

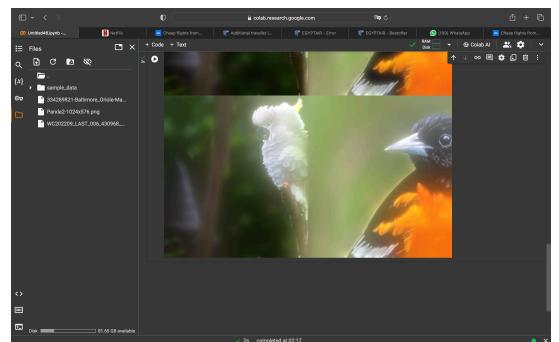
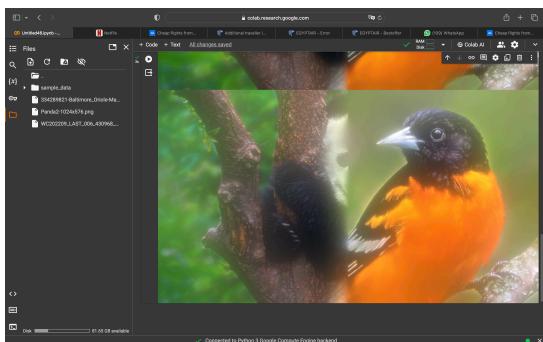
Image processing assignment 2 report

Explanation of Laplacian pyramid blending technique: it's a method used for blending two images smoothly where the pyramid is created by different levels ranging from low-frequency to the high-frequency by taking the difference between the downsampled and upsampled version of the image at each level. The blending process took place by first building a laplacian pyramid for each image and then combining both images by blending the corresponding levels at each pyramid together and then finally reconstructing the blended laplacian pyramid to obtain the final blended image.

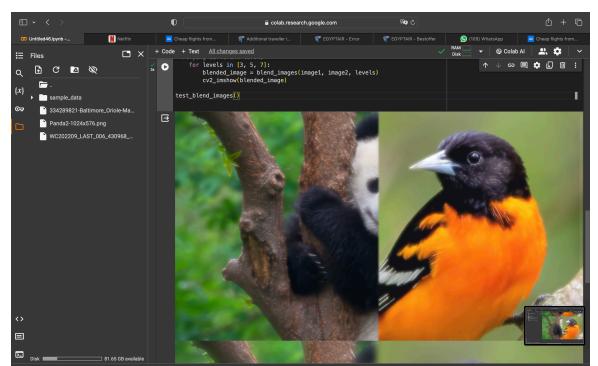
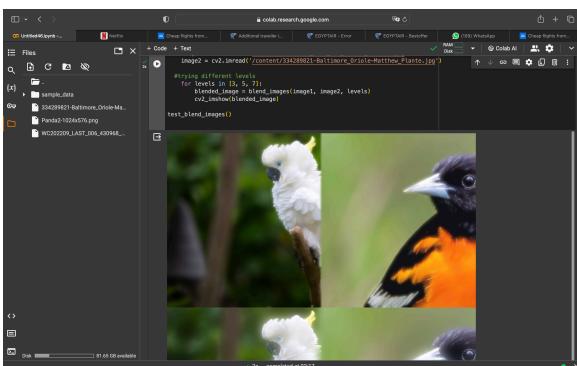
Description of the implementation: I started off by converting a gaussian pyramid by downsampling and smoothing each image and then creating the laplacian pyramid for each image separately that is obtained by taking the difference between consecutive levels of the Gaussian pyramid. Then moving on to the process of the reconstruction process that begins with index 0 at laplacian pyramid where each level is upsampled and added to the level that is from the previous iteration until the reconstruction of the original image. Finally the last step is the blending process where each image had to be divided first and then generate laplacian pyramid of both halves that I want them to be blended together and then the corresponding levels are blended together and then tested the blending with different numbers of levels such as 3 , 5 and 7 to observe the blending effect at each result depending on the number of levels.

Results obtained:

At Level 7 with different images:



At level 3 with different images:



Challenges faced: Handling images of different sizes

Solution: Resize images to match dimensions and handle aspect ratio differences through cropping the image