Image Processing, Retrieval, and Analysis.

Project 1.

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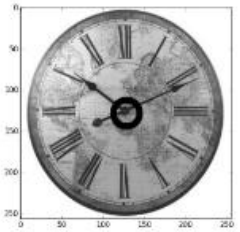
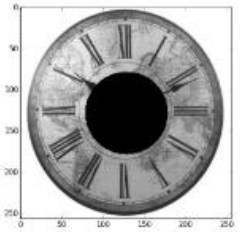
Task 1.1: warm-up



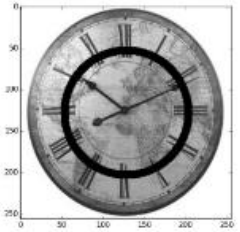
$r_{min} = 12$

$r_{max} = 20$



$r_{min} = 1$

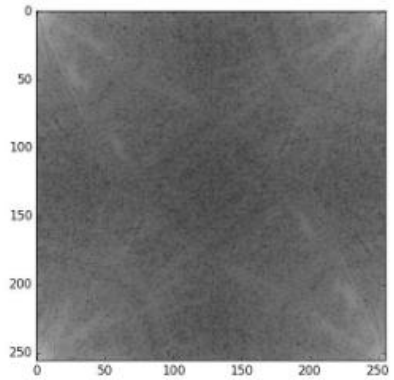
$r_{max} = 50$



$r_{min} = 70$

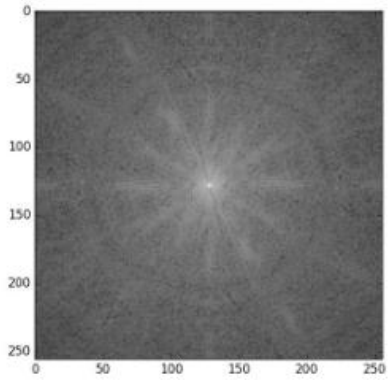
$r_{max} = 80$

Task 1.3: band pass filter



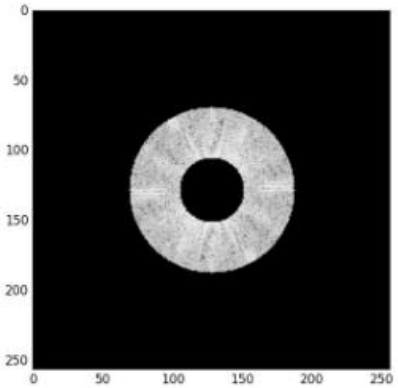
$log|G(\nu \cdot \mu)|$

`fftshift`



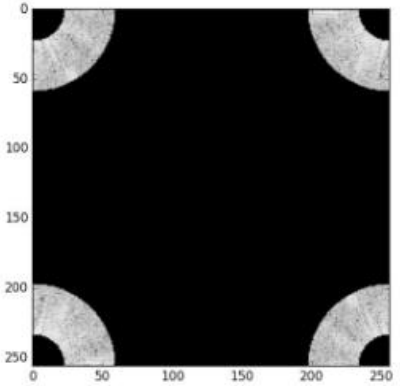
shifted

`filter`



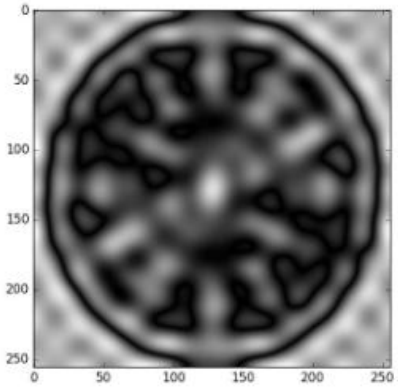
$log|\tilde{G}(\nu \cdot \mu)|$

`ifftshift`

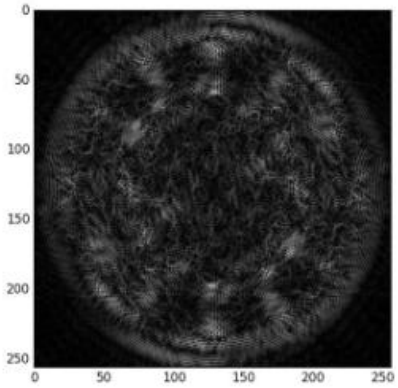


inversed shifted

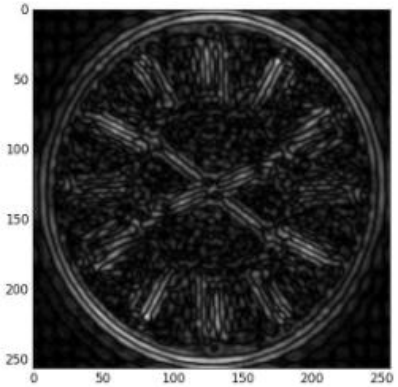
Task 1.3: band pass filter



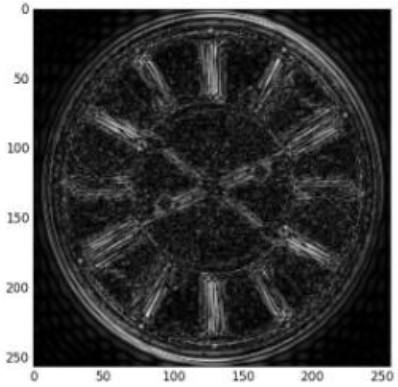
$r_{min} = 1, r_{max} = 10$



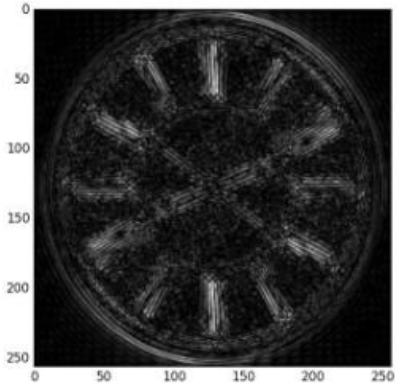
$r_{min} = 60, r_{max} = 90$



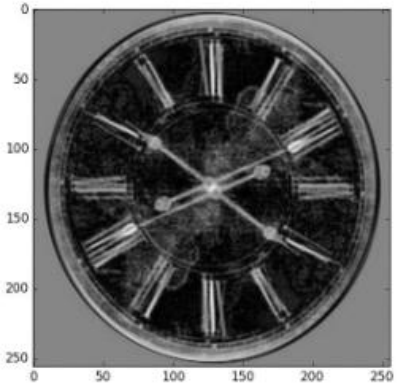
$r_{min} = 15, r_{max} = 45$



$r_{min} = 20, r_{max} = 150$



$r_{min} = 30, r_{max} = 90$



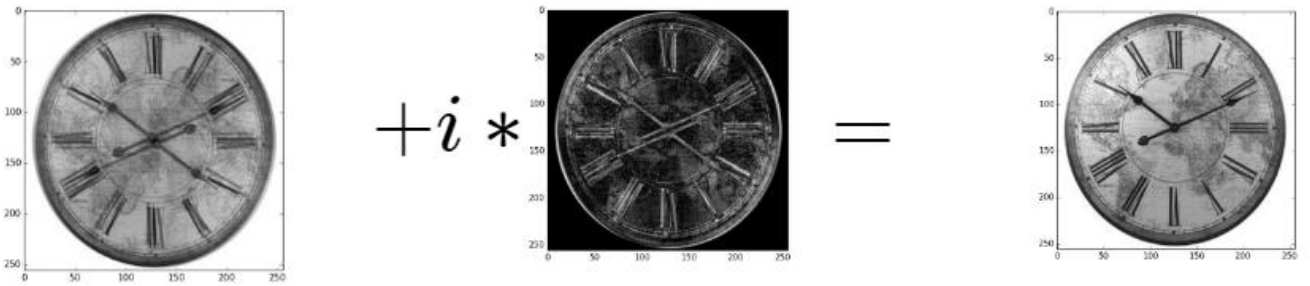
$r_{min} = 1, r_{max} = 90$

Task 1.4: importance of phase

$$|F(\omega)| = \sqrt[2]{[\mathcal{R}(F)^2 + \mathcal{I}(F)^2]}$$

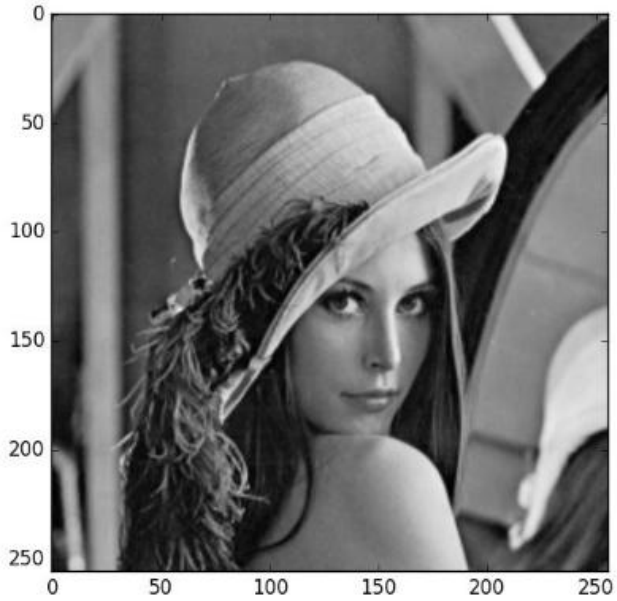
$$\phi(F(\omega)) = \tan^{-1} \frac{\mathcal{I}(F)}{\mathcal{R}(F)}$$

$$F(\omega) = |F(\omega)| * \cos(\phi(F(\omega))) + i * |F(\omega)| * \sin(\phi(F(\omega)))$$

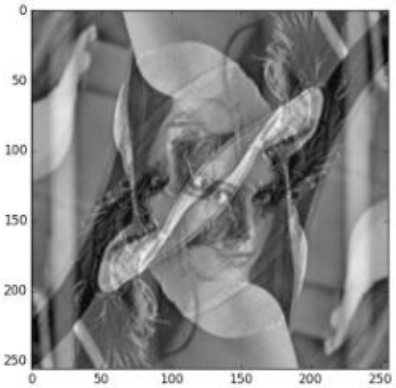


Task 1.4: importance of phase

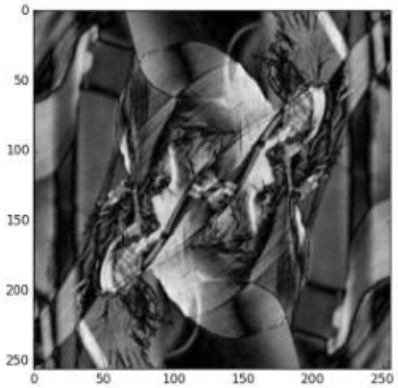
Who is she?



Task 1.4: importance of phase

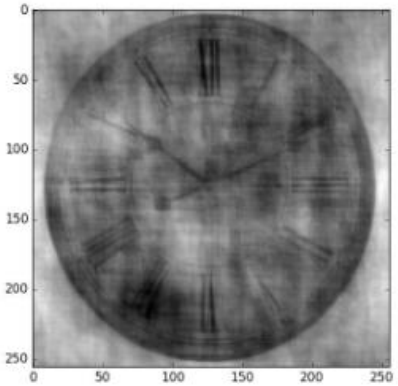


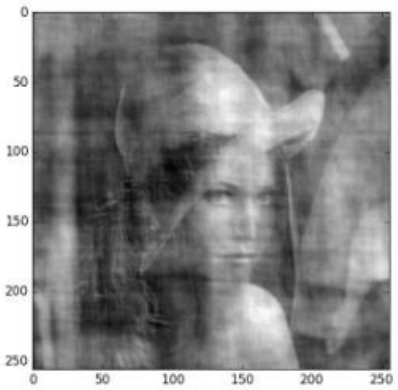
$+i*$

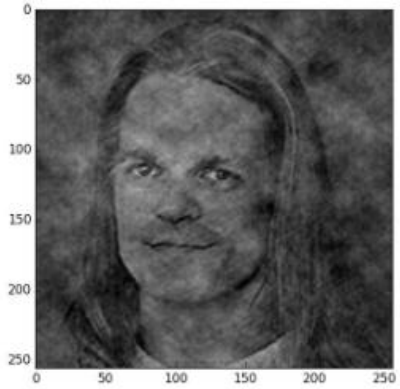


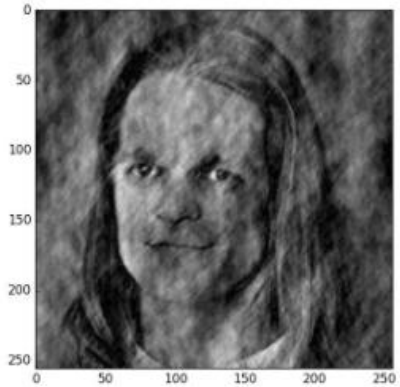
Task 1.4: importance of phase

What if..?









Thank you for attention

Sorry for taking too long, here is a potato