# Tutorial 1

1. Use run length encoding for compressing string A :
   00000111110010000101

2. The characters a to h have the set of frequencies based on the first 8 Fibonacci numbers as follows:
   a : 1, b : 1, c : 2, d : 3, e : 5, f : 8, g : 13, h : 21
   A Huffman code is used to represent the characters. What is the sequence of characters corresponding to the following code?
   110111100111010

3. A networking company uses a compression technique to encode the message before transmitting over the network. Suppose the message contains the following characters with their frequency:

| Character | Frequency |
|---|---|
| a | 5 |
| b | 9 |
| c | 12 |
| d | 13 |
| e | 16 |
| f | 45 |

   Note that each character in input message takes 1 byte.

   If the compression technique used is Huffman Coding, how many bits will be saved in the message?