Laplacian Blending: Gaussian Pyramid

The next step is to implement the Gaussian pyramid. You will be given an image and the number of levels of the pyramid and the output will be a cell containing all the levels of the pyramid. Please follow the steps described in the script to complete the **gausspyr** function. You can use the **reduce** function you implemented before.

Your Script

Save Reset MATLAB Documentation (https://www.mathworks.com/help/)

```
% loading the image
A = im2double(imread('orange.png'));
% depth of the pyramids
depth = 5;

% we build the Gaussian pyramid
GA = gausspyr(A,depth);

function G = gausspyr(I,depth)

    % Input:
    % I: the input image
    % depth: number of levels of the Gaussian pyramid
    % Output:
    % G: a cell containing all the levels of the Gaussian pyramid

    % Please follow the instructions to fill in the missing commands.

    G = cell(1,depth);

    % 1) Create a pyramid, where the first level is the original image
    % and every subsequent level is the reduced version of the previous level
    for i = 1:depth
        if i == 1
            G{i} = I; % original image
        else
            G{i} = reduce(G{i-1}); % reduced version of the previous level
        end
    end

end

function g = reduce(I)

    % Add your code from the previous step
    Gauss = fspecial('gaussian',5,1);

    % 2) Convolve the input image with the filter kernel (MATLAB command imfilter)
    % Tip: Use the default settings of imfilter
    I = im2double(I);
    im_filtered = imfilter(I,Gauss);

    % 3) Subsample the image by a factor of 2
    % i.e., keep only 1st, 3rd, 5th, .. rows and columns
    g = im_filtered(1:2:end, 1:2:end,:);

end
```

Run Script

Previous Assessment: All Tests Passed

Submit