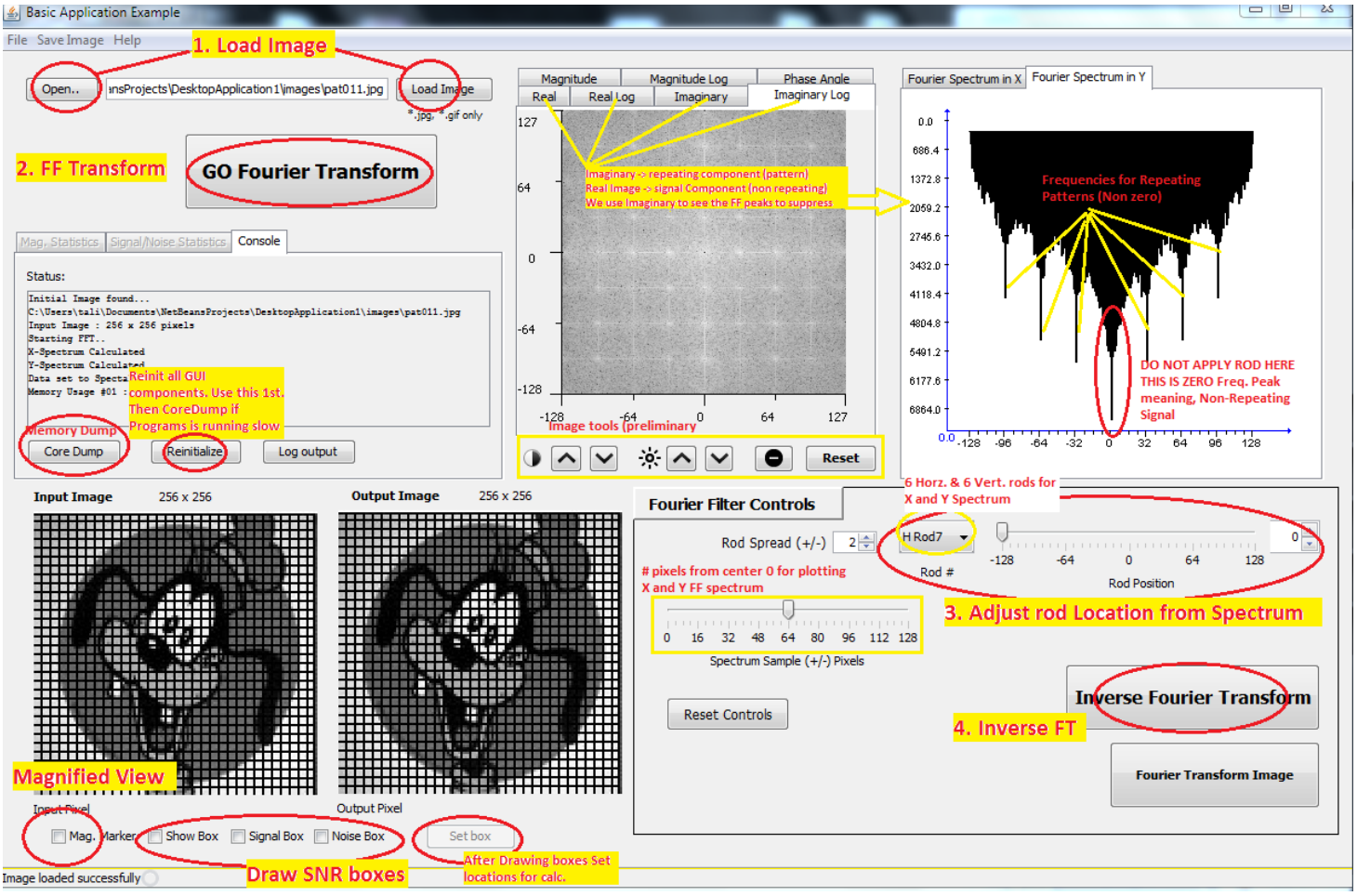
Fourier Filter Demo Program

1. Run FFTool.bat -> should run the program for all KT LAPTOPS
2. If that fails then Java is not in System Path
3. Run Configure.bat -> this should find the java installation in your laptop and create a new FFTool.bat replacing the old. That should do it.
   In case it still doesn't work try editing configure.bat in notepad changing "Program files" to "Program Files (x86)" and run again. The bat script used is as below, just change the above :

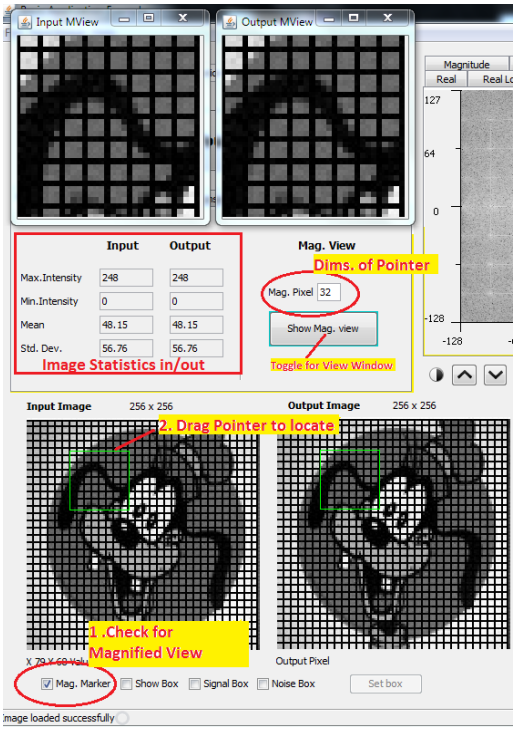
Configure.bat

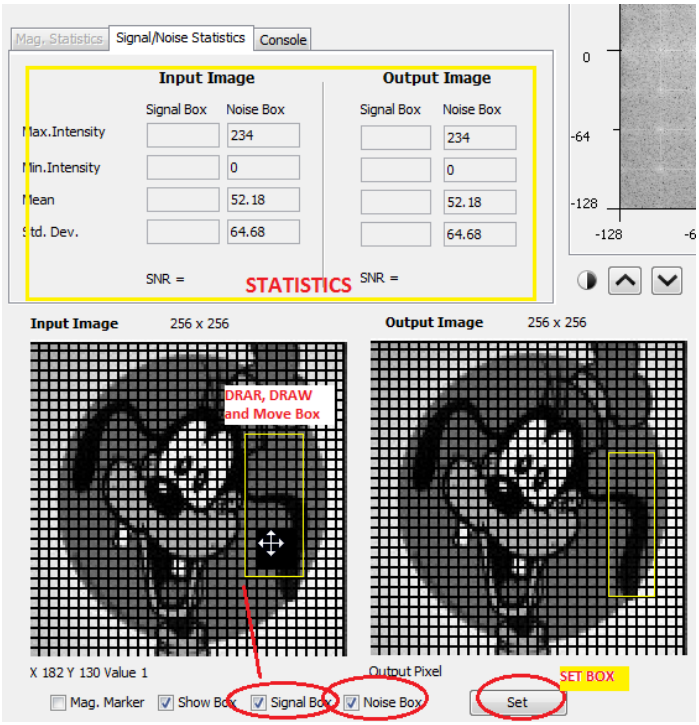
```
del FFTool.bat

@echo off

dir c:\"Program files" /s /b | find "java.exe" >>pathfile

FOR /F "tokens=1 delims=" %%A in (pathfile) do SET results=%%A

echo "%results%" -jar LoTool.jar>> FFTool.bat

del pathfile
```

N.B. If u manually edit please remember to save is ANCII not Unicode with .bat as ext.

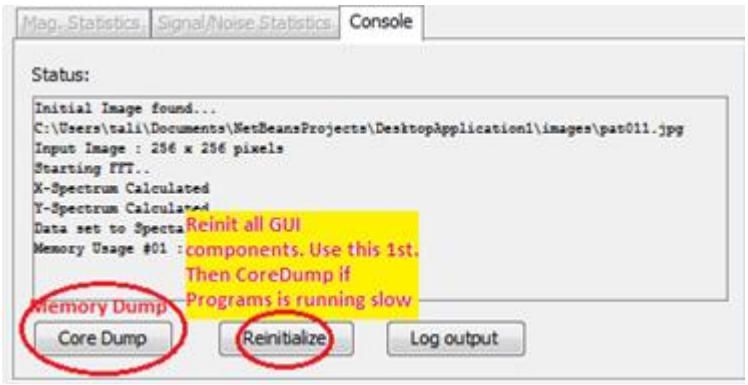


1. **Follow Instructions. It's very EASY to use.**

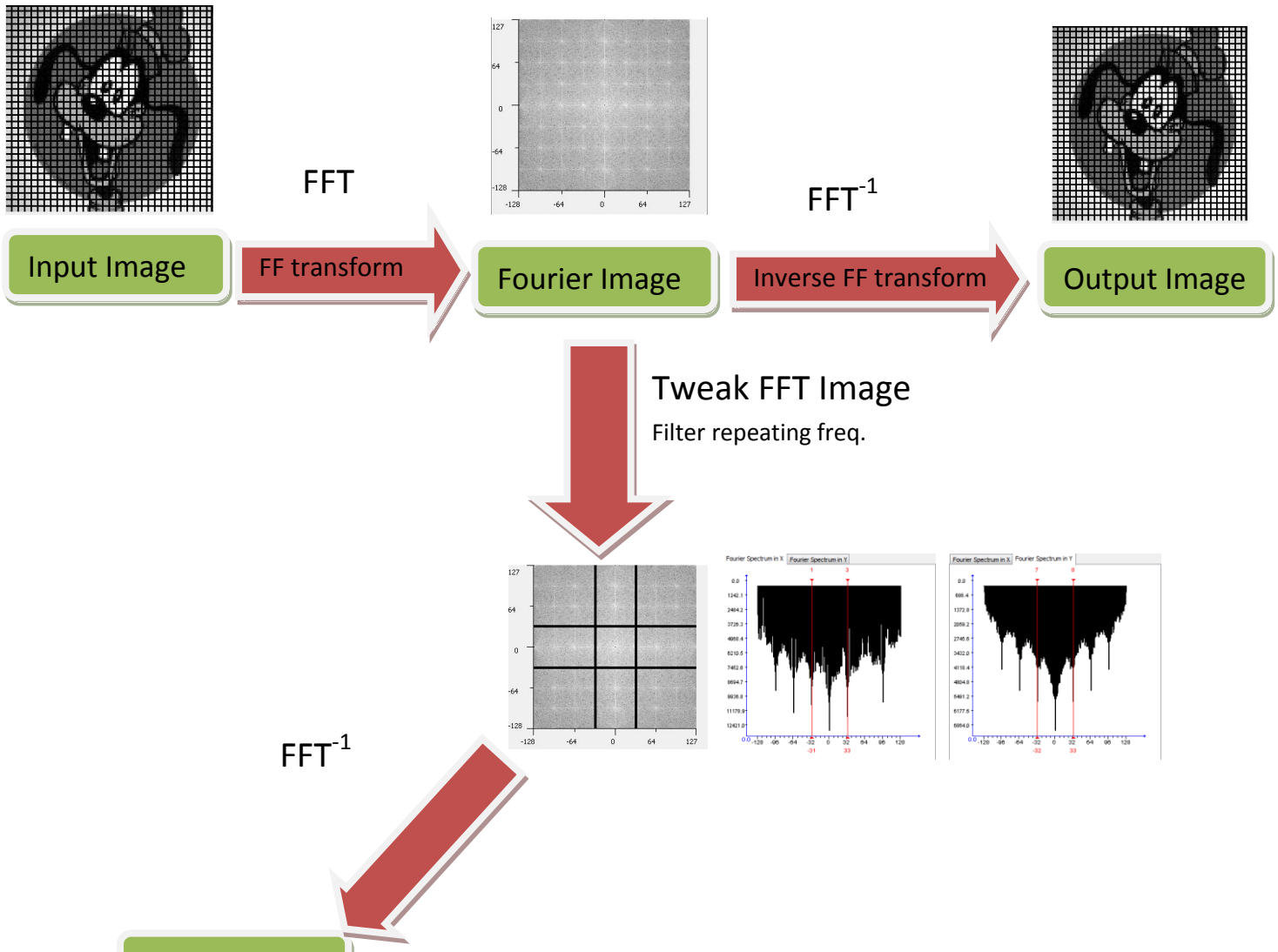


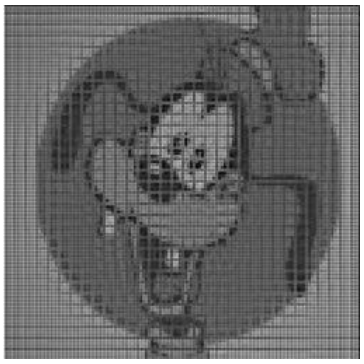


2. **Statistics available for View. Sometime dragging pointer can be sluggish due to memory usage. Feel free to use the "Core Dump" button to free unused resources.**



3. Flow:

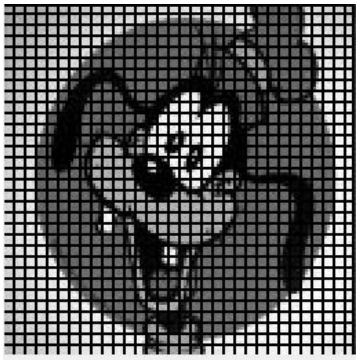




Mean: 108

Std: 24

Output Image



Mean : 96.6

Std : 95

Input Image

FF Images:

3 types of FF images :

1. **Imaginary -> Imaginary Log (For scaling purpose)**
2. **Real -> Real Log**
3. **Magnitude -> Magnitude Log**
4. **Phase Angle**

Space Domain F(x) → FT → Frequency Domain g(w) , w = freq.

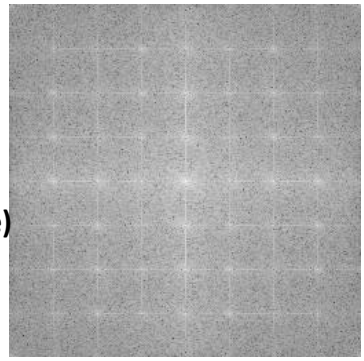
For w = 0, g(0) = FT (non oscillating signal i.e. signal of interest)

Fow w!= 0, { g(w) > 0 ideally } = FF (oscillating signal i.e. repeating pattern)

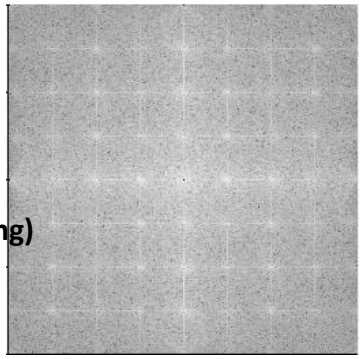
Crating a Filter such as g(w) = 0 where w!=0 ; ideally would filter out the repeating pattern or oscillating signal.

Real **Imaginary**

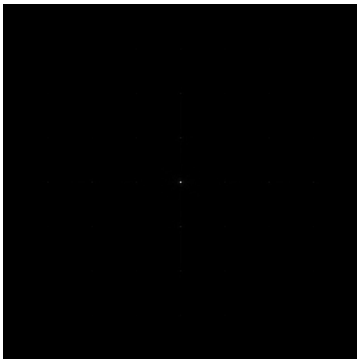
Log (Re)



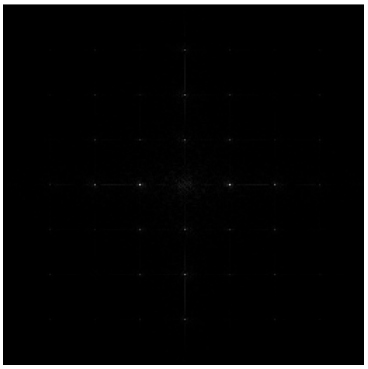
Log(img)

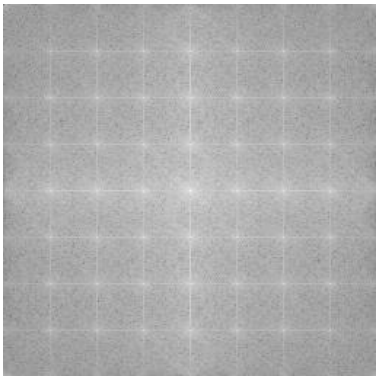


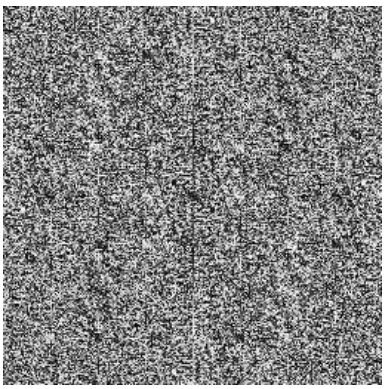
Re



Img



Magnitude 

Phase 

Program functioning:

The FF spectrum is plotted using the Imaginary Images from which the repeating signal is suppressed.

Sampling is done from –x to +x (x = sample) in both X and Y directions to create the two spectrum.

Thats why DO NOT PUT rod at "0" - its the real component of the FF (signal) .

The middle peak should be left unaltered.

Limitations

1. **Any size images can be used but will be resized to 256x256 by a resize module hardcoded in the program (check console in runtime)**
2. **There might be unresolved peaks in the FT image making it difficult to place rods(filters). This happens when the frequency of occurrence of the repeating pattern in not high ie. f→ 0 so approaches the center of the spectrum**
3. **There are some bugs with the image update module. This might get reflected in the console as unhandled exceptions. When happens pls email be back the log file in the same directory. Log files are generated on a day basis with timestamp for each run. Please do send me the latest log when you encounter any unhandled exceptions in the console.**