LAB 9

Name:Kartikay Agrawal

Reg No:2148064

**Implement multi-resolution image decomposition using wavelet.**

**CODE:**

clc;

clear all;

close all;

im=imread('captain.tif');

wname='haar';

no\_levels=1;

% Wavelet 2 function is for 2D wavelet analysis

% C contains decomposion vector which has A(N), H(N), V(N), D(N) ie

% approximation, horizontal, vertical, diagonal co-efficients

% S is for Book keeping vector

[C, S]=wavedec2(im2double(im),no\_levels,wname);

% appcoef2 computes the approximation coefficients at level 2 using

% decomposion structure [C S]

A1=appcoef2(C,S,wname,1);

% detcoef2 computes the horizontal, vertical, diagonal coefficients at level 2 using

% decomposion structure [C S]

[H1, V1, D1 ] = detcoef2('all', C, S, 1);

% Extract the coefficients from level 21

%[H1, V1, D1 ] = detcoef2('all', C, S, 2);

% Display the images

im1 = [A1 H1; V1,D1]

imshow(im1);

**OUTPUT:**  
