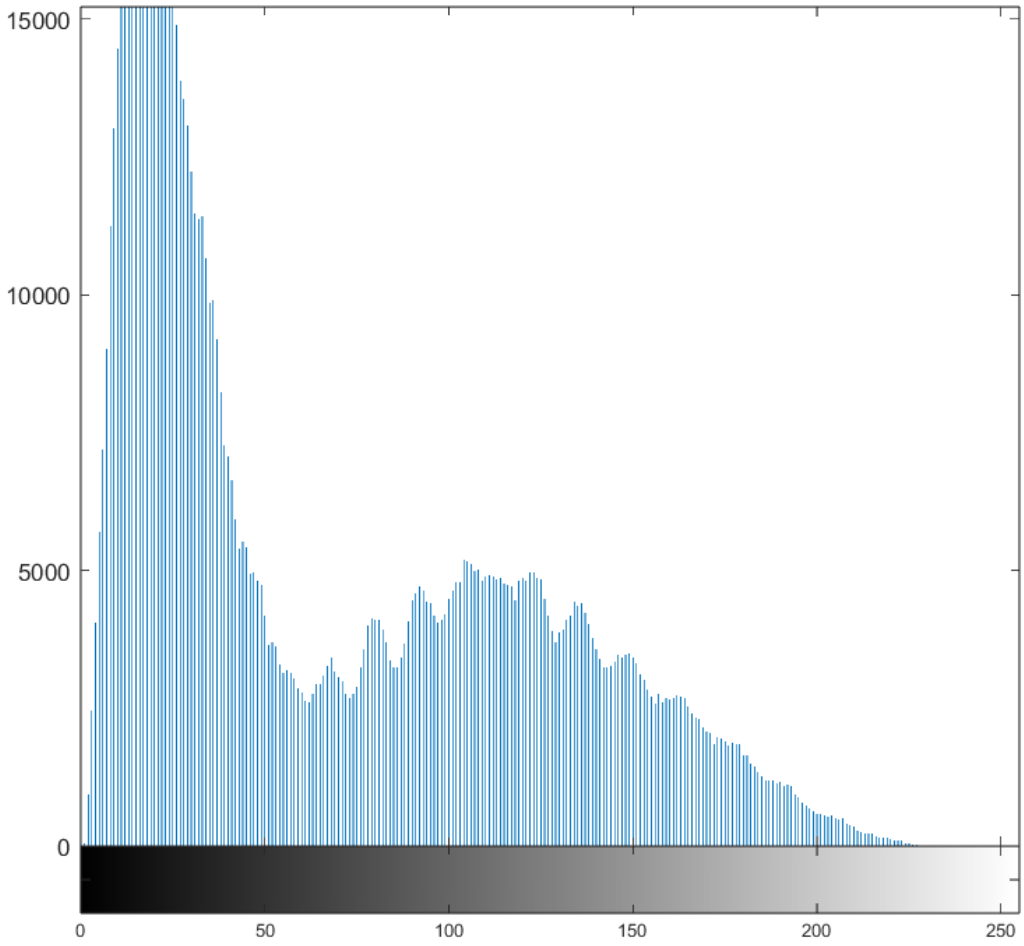


4 B) Histogram for the equalized image:

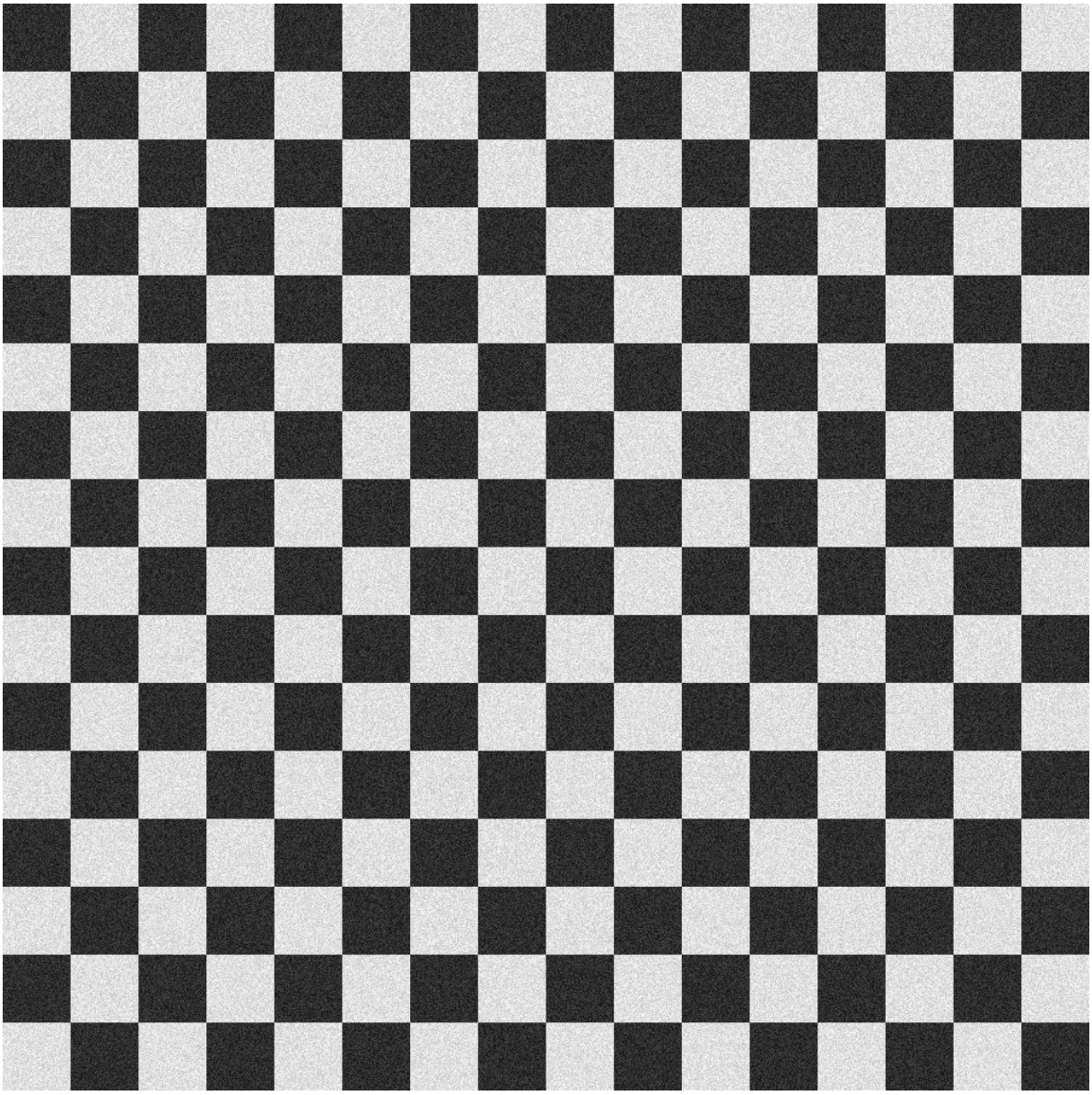


5. Image division and shading correction

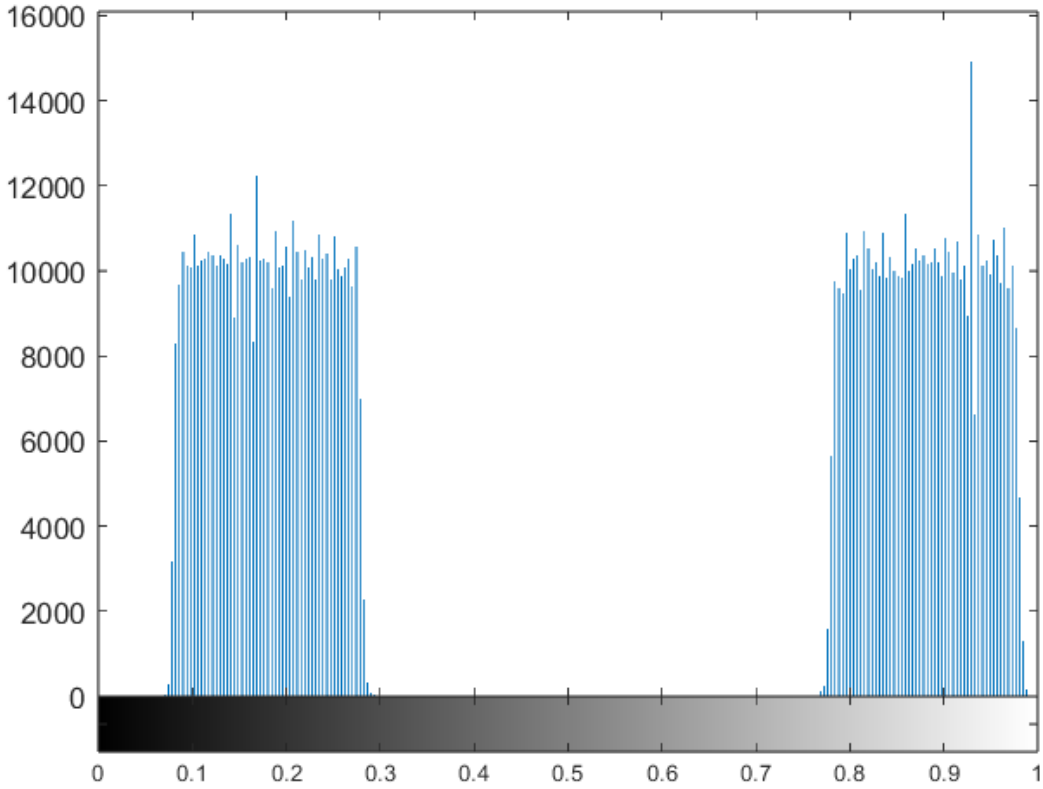
5 A) Histogram image:



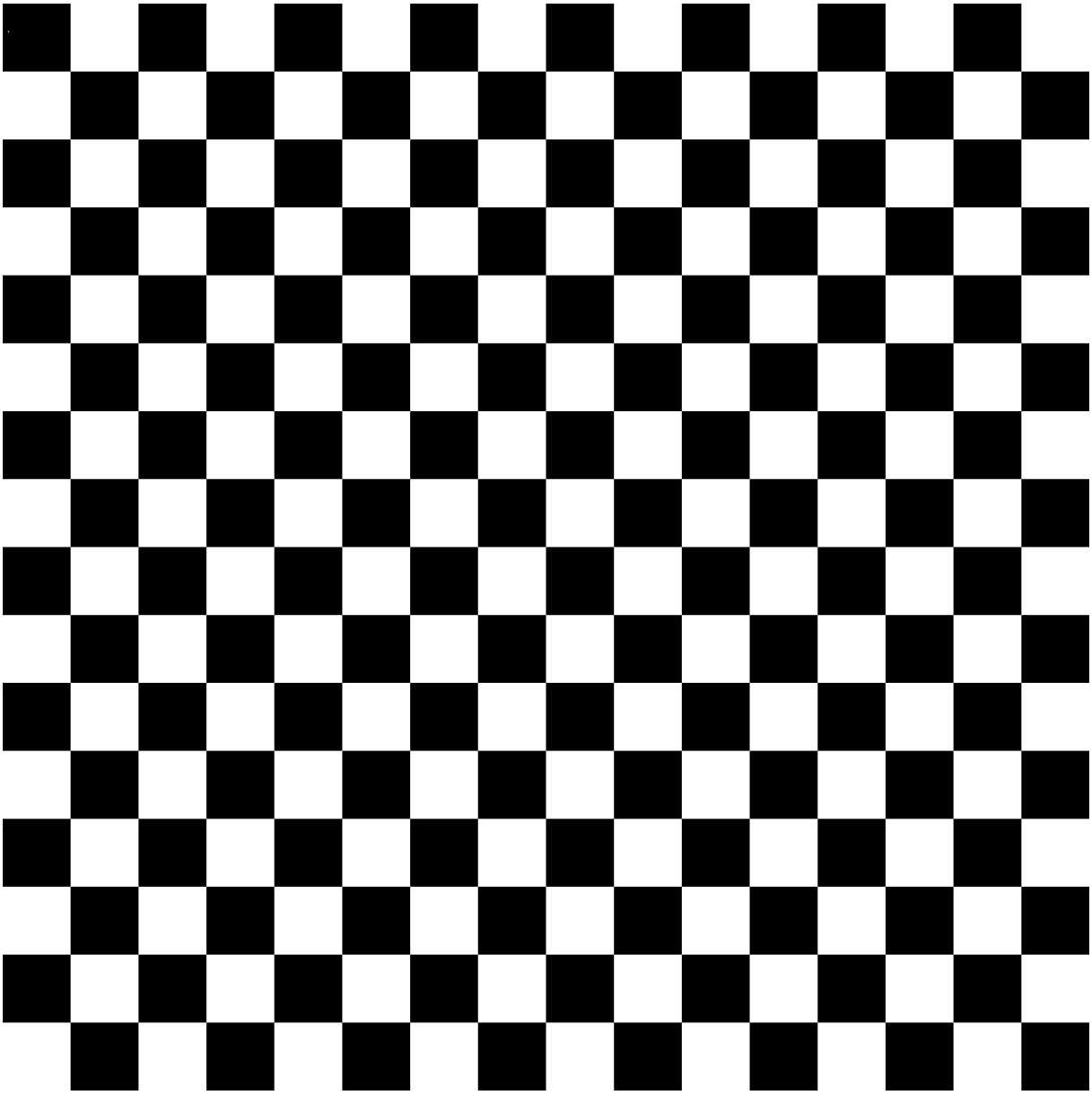
5 B) Is it possible to find a global threshold to segment this image (look at the histogram)?
Nope, no clear threshold
5 C) Recovered image:



5 D) Histogram of recovered image:



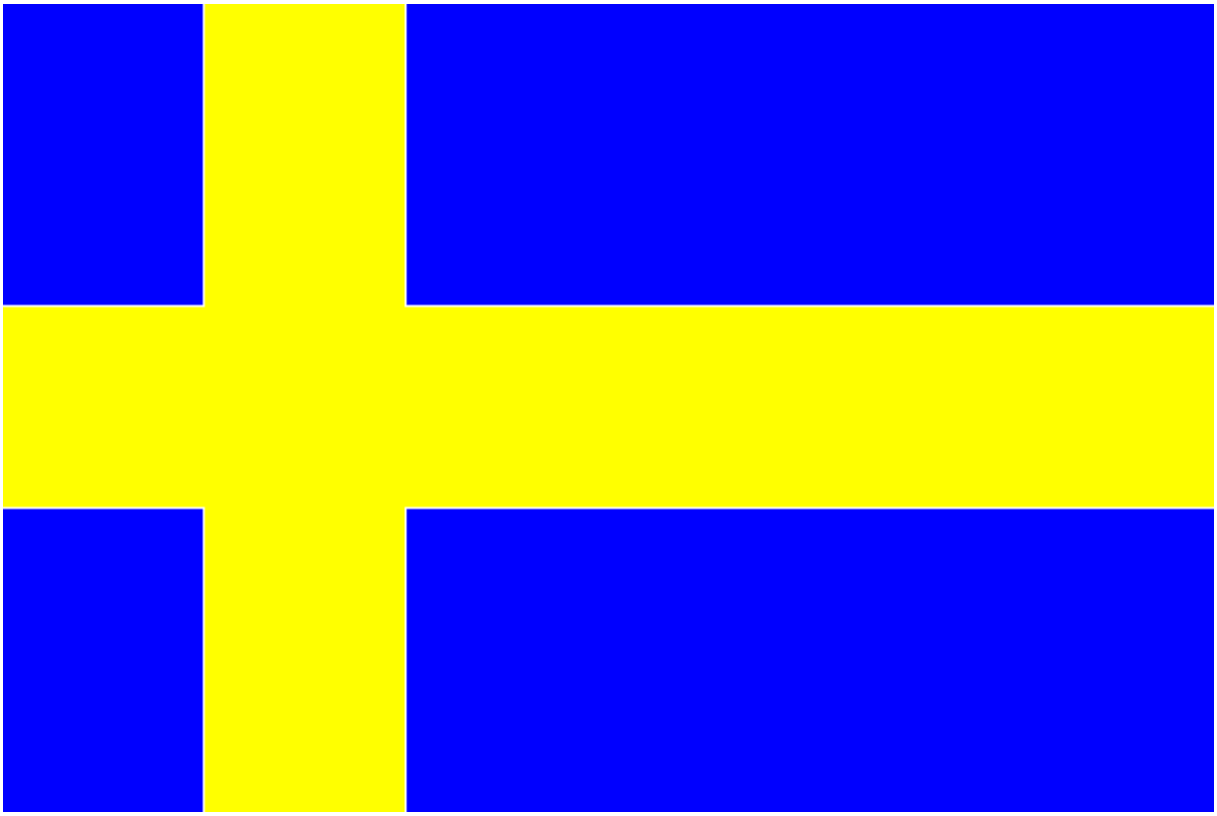
5 E) Segmented image:



5 F) What is the data type (class) for the segmented image?
logical
5 G) How many bits (per pixel) is required to store this type of image?
bits = (1024*1024)/1048576 = 1

6. RGB-images and indexing

6 A) Image of Swedish flag:



Save the document as .pdf before submitting!