**HW2 of Introduction to Information Security 2017**

1. Implement DES. (Please don’t call the existing library, implement it by yourself!)
2. Use your DES as the encryption and decryption (加解密都要) in ECB, CBC, OFB and CTR modes. Do the cipher on both R.G.B arrays separately and continuously (1.將 RGB 分開後，各自加解密; 2.不管 RGB，將讀入的資料連續取 64bit 來加解密). Please ignore the header information (標 頭檔不用加解密). Test your code with the bmp file attached in moodle and save the results

(bmp file) of the block cipher modes. (That means you have to learn how to read/write bmp file.) In addition, record the execution time of each block cipher modes.

This website may help you with handling bmp files <http://olife.iteye.com/blog/1028198>

Student assistant will test your code with the following parameters:

KEY: 1010101110101011101010111010101110101011101010111010101110101011 (10101011\*8)

IV: 1111101111111011111110111111101111111011111110111111101111111011 (11111011\*8)

and the attached bmp file.