**(To be done by previously assigned teams.)**

Develop **your own C program** using the supplied library, that performs Band Pass Filtering in frequency domain. The program should work for 512x512 gray valued images. It should perform 2D DFT to create two 512x512 arrays (for real and imaginary parts of complex numbers). Low frequency components should be placed at the center of the arrays which should represent angular frequencies in range $[-\pi, \pi]$ in both directions. It should then apply an ideal band pass filter which should cancel out the terms outside the specified region as illustrated below. The pass band ring is specified using command line arguments. "r" value should be between 0 and 256. "bw" value should be checked to satisfy bw<r. After filtering is completed, your program should perform 2D inverse DFT to display the output image.
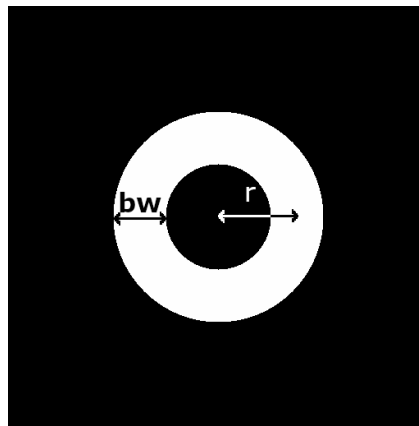
The program should read three parameters in the command line: file name, center frequency (r) and bandwith (bw), and it should be executed as:
```
./hwk4.exe filtest1.ppm 100 20
```
The following 512x512 ppm test images will be supplied:
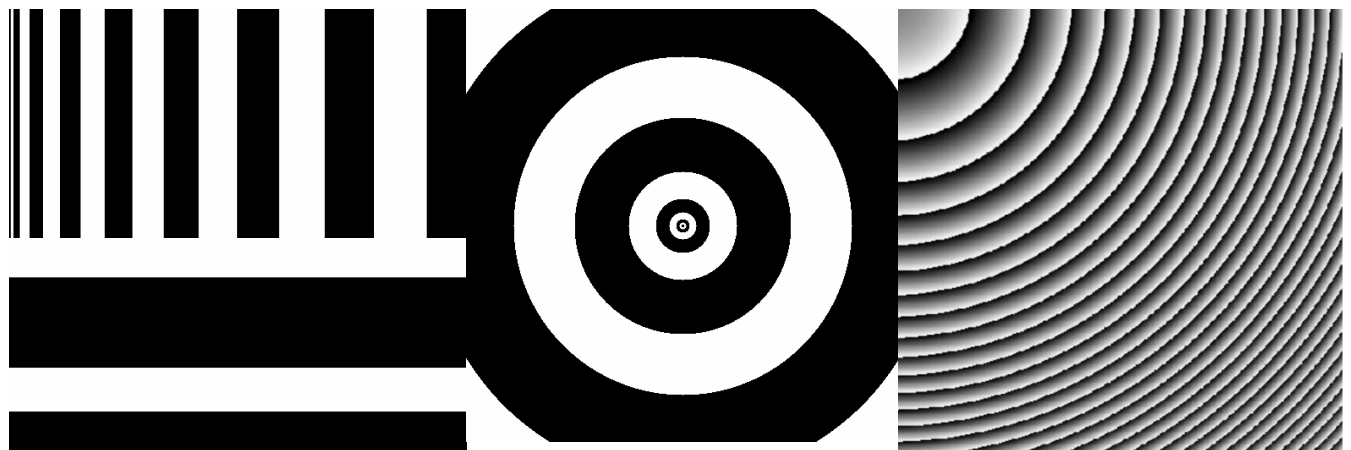
You should submit a C file named hwk4.c including comments on how to compile & run the program. This file should be submitted via Teams at or before due date. Suspicious similarities between different teams will cause a major reduction in grades.