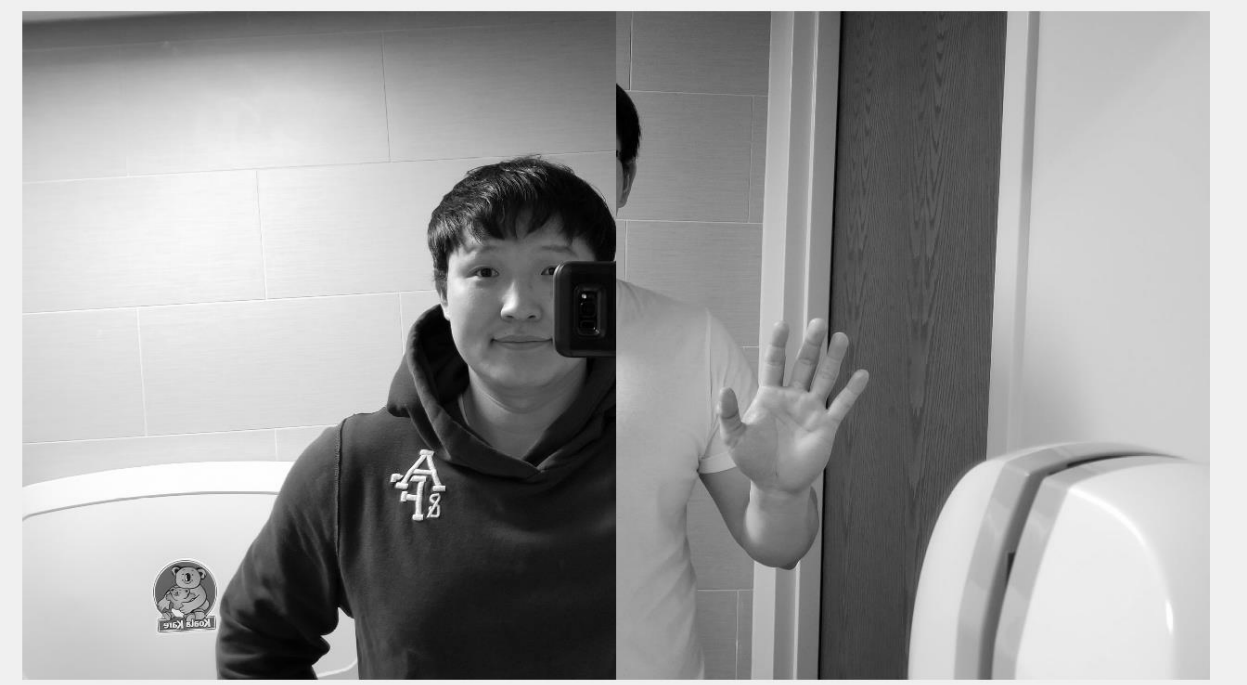
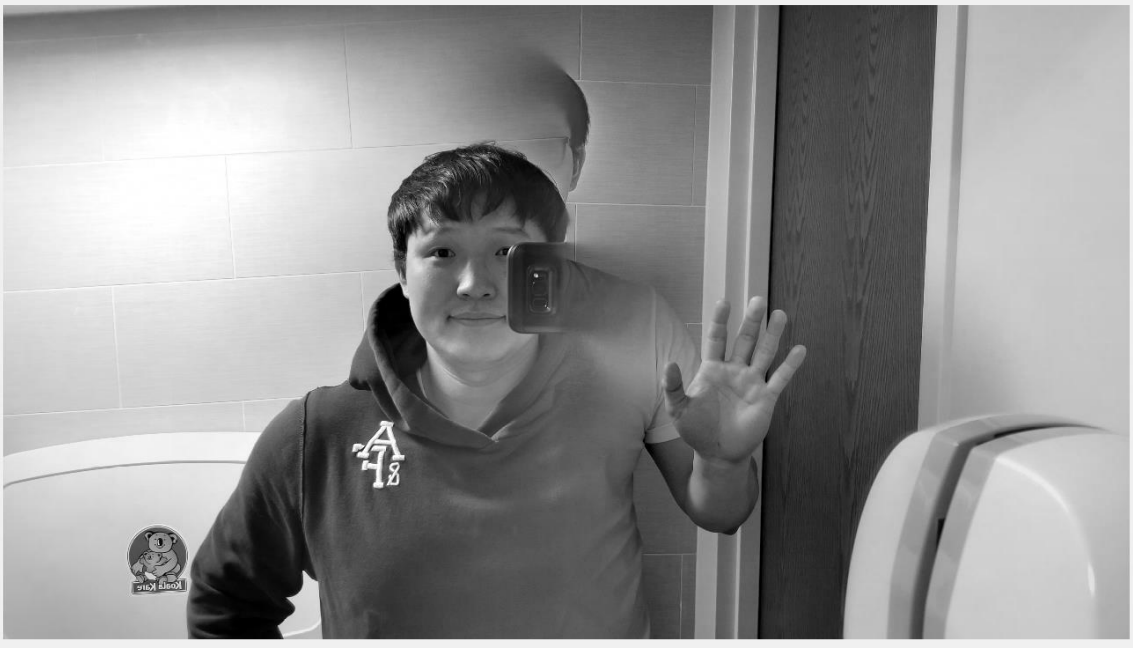
Cut in half Images:



Blended Images:



Source Code:

```
clear all
close all
clc

%% Read the images
A=imread('1.jpg');
B=imread('4.jpg');
% rotate the second image since it's printing upside-down
C=imrotate(B , 180);
% setting height and width
height=size(A,1);
width=size(A,2);

%% Convert images to grayscale
firstImg=rgb2gray(A);
secondImg=rgb2gray(C);

%% Create mask
partitionedImg=floor(width/2);
maskedImg=ones(height,width);
maskedImg(:,1:partitionedImg)=0*maskedImg(:,1:partitionedIm
g);

%% Create gaussian pyramids for both the images and the
mask
levels=floor(log2(min([width, height])));
sigma=2;
hsize=3*sigma+1;
sigmaMask=10;
hsizeMask=3*sigmaMask+1;
% using gausian pyramid
firstImg_Gauss_Pyr=Gaus_Pyr(firstImg,levels,sigma,hsize);
second_Gauss_Pyr=Gaus_Pyr(secondImg,levels,sigma,hsize);
masked_gauss_Pyr=Gaus_Pyr(maskedImg,levels,sigmaMask,hsizeM
ask);

%% Create Laplacian pyramids from both the images
firstImgLaplacePyr=Lap_Pyr(firstImg_Gauss_Pyr);
secondImgLaplacePyr=Lap_Pyr(second_Gauss_Pyr);
```

```
%% Blend laplacian pyramid
blendedPyr=blend_Pyr(firstImgLaplacePyr,secondImgLaplacePyr
,masked_gauss_Pyr);

%% Reconstruct image from blended pyramid
blendedImg=collapse_Pyr(blendedPyr);
imshow(blendedImg);
imgClubbed=[firstImg(:,1:partitionedImg),
secondImg(:,partitionedImg+1:end)];
figure, imshow(imgClubbed);


function pyr=Lap_Pyr(A)
levels=size(A,1);
pyr=cell(levels,1);
pyr{levels,1}=double(A{levels,1});
for i=levels-1:-1:1
    temp=imresize(A{i+1,1},size(A{i,1}));
    pyr{i,1}=double(A{i,1})-double(temp);
end


%************************************


function pyr=Gaus_Pyr(A,levels,sigma,hsize)
pyr=cell(levels,1);
h=fspecial('gaussian',hsize,sigma);
pyr{1,1}=A;
for i=2:levels
    temp=imfilter(pyr{i-1,1},h,'symmetric','corr');
    pyr{i,1}=temp(1:2:end,1:2:end);
end


&****************************************


function img=collapse_Pyr(A)
levels=size(A,1);
for i=levels-1:-1:1
    temp=imresize(uint8(A{i+1,1}),size(A{i,1}));
```

```
    A{i,1}=A{i,1}+double(temp);
end
img=uint8(A{1,1});


&*********************************************


function pyr=blend_Pyr(pyrA,pyrB,pyrMask)
levels=size(pyrMask,1);
pyr=cell(levels,1);
for l=1:levels
    pyr{l,1}=(1-
pyrMask{l,1}).*pyrA{l,1}+(pyrMask{l,1}).*pyrB{l,1};
end




&*********************************************


function show_Pyramid(A)

levels=size(A,1);
for l=1:levels
    mini=min(min(A{l,1}));
    maxi=max(max(A{l,1}));
    temp=((A{l,1}-mini)/(maxi-mini))*255;
    figure, imshow(uint8(temp));
    colormap(gray);
end
```