

0 Look and say sequence

Print the N^{th} look and say sequence, a.k.a ant sequence.

1, 11, 12, 1121, 122111.... The sequence goes like this:

$1 \rightarrow 11(1 \text{ } \circlearrowleft \text{ } 1 \text{ 개}) \rightarrow 12(1 \text{ } \circlearrowleft \text{ } 2 \text{ 개}) \rightarrow 1121(1 \text{ } \circlearrowleft \text{ } 1 \text{ 개}, 2 \text{ 개 } 1 \text{ 개}) \rightarrow 122111(1 \text{ } \circlearrowleft \text{ } 2 \text{ 개}, 2 \text{ 개 } 1 \text{ 개}, 1 \text{ } \circlearrowleft \text{ } 1 \text{ 개})$

EXAMPLE:

```
3
12
```

1 Prime?

Given input $N(2 \leq N \leq 10,000,000,000)$, Print 'True' if N is a prime number. Print 'False' otherwise.

EXAMPLE:

```
1217
True
```

2 Wrd Shrtnr

Given input, remove vowels(a, e, i, o, u).

EXAMPLE:

```
chicken
chckn
```

3 Digit Counter

Given N , print the occurrence of each digit without using the Counter class.(The answer is similar to how Counter works)

EXAMPLE:

```
12353
0:0
1:1
2:1
3:2
4:0
5:1
6:0
7:0
8:0
9:0
```

4 Where are you?

We can easily get the maximum value of a list by $\text{max}(\text{lst})$.

But finding its index is not as easy. Write a program that prints the index of the maximum value. (Note that the index starts from 0).

```
10 3 5 100 9
3
```

5 Genetic Algorithm

Genetic Algorithm is an optimization technique that mimics the process of evolution and natural selection. This time, we are going to find the largest number in between $(0_{(2)}, 111111111_{(2)})$ using GA. The answer is obviously $111111111_{(2)}$, but lets see if natural selection can figure that out. Please fill in the *TODOs*. Reading this link would help: [유전알고리즘](#).

Download "genetic_skelton.py" to start.