```matlab
%===========================
%  Name:              hw1_4.m
%
%  Author:            Kairi Kozuma
%
%===========================

% Average filter
n = 5;
aFilt = ones(n)/(n^2);

% Filter the image
campus3filt = uint8(imfilter(double(campus3), aFilt));

% Show image before and after filtering
figure(1);
imshow(campus3);
title('Original image');

figure(2);
imshow(campus3filt);
title('Averaged image');
dim = [.4201, .55729, .090056, .014478];
annotation('rectangle',dim,'Color','red')
dim = [.4321, .62429, .090056, .014478];
str = 'Illegible';
annotation('textbox',dim,'String',str,'FitBoxToText','on');

dim = [.276, .20061, .043167, .14105];
annotation('rectangle',dim,'Color','red')
dim = [.306, .28061, .043167, .14105];
str = 'Still legible';
annotation('textbox',dim,'String',str,'FitBoxToText','on');


% a) The small office depot label on the box becomes unreadable. The large
% DELL sign on the box closest to the camera is still visible. The area
% passed through OK because the letters were large enough so that smoothing
% the edges did not render the letters illegible. A greater neighborhood
% size would make all letters unreadable.

% b) A sharpening filter is another type of convolution kernel. The
% sharpening filter uses the matrix:
%              [0  -1  0]
%              [-1  5 -1]
%              [0  -1  0]
% This has the effect of emphasizing disparity between adjacent pixel
% values, so that small differences in the image become more apparent.



Warning: Image is too big to fit on screen; displaying at 67%
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```

**Original image**



**Averaged image**

Illegible

Still legible