```
clc, close, clear all;
originalImage = imread('cameraman.tif');
figure;subplot(131); imshow(originalImage);title('Original Image');

[r,c] = size(originalImage);%Get size of image
mask = 1/49 * ones(7,7);%Averaging Mask
[mskr , mskc] = size(mask);%Getting mask size
rowadd = (mskr - 1)/2;%Row padding
coladd = (mskc - 1)/2;%Column padding

paddedImage = padarray(originalImage,[rowadd,coladd]);%Image and  padding
subplot(132);imshow(uint8(paddedImage)); title('Padded Image');

%%Convolution
for i = 1 + rowadd : r + rowadd%Run uptil total rows
    for j = 1 + coladd : c + coladd%Run uptil total columns
        subImage = paddedImage(i - rowadd : i + rowadd , j - coladd : j + coladd);
        convSum = sum(sum(double(mask).*double(subImage)));%2D sum
        result(i, j) = convSum;
    end
end
%%Show the result
subplot(133);
imshow(uint8(result(1 + rowadd : r + rowadd , 1 + coladd : c + coladd)));
title('filtered image');
```