1 Matlab correction

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%% TUTORIAL - SEGMENTATION BY REGION GROWING

% needs an image I, gray level
% double is needed to perform comparison
I = double(imread('cameraman.tif'));
[Sx, Sy] = size(I);
imshow(I,[]);

% seed
[x, y]=ginput(1);
seed = round([y;x]); % beware of inversion of coordinates

I(seed(1), seed(2))

% create the queue structure by a Java object
queue = java.util.LinkedList;

% Visited matrix : result of segmentation
% this matrix will contain 1 if in the region, -1 if visited but not in the
% region, 0 if not visited
visited = zeros(size(I));


% Start of algorithm ----------------------
queue.add(seed);
visited(seed(1), seed(2)) = 1;

tic
while ~queue.isEmpty()
   p = queue.remove();

   % look at the pixel in a 8-neighborhood
   r = p(1); % row
   c = p(2); % col
   for i=max(1,r-1):min(Sx,r+1)
       for j=max(1,c-1):min(Sy,c+1)
           if (visited(i,j)==0) % not visited yet
               if (predicate(I, [i j], seed)) % condition is fulfilled
                    visited(i, j) = 1;
                    queue.add([i;j]); % add to visiting queue
               else
                   visited(i, j) = -1;
               end
           end
       end
   end
end
toc
% end of the algorithm: the visited matrix contains the segmentation result

figure(); imshow(visited==1,[]);
```