# Question 1

Counting the numbers occurrences of each letter S, N, A, K, E, as

in the original sequence. And the string has a number of n letters.

Let

Clearly, the level of venom

Then, try to delete some of the letters we can get sequence:

{S S … S N N … N A A … A K K … K E E … E}

M

M

M

M

M

It is an example, maybe the sequence of the same letters would not in this order.

Firstly, try L = M, delete some letters and become the figure above, if succeed, the maximum venom = M

Else, if is cannot delete like the figure, we try to use binary search to find the optimal solution.

For Example, we first take and try to delete the letters.

According to binary search,

If works, take

If not works, try

If works try to check the , else check the

…..

And so on, until we can get the optimal solution.

As the binary search’s time complexity is and the string has n letters, this algorithm

runs in .