

```
%date - 26/01/2026
%created by - Siddharth Khandelwal
clc ;
clear all;
close all;

I = imread('fort_image.jpeg');
imshow(I);
title('Original Image');
figure;
Ig=rgb2gray(I);

%subplot(2,3,2);
imshow(Ig);
title('Grayscale Image');
figure;
%doing the discrete wavelet transform
[Ia,Iv,Ih,Id]=dwt2(Ig,'haar');
Ia=uint8(Ia);
Iv=uint8(Iv);
Ih=uint8(Ih);
Id=uint8(Id);

%subplot(2,3,3);
imshow(Ia);
title('Approximation (LL) Image - Ia');
figure;
%subplot(2,3,4);
imshow(Iv);
title('Vertical Detail (LH) Image - Iv');
figure;
%subplot(2,3,5);
imshow(Ih);
title('Horizontal Detail (HL) Image - Ih');
figure;
%subplot(2,3,6);
imshow(Id);
title('Diagonal Detail (HH) Image - Id');
figure;

%recovering the original image
I_recover=idwt2(Ia,Iv,Ih,Id,'haar');
I_recover = uint8(I_recover);
imshow(I_recover);
title('Recovered Image');
```

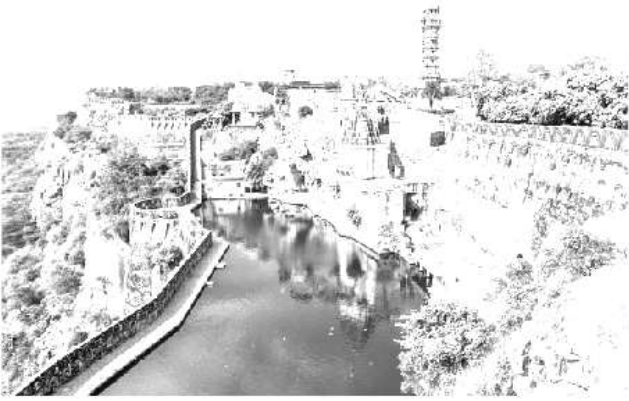
Original Image



Grayscale Image



Approximation (LL) Image - la



Vertical Detail (LH) Image - lv



Horizontal Detail (HL) Image - lh



Diagonal Detail (HH) Image - Id



Recovered Image

