1) Write a program that changes all instances of “foo” to “bar” in a JSON object. You can use any programming language which supports dictionary datatype.

For example :

input JSON: { “a”: [{ “foo”: “foo” }] }

output : { “a”: [{ “bar”: “bar” }] }

Your program should work on any arbitrary JSON object and not just the test object given.

2) Consider a table composed of m x n cells, where m,n>0. Each cell of the table has a certain number of pebbles and a cell at i th row and j th column of the table is referred to as cell-(i,j). Such a table can be represented as a 2D array A[1..m, 1..n], where A[i,j] denotes the number of pebbles in cell-(i,j) and A[i,j] > 0 for all i,j. You start from cell-(1,1) and move towards the cell-(m,n) with a constraint that in each step you either go down or go right by one cell i.e. from cell-(i,j) you either go to cell(i+1,j) or cell-(i,j+1). Your goal is to move from cell-(1,1) to cell-(m,n) collecting the maximum number of pebbles.

For example, consider the table below with 4 x 5 cells.

8	11	7	9	3
22	13	5	8	11
9	15	23	4	7
11	1	4	25	17

The maximum number of pebbles collected when you move from cell-(1,1) to cell-(4,5) is 127 and the path that leads to it is given by: (1,1) -> (2,1) -> (2,2) -> (3,2) -> (3,3) -> (4,3) -> (4,4) -> (4,5)

i) What is the length of any path from cell-(1,1) to cell-(m,n).

ii) Write an algorithm to find maximum pebbles while going from cell-(1,1) to cell -(m,n).