Assignment 5 - Aaron Davis

Table of Contents

I pledge that I recieved nor gave authorized assistance on this assignment.

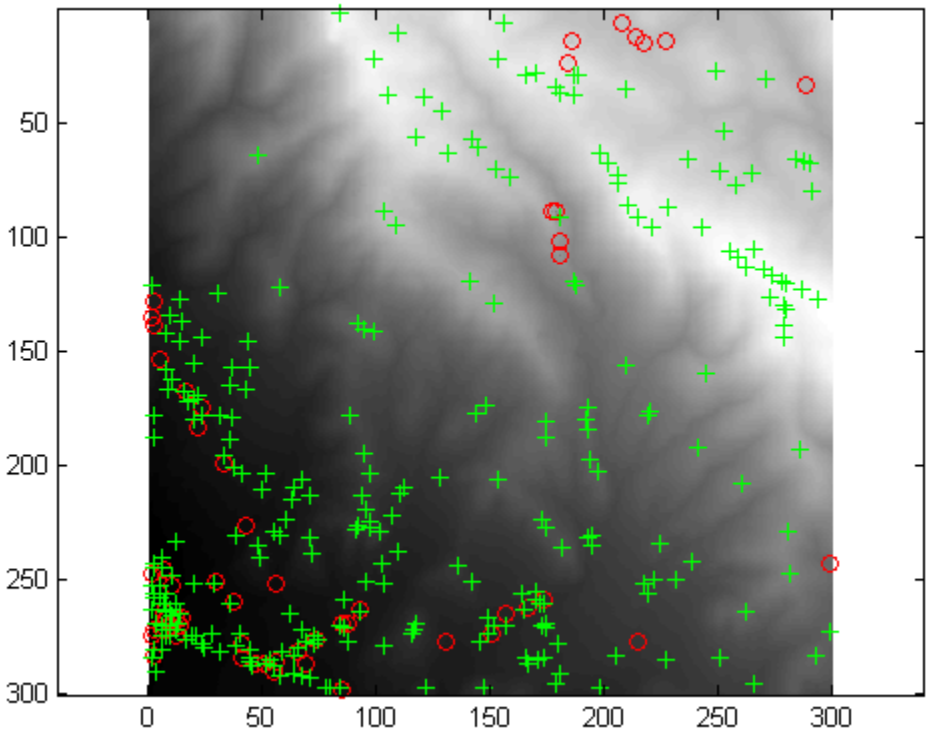
(1) Say (in text) how many pits and peaks were in map.

```
pitlist = findPits(map);
[pits, col] = size(pitlist);
% There are 57 pits in the map.
peaklist = findPits(-map);
[peaks, col] = size(peaklist);
% There are 273 peaks in the map.
```

(2) Display map as a grayscale image, with pits and peaks marked

on top of it. You can use the following code to do this:

```
pits = findPits(map);
peaks = findPits(-map);
imagesc(map); colormap(gray); axis equal
hold on
plot(pits(:,2),pits(:,1),'ro');
plot(peaks(:,2),peaks(:,1),'g+');
hold off
```



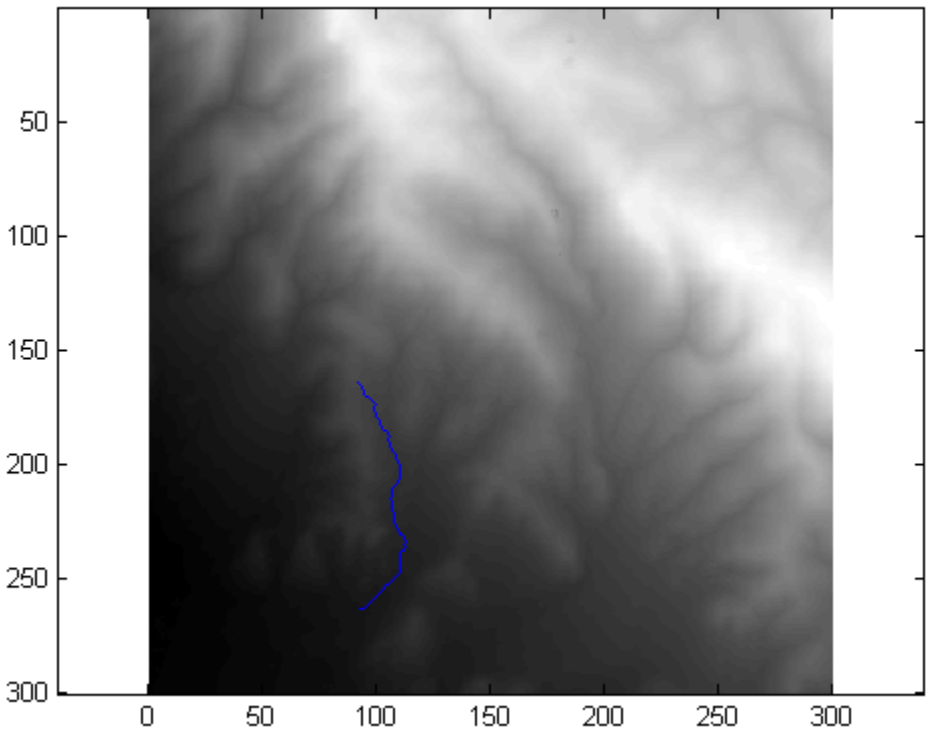
(3) Display map as a grayscale image with the path of a single raindrop

drawn on it as discussed above. The resulting image should look

something like the image at right (of course, it will be different

depending on what pixel was clicked.

```
calcPath(map);
```

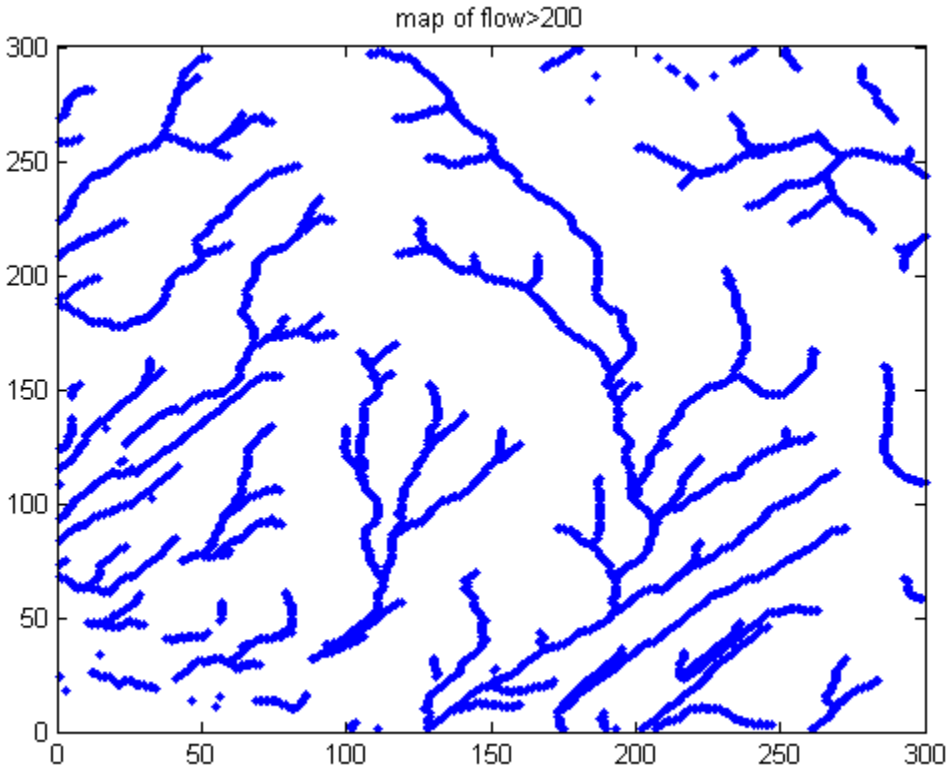


(4) Compute the flow matrix as discussed above. Plot an image

of all of the pixels that have flow greater than 200. The output

image should be like the image at right

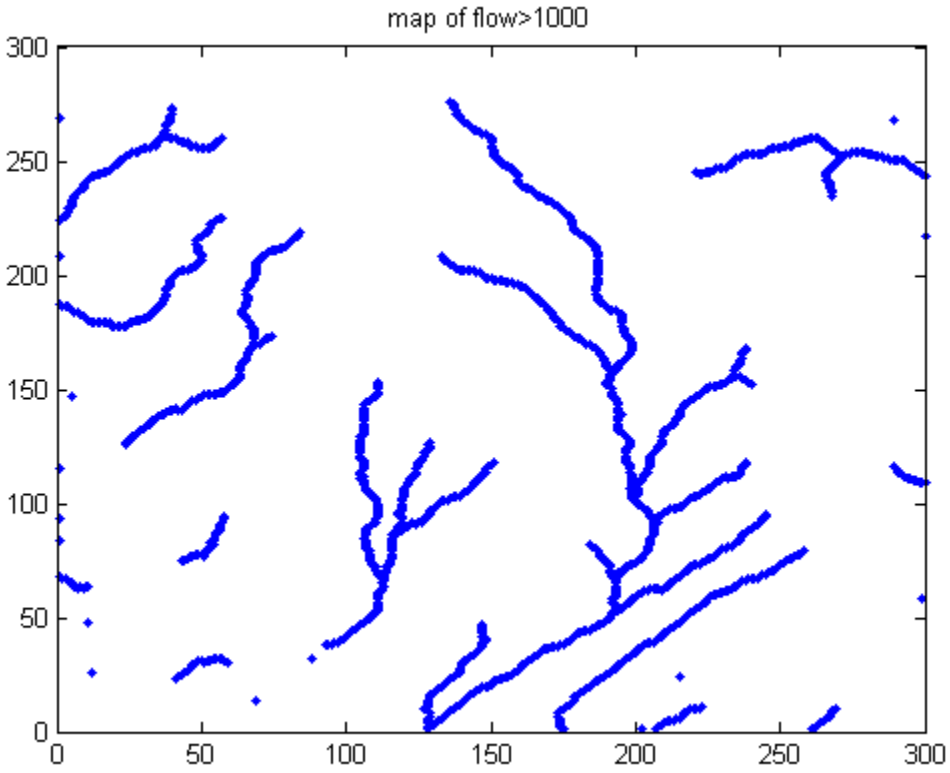
```
clf
mapflow1 = flowmap(map, 200);
[row1, col1] = size(mapflow);
points1 = [];
for j = 1:row1;
    for k = 1:col1;
        if mapflow1(j,k) == 1;
            points1 = [points1; j k ];
        end
    end
end
plot(points1(:,2), points1(:,1),'.b');
title('map of flow>200');
```



(5) Plot an image of all the pixels that have flow greater than

1000. The output image should be like the image at right.

```
clf
mapflow2 = flowmap(map, 1000);
[row2, col2] = size(mapflow);
points2 = [];
for j = 1:row2;
    for k = 1:col2;
        if mapflow2(j,k) == 1;
            points2 = [points2; j k ];
        end
    end
end
plot(points2(:,2), points2(:,1),'.b');
title('map of flow>1000');
```



Conclusion

This assignment was far from any of the others we've done so far, and I enjoyed how in depth and involved it was. I relly feel like it's a legitimate program and it taught me many concepts including clear, concise coding, makign sure to include clear comments, and loops.

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