Practice Network Lab Assignment

1st day:

1. Check whether a number is power of 2 or not.
2. Input a string of alphabets. Now count frequency of each alphabet present in that string.
3. Input a string of 0 and 1. Count number of 1's present in that string.
4. Input a string of 0 and 1.
   a. Divide it into segments of equal length.
   b. If the string length is not an exact multiple of segment length then use left padding with 0s.
   c. Now count number of 1's present in each segment.

   Sample Input-output:
   Input: 1000111010
   Segment length:4

   Output:
   Segment 1: **00**10 <Bold indicates padding with 0>
   Segment 2: 0011
   Segment 3: 1010

   Frequency:
   Segment 1: **1**
   Segment 2: 2
   Segment 3: 2

5. Input a string of 0 and 1. In that string-
   a. Count number of 1's present in every alternate position starting from 1st position.
   (e.g. positions 1,3,5,7,9 and so on)
   b. Count number of 1's present in every two alternate positions starting from 2nd position.
   (e.g. positions 2,3,6,7,10,11,14,15 and so on)
   c. Count number of 1's present in every four alternate positions starting from 4th position.
   (e.g. positions 4,5,6,7,12,13,14,15,20,21,22,23 and so on)

6. Check whether the given input string contains
   a. only alphabets
   b. only digits
   c. only 0s and 1s.