

CSC112      Fundamentals of Computer Science      Spring 2016  
Lab 6 – 2D Arrays: Hiding Messages in Pictures (Steganography)

Program Logic for Lab 6

```
// Suppose the message array is:      char msg[141] ;
// Suppose the 2-D picture array is:  int ** A      ;

// A is dynamically allocated with m rows and n columns.
//   the values in A are read from the input file.
//

bitcount = 0 ; // Counter for the encoded bits.

loop over all characters in the message
  Let c denote the current character
  loop over all 8 bits in c, e.g., for k = 0 to 7 {

      i = bitcount % m ; // Compute row and column
      j = bitcount / m ; // using column major order.

      Let b denote the k_th bit of c

      Bits are numbered from the low order bits in c
      to the high order. Bit 0 is the "rightmost" bit
      of character c. Bit 7 is the "leftmost".

      set the low order bit of A[i][j] to be equal to b

      add one to the bitcount

  } // end inner loop
} // end outer loop

Save the updated image A to the output file. Use
the same data format as the input file.
```