

CSO Assignment #3

Deadline: 11:59pm, 27th February, 2016 [Saturday]

NOTE: You have to write the complete code in each question (not just the function) which takes input from STDIN and writes output to STDOUT.

Question 1

Problem Statement: Given a string of alphabets as input, output a string after changing the case of alternate characters starting from the first one.

Sample:

Input:	HelloWorld
Output:	heLIOWOrLd

Question 2

Problem Statement: Given 2 integers x and n, write a function to recursively compute x raised to n.

You can read more about recursive exponentiation here :
https://en.wikipedia.org/wiki/Exponentiation_by_squaring

Input: Two integers x and n

Output: A single integer with value equal to $\text{pow}(x,n)$

Sample:

Input:	5 3
Output:	125

Also write an iterative function to compute x raised to n ($\text{pow}(x,n)$). Compare the performance of the recursive function with the iterative function. Which one do you think will work better when x and n have large values ?

Question 3

Problem Statement:

Given 'n', the number of elements, and an array, make a new array in memory address 100 and store the cumulative sum of the original array in the new array.

Sample:

Input:	5				
	6	4	3	8	2
Output:	6	10	13	21	23

Question 4

Problem Statement:

Implement a function `findMax()` that takes an array and finds the maximum element in it.

Sample:

Input:	5				
	4	6	4	8	5
Output:	8				