Universiti Malaysia PAHANG	COURSE: IMAGE PROCESSING			**MARKS**: /10
	TOPIC: Image watermarking		CODE: BCM2063	
	Lab Exercise	NO: 6	DURATION: 90 minutes	

QUESTION 1 **[10 Marks]**

Instruction:

(a) Open "Lena.tiff", read the file into *f*.

(b) Open "watermark.tiff", read the file into *w*.

(c) Write a new function to embed a watermark into the host image using Least Significant Bit (LSB) (without build-in-function).

(d) Test watermarked image against different types of attack (e.g. Salt & Pepper, Gaussian Noise, etc)

(e) Write a new function to extract a watermark from the watermarked image (without build-in-function).

(f) Display the watermarked image and watermark recovery after different types of attacks.

(g) Inspect and analyse the watermark recovery in terms of normalize-cross-correlation (NC) values and Bit-error-rate (BER) values.