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Homework 4

1. The 2 images are of the same object - a rubik's cube. When blended together at the right location, the final image should show a single cube with a missing column.
2. The mask was created in Gimp, making sure to create the fading region along a common axis between the 2 images.
3. Function Docs:
 - a. **reduce**
Construct a kernel, convolves the given image with the kernel, and returns a downsampled matrix (factor of 2 in both dimensions).
 - b. **expand**
Creates a zero placeholder matrix, then iterates over all rows and columns. For each iteration block, every other row/column is set to that of the given image. This is convolved with a generated kernel. After a 4x scalar multiplication is applied (the expanded image has 4x the area, so it's values need scaling up in magnitude too), the results are returned.
 - c. **gaussPyramid**
Iterates over the given image the given number of times. For each iteration, a reduced copy of the pyramid's last element is appended to the list.
 - d. **laplPyramid**
Iterates over the given pyramid list `len(pyramid) - 1` times. For each iteration, an expanded (and dimension checked) version of the list's previous element is subtracted from the current one.
 - e. **blend**
Iterates over all images in the given pyramids. For each image, each pixel is iterated through and set to a weighted value based on the given mask's pixel.
 - f. **collapse**
Iterates over the given pyramid images in reverse order. For each iteration, the current image is expanded and added to the next index's image (`i + 1`) after limiting the expanded image's dimensions to that of the next index.
4. All source files are hosted on GitHub @ <https://github.com/jjones646/imblend>

Results

