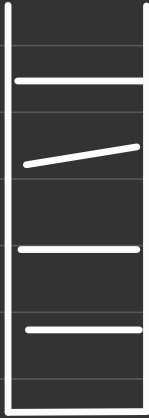# Stacks → Linear DS

LIFO

No random access

→ applications ?? →

↳ call stack
  undo / redo
  expression eval

Q. Given a String A & an integer B.

A is encoded & consist of lowercase english alphabets and numbers. A is encoded in a way where repetitions of substring is as substring followed by the count.

find the Bth character of the decoded string.

Ex A⟹ "ab2c3"   B=8   ⟶   N ≤ 10^5

ababc ababc ababc   ans⟹ "a"

ababc ababc ababc

(15)

→ (8rd char)

5 × 3 ——→ (15)   2   3rd

                      ababc

8 % 5 → 3

                        ab → a

                    ①   —→ 1 % (60)

2 × 2 → 4

3 % 2 —→ ①   2 × 1 → 2

                  (1 % 2) → 1

"ha 22" $K = S$

ha ha ha ha

$4 \times 2 \rightarrow 8$

ha ha $\quad$ 1st

$5 \text{ lo } 4 \rightarrow 1$

ha $\quad$ 1st

$2 \times 2 \rightarrow 4$

$1 \text{ do } 2 \rightarrow 2$

$\overset{0}{a}b2\overset{1}{c}3$

$\underline{\underline{O(N)}}$

$\underline{\underline{len = 15}}$

$K = 8$

$K = 9$

$(a,1), (b,2) (c,5)$

$\{ char, int \}$

$K = K \% 5 \rightarrow 9 \% 5 \rightarrow 4$

$K = K \% 2 \rightarrow 4 \% 2 \rightarrow 0$

Stack <pair>