University of Technical Education

Faculty of Electrical & Electronic Engineering

Assignment-1

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Given an image f(x,y) as bellow

a. What is the image f called? Why?
b. Assume that the image f is in the domain space, so after using Fourier transform, what domain is it?
c. Transform the image f using Fourier transform. Notice that you must use formula for calculating it.
d. Write Matlab code to transform the image f in the frequency domain (1 điểm).
e. Calculate the amplitude of pixel at the coordinate axis (1,1) of the output image g.

$$f = \begin{matrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{matrix}$$