ASSIGNMENT-6(B)

Exercise 11: Wiener filtering

Read in the image 'blurr1'. We will apply some Wiener filterin to enhance image and try to read the license plate. We know that the filte used to blur the image was a uniform filte with a circular support and a radius of 7 pixels. Its convolution kernel h0 can be constructed like this (except for the normalization, which is not important here):

```
>> b = +(rr<=7)
```

You now have to implement the Wiener filte , and apply it in the Fourier Domain (to compute the complex conjugate, use the function conj). The ratio of noise to signal must still be estimated. If you choose a value that is too large, the effect of the Wiener filte will be too small, and no inverse filterin will be performed. Conversely, if you choose the value too small, you'll be sharpening the noise. The ringing pattern around the edges of the image are caused by the filterin in the Fourier Domain. This is because of the periodic boundary conditions (i.e., the image is considered as one period of a periodic image, infinit in size).

Answer:

The ringing pattern around the edges of the image is caused by the filtering in the Fourier Domain. This is because of the periodic boundary conditions (i.e., the image is considered as one period of a periodic image, infinite in size).

Image ‘blur1’:

FIG 1

Winter filter:

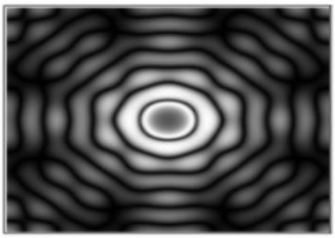

FIG 2

Restored license plate:

FIG 3

Too little:

FIG 4

Too Much:

FIG 5