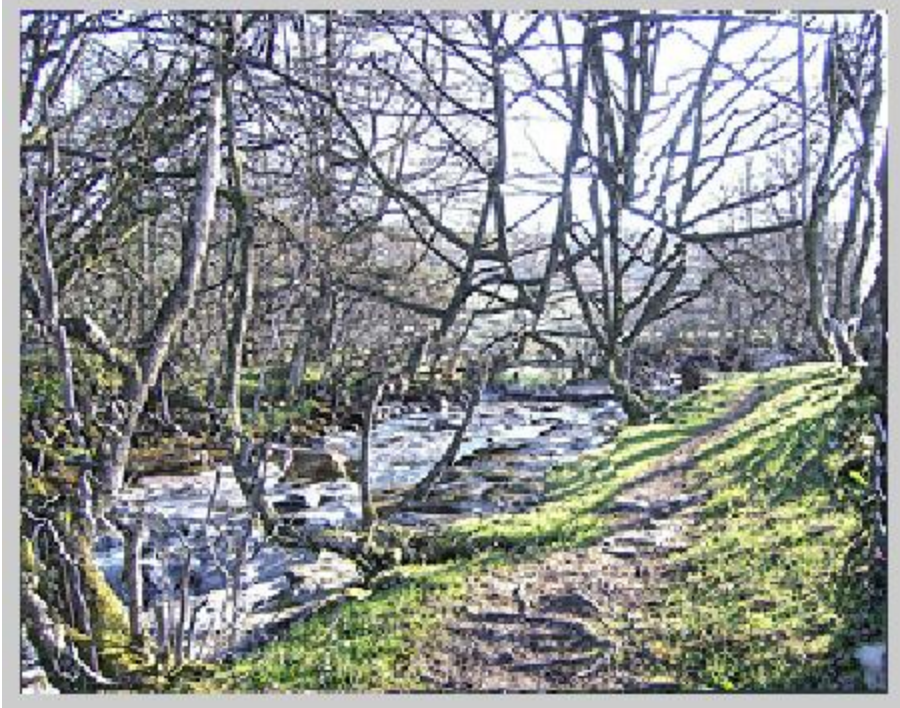Josiah Godfrey
CS 378
PSet1-File2

1.
a)

b)

c)

d) 500 X 375 to 300 X 225

e) reduce width by 200 then reduce height by 150

f) The seam-carving removed all of the dark areas of the picture as these parts had the least contrast. Thus the tree on the right is removed, as are other dark limbs in the picture. In addition, the shadows on the path are no longer there. The resulting picture is much lighter than the original.

2.

a)

b)

c)

d) 500 X 375 to 400 X 300

e) (reduce width by 25 then reduce height by 25) repeat three times, then reduce width by 25

f) The output has most of the bland floor removed and some of the top where it is blurry. The top shelves are also partly removed. Unfortunately, the zig-zag removal has ruined the straight edges that are present in the original.

3. a)

b)

c)

d) 500 X 375 to 500 X 200

e) reduce height by 175

f) The carved image has eliminated the sky and the sand near the shore that has no seals. The output is greatly preferred over the resized image, as it is much crisper. The resized image is much blurrier and has shrunk the people so that they are unrecognizable compared to the carved image.

4.

a)

b)

c)

d) 500 X 333 to 300 X 183

e) reduce width by 200 then reduce height by 150

f) The carved image has eliminated the sky, however it also eliminated the parts of the face that have no features, instead of the rock face below. This has made the president's faces contorted, compared to the original.

5.

a)

b)

c)

d) 500 X 375 to 300 X 225

e) reduce width by 50 then reduce height by 50, repeat three times then reduce width by 50

f) The carved image has removed most of the sky and grassy areas, leaving the trees and rock formations. This has allowed the picture to be more detailed as the size of the person in the photo is close to the original. A side affect is that some parts are contorted, as the mountain in the background looks much different.

6.

a)

b)

c)

d) 500 X 336 to 340 X 216

e) reduce width by 40 then reduce height by 40, repeat three times then reduce width by 40

f) The carved image has reduced the sky and sand in the picture. It also left the horseman unchanged, however the smaller pyramid has been reshaped so that it cuts into the middle pyramid.

Extra Credit:

2. I designed an alternative energy function that did a sobel filter on the three color maps (red, blue, and green) and multiplied each pixel to get the resulting map. This was designed so that all the information provided about the image was used. To use this energy function in the code replace line four of findSeam.m with "`enrgy = energy(im, true);`"

   Four pictures follow that correspond to the previous photos (no. 2, 4, 5, and 6). The new energy function has left the floor in groceries.jpg and some of the sky in Mount Rushmore. It experiences some of the same warped behavior exhibited in the groceries and Mount Rushmore. The meadow picture is similar except that the some of the sky is still left which allows for the mountain in the background to keep its general shape. The pyramid picture is pretty much the same. The end result is that the new energy function is not as quick to eliminate visually bland areas, which is desirable in some pictures and not in others.