Assignment - 0

- Image Manipulation
    1. Merging
    2. Scaling
    3. Intensity Centralization

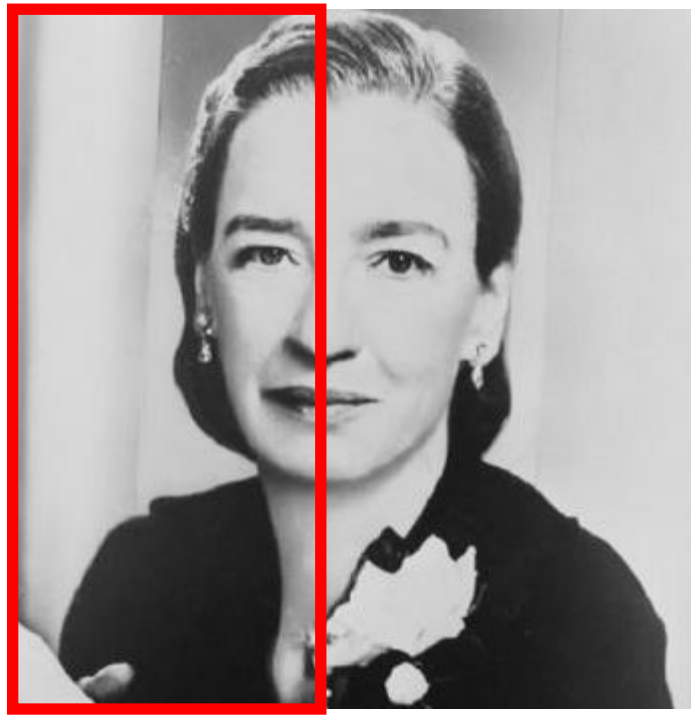
Merging

- Merge two images horizontally to create a new image.
- Input:
  - Image left
  - Image right
  - Column at which to merge the images

Column = 155

Image left

Image right



Output

Intensity Scaling

- Scaling: multiply each pixel in the image using a constant value called as scaling factor. Scaling factor is a value between *0 and 1*.
- Input:
  - Image
  - Column at which left section ends and right section begins
  - Scaling factor for left section (alpha)
  - Scaling factor for right section (beta)

Column = 155

(left image) * alpha(0.25)

(right image) * beta(0.9)

Output

Intensity Centralization

- The two images can have very different overall brightness values.
- The goal is to make sure that the average intensities of the left section and the right section are equal and centralized (= ~128).
- After centralizing pixels, the average of all the pixels in the left section and right section will be ~128
- Input:
  - Image
  - Column at which left section ends and right section begins

Column = 155

1. Compute average intensity of left pixels (m_l)
2. Compute offset. ($o_l = 128 - m_l$)
3. For each pixel $I(x, y)$ in the left section add the offset. ($I(x, y) + o_l$)

1. Compute average intensity of right pixels (m_r)
2. Compute offset. ($o_r = 128 - m_r$)
3. For each pixel $I(x, y)$ in the right section add the offset. ($I(x, y) + o_r$)

Output

Assignment - 0

1. Merging (10 Pts.)
2. Intensity Scaling (10 Pts)
3. Intensity Centralizing (10 Pts)

Total: 30 Pts.

Submission Instructions

- Must use the **starter code** available in **Github**
- Submission allowed only through **Github**
- You will receive an email with invitation to join **Github** classroom
- Start by reading the **readme.md** file.
- Instructions are available here
- Github will **automatically** save the **last commit as a submission** before the deadline