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CS 116
PART 3: Warm-up

3a.
>> a = [5:15];
>> b = a([1:3:end]);
Values 5 through 15, including 15, are stored in array a
From index 0 through 15, store all values 5+3n into the array b.

3b.
>> f = [1501:2000];
>> g = find(f > 1850);
>> h = f(g);
Values in between 1501 through 2000 that are larger than 1850 are stored in array h

3c.
>> x = 22.*ones(1,10);
>> y = sum(x);
The x array represents 10 values containing 22.
Array y is the sum of those
values.

3d.
>> a = [1:100];
>> b = a([end:-1:1]);
Array b stores the flipped version of array a.

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PART 5: Average Images

The images from set 1 combined to create this image. Most of the images in set 1 had a ship at the center of the image, as well as blue background (sky and sea). Of course, the ship is not placed in the exact position in every image, neither are the shapes and sizes of the ships exactly the same. As a result, a ghosting effect is created. The image produced looks like a ghost of a ship. There are no clear lines or edges. All the details blend and blur together. The blue sky and ocean have less details than the ship. As a result, the image produces purely a blue background. There is less of a ghosting effect than the ship.

This image was produced from the images in set 2. The one commonality of the images is the white borders, usually on both sides of the image. The average

image produces a hazy border of white as well. Regarding the subject of the images, more of them were of a plane that is placed on a green lawn with blue sky in the background. We can barely make out the plane object in the average image, since it's the average of the images. The images of the plane were positioned differently, sized differently, and colored differently. This produces a ghosting effect on the plane in the average image.

PART 6: Demosaicing

In a way, we are applying filters to the original image (convolution). Detail, clarity, and sharpness often get lost as a result of lowered resolution. There are even some slight edge artifacts. This is why the final image is darker than the original jpg image.