**Question 1**

Our aim is that given a DNA string, we need to maximise its venom level by deleting zero or more letters.

First, we sum each number of letters, in our string.

Since our DNA string must contain the **same quantity** of each letter for it to achieve non-zero venom level, and since we cannot add any letters, the maximum amount of each letter we can have is given by the smallest as shown above.

And so, the maximum venom level we can achieve is M: }

Now our plan is to use a **greedy strategy** to delete such letters in our original string such that the amount of each letter, to maximise .

The problem is that our string may not be in the order that is required.

So, the strategy is that we perform a **binary search** to check if our string fits the requirements, initially for . ( refers to the maximum quantity of each letter to achieve a non-zero venom level)

If it does, we return but if not, we continue and check for . If the requirement fits for , we check for , and continue halving and checking the respective side as described in order to find the largest .

And so, we run in time for the search through the string to find the quantity of each and for the binary search, resulting in a algorithm