Part B.2: Lab Report

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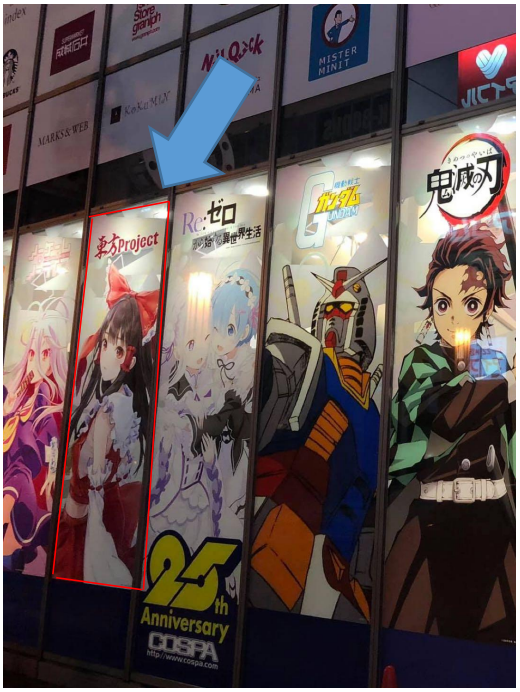
I used app/a1/a1_headless.py with code in picture1.txt to produce image1_output.png from the input picture image1.jpg. And coordinates of 4 corners of input image and output image are separately stored in image1_destination.csv and image1_source.csv.

Input picture: 1080 * 1440

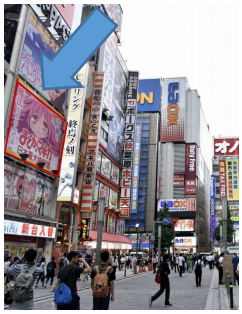
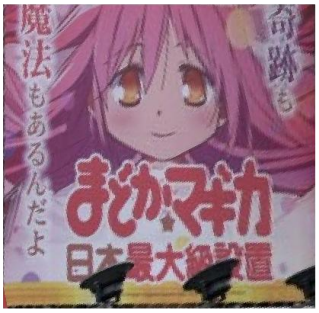
Operation:



Output picture:

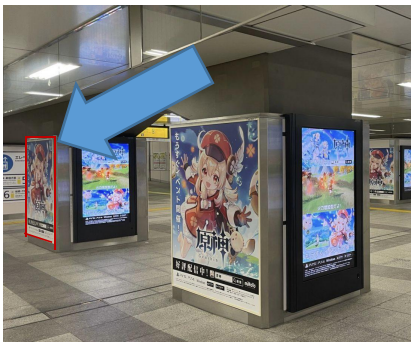
Similarly, I used app/a1/a1_headless.py with code in picture2.txt to produce image2_output.png from the input picture image2.jpg. And coordinates of 4 corners of input image and output image are separately stored in image2_destination.csv and image2_source.csv.

Input picture: Operation: Output picture:

Lastly, I used app/a1/a1_headless.py with code in picture3.txt to produce image3_output.png from the input picture image3.jpg. And coordinates of 4 corners of input image and output image are separately stored in image3_destination.csv and image3_source.csv.

Input picture: Operation: Output:


By overall experiment, I found my result pictures quite noisy and blur after backward mapping.
My guess is that the destination coordinates will control the size as well as the number of pixels within polygon formed by its four points. In this way, when convex polygon formed by destination coordinates is large or the part of the source photo we want to crop is too “sheared”, it is possible that there are duplicate pixels that “inherited” from the same pixel of the source picture.

From my understanding of the pictures and pixels, we don’t “round” the coordinate so quickly after backward transformation. We can locate which pixel that the transformed coordinates will belong to, and based on its float number, we can calculate the average color of a circle area (with a specific radius) surrounded to this “float coordinate”, in this way, even in the same pixel, it is also possible that two float coordinate inherited different rgb values. And our result could be more clear with this additional operation even though it could take much more time for a single picture.