**Python Exercises – I (10\40)**

1. Write a program to remove all vowels from a given sentence.
2. Given a list of numbers. Write a program to find out how many times a specific number appears in the given list.
3. Given a string containing numbers seperated by space. Find out the largest and lowest.
4. Write a function that takes in a string of one or more words, and returns the same string, but with all five or more letter words reversed strings passed in will consist of only letters and spaces. Spaces will be included only when more than one word is present.
5. You are given an array of strings and an integer k. Write a program to return the first longest string consisting of k consecutive strings taken in the array.

**Example**: longest\_consec(["zone", "abigail", "theta", "form", "libe", "zas", "theta", "abigail"], 2) --> "abigailtheta"

n being the length of the string array, if n=0 or k>n or k<=0 return "invalid".

1. Please see the following numbers.

89 --> 81 + 92 = 89 \* 1

695 --> 62 + 93 + 54= 1390 = 695 \* 2

46288 --> 43 + 64+ 25 + 86 + 87 = 2360688 = 46288 \* 51

Given a positive integer n written as abcd... (a, b, c, d... being digits) and a positive integer p we want to find a positive integer k, if it exists, such as the sum of the digits of n taken to the successive powers of p is equal to k \* n.

**In other words:** Is there an integer k such as : (a ^ p + b ^ (p+1) + c ^(p+2) + d ^ (p+3) + ...) = n \* k

If it is the case we will return k, if not return -1.

**Note**: n, p will always be given as strictly positive integers.

1. Write a function that takes an (unsigned) integer as input, and returns the number of bits that are equal to one in the binary representation of that number.

**Example**: The binary representation of 1234 is 10011010010, so the function should return 5 in this case.

1. A Club has two categories of membership, Senior and Open. They would like your help with an application form that will tell prospective members which category they will be placed.

To be a senior, a member must be at least 55 years old and have a handicap greater than 7. In this club, handicaps range from -2 to +26; the better the player the lower the handicap.

**Input**

Input will consist of a list of lists containing two items each. Each list contains information for a single potential member. Information consists of an integer for the person's age and an integer for the person's handicap.

**Example Input**

[[18, 20],[45, 2],[61, 12],[37, 6],[21, 21],[78, 9]]

**Output**

Output will consist of a list of string values Open or Senior ) stating whether the respective member is to be placed in the senior or open category.

**Example Output**

["Open", "Open", "Senior", "Open", "Open", "Senior"]

1. You are given an array (which will have a length of at least 3, but could be very large) containing integers. The array is either entirely comprised of odd integers or entirely comprised of even integers except for a single integer N . Write a method that takes the array as an argument and returns this "outlier" N .

**Examples**

[2, 4, 0, 100, 4, 11, 2602, 36]

**Should return:** 11 (the only odd number)

[160, 3, 1719, 19, 11, 13, -21]

**Should return:** 160 (the only even number)

1. An isogram is a word that has no repeating letters, consecutive or non- consecutive. Implement a function that determines whether a string that contains only letters is an isogram.

Assume the empty string is an isogram. Ignore letter case.

is\_isogram("Dermatoglyphics" ) => true

is\_isogram("aba" ) => false

is\_isogram("moOse" ) =>false # -- ignore letter case