Missing Integers (30%)

Problem ID: mt2p1

Write a program that extracts integers from an input string and finds all the missing integers i in the range $0 \leq i < n$, where n is the maximum integer in the input.

You are **not** allowed to use any import statement in your solution, except `import typing`.

Input

The input is one line l, containing a sequence of at most 10 tokens separated with whitespace. Each token t consists of a sequence of alphanumeric characters, where $1 \leq |t| \leq 2$.

Note: Your program is not supposed to validate this input, or refuse other input. This is just for your information about the input in the test cases. You do not need to expect input that does not meet these restrictions.

Output

The output consists of the following three lines:

1. The list T of tokens from the input string. Each token t in T is a string.
2. The list A of integers extracted from T, in the order they appear in T.
3. The list B of missing integers from A. For each member m in B, $0 \leq m < n$ where n is the maximum integer in A. The numbers in B should appear in ascending order.

Sample Input 1

```
1 5 3 9 7
```

Sample Output 1

```
['1', '5', '3', '9', '7']
[1, 5, 3, 9, 7]
[0, 2, 4, 6, 8]
```

Sample Input 2

```
a 3 5 10 bc 15 7 9
```

Sample Output 2

```
['a', '3', '5', '10', 'bc', '15', '7', '9']
[3, 5, 10, 15, 7, 9]
[0, 1, 2, 4, 6, 8, 11, 12, 13, 14]
```

Sample Input 3

```
5 4 1 2 3
```

Sample Output 3

```
['5', '4', '1', '2', '3']
[5, 4, 1, 2, 3]
[0]
```

Sample Input 4

```
a b1 C2 fG
```

Sample Output 4

```
['a', 'b1', 'C2', 'fG']
[]
[]
```