



VIT-AP
UNIVERSITY

LAB ASSIGNMENT - 3

TITLE- Write a program to add noise in the image and apply image restoration technique using Wiener filter and median filter

COURSE CODE: CSE4047
COURSE NAME : COMPUTER VISION

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Google Drive : [Drive Link](#)

Steps:

- **Load the Image:** Read an image file into MATLAB and convert it to grayscale if needed.
- **Add Noise:** Add Gaussian noise to the grayscale image using the `imnoise` function.
- **Apply Wiener Filter:** Use the `wiener2` function to reduce the noise in the image.
- **Apply Median Filter:** Use the `medfilt2` function to further clean the image by removing noise.
- **Display Results:** Show the original, noisy, Wiener-filtered, and median-filtered images for comparison.

Code:

```
originalImage = imread('3dBoxBg.jpg');  
grayImage = rgb2gray(originalImage);  
noisyImage = imnoise(grayImage, 'gaussian', 0, 0.01);
```

```
figure;  
subplot(1, 2, 1);  
imshow(grayImage);  
title('Original Grayscale Image');  
subplot(1, 2, 2);  
imshow(noisyImage);  
title('Image with Gaussian Noise');
```

```
wienerFiltered = wiener2(noisyImage, [5, 5]);
```

```
figure;  
imshow(wienerFiltered);  
title('Image after Wiener Filter');
```

```
medianFiltered = medfilt2(noisyImage, [3, 3]);
```

```
figure;  
imshow(medianFiltered);  
title('Image after Median Filter');
```

Output:

Original Grayscale Image



Image with Gaussian Noise



Image after Wiener      

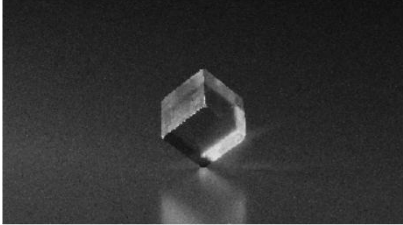


Image after Median      

