

Problem 1 – Regeh

You need to read a line from the console and **match everything** that is in **square brackets**. However, there are some rules that you need to follow:

- You must have **no whitespaces** inside the match.
- Inside the match you must have [(ASCII Symbols)<(Some digits)**REGEH**(Some digits)>(ASCII Symbols)]
- If you have **nested brackets** you need to **match the inner most**.

[asdSd[asdasd<4REGEH23>asdUsd]

After you find a match you must **extract the numbers** between the "<", ">" brackets. Then use this **number like index** to get character from input. Every **index** is the sum of all **previous indexes**. When the index is **larger** than the string length **start from the beginning** of the string. Continue that process until you traverse the string **enough times** for the index to fit.

Input

- On the first line you will receive input that may contain any character.

Output

- You must print on the console a **single line with characters**, that you find in the string

Constraints

- The line may **contain any character**
- Line length will be $1 < n < 1000000$
- Time limit: 0.3 sec. Memory limit: 16 MB.

Examples

Input	Output
[atdSd[asdasd<4REGEH22>asdusy] ***oopprefs[ew<16REGEH30>rdtr]pppp555b	Soft
[aadSd[[asdasd<4REGEH22>asdusy] ***oopprefs[ew<16REGEH30>rdtr]ppp555b [tU<1REGEH15>s]trneti!t[dsaf<3REGEH1>fdwss]	SoftUni!
[atdSd[<4REGEH22>asdusy] ***oopprefs[ew<16REGEH>rdtr]pppp555b	
[atdSd[<422>asdusy] ***oopprefs[ew<16REGEH>]pppp	