Problem G. Grammarly

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	256 mebibytes

CauchySheep has a string s.

He looked at all its different non-empty substrings and added a directed edge from a to b if $|b| + 1 = |a|$ and b is a substring of a.

You need to calculate the number of simple paths starting from s in this graph, modulo 998 244 353.

Input

The first line of the input contains a string s consisting of lowercase Latin letters: the string CauchySheep has ($1 \le |s| \le 300\,000$).

Output

Output one integer: the number of simple paths starting from s in CauchySheep's graph, modulo 998 244 353.

Examples

standard input	standard output
abba	13
benbeipo	255
iqiiiiiiqq	300
aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa	35

Note