

Extreme Fizz Buzz

Fizz Buzz is a classic Computer Science problem about Selection. For an integer x, print:

- "Fizz" if x is only divisible by 3,
- "Buzz" if x is only divisible by 5,
- "FizzBuzz" if x is divisible by both 3 and 5,
- the number x if it is not divisible by both 3 and 5.

This problem is the extreme version of Fizz Buzz. You are given a list of K distinct integers A and a list of K characters S. Both lists are numbered from 1 to K. The integer A_i corresponds to the character S_i .

Denote B as the subset of A. There will be a rule for each possible subset: if an integer x is only divisible by all elements in B, print a string which is the concatenation of the corresponding character of each element in B, sorted by the index in ascending order. However, if B is an empty subset, print the first digit of x instead.

Does it look complicated? Do not worry, as it is just a generalization of the regular Fizz Buzz. For example, if A = [3, 5] and S = [F, B], you will get the normal Fizz Buzz problem. You can also check the Sample Test Cases for further understanding.

Your task is simple. Given the array A and S, with all rules from the subset of A, print the Extreme Fizz Buzz from 1 to N.

Format Input

The first line consists of 2 integers N and K.

The second line consists of a string S which has exactly K lower-case latin alphabet characters.

The third line consists of K integers A_1, A_2, \ldots, A_K .

Format Output

Output N lines. The i-th line is the Extreme Fizz Buzz of i, where i is integer from 1 to N.

[©] School of Computer Science - BINUS, 2020. No part of the materials available may be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without prior written consent of School of Computer Science - BINUS. Any other reproduction in any form without the permission of School of Computer Science - BINUS is probihited. For those who violated this disclaimer, academic sanctioned can be enforced.



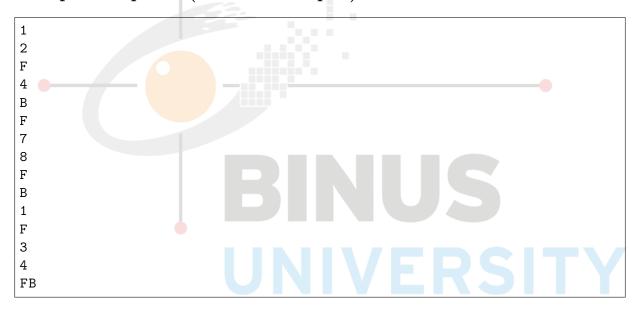
Constraints

- $1 \le N, K \le 100000$
- $1 \le A_i \le 100000$
- \bullet It is guaranteed that the integers in A are distinct
- \bullet It is guaranteed that the characters in S are upper-case latin alphabet characters

Sample Input 1 (standard input)

```
15 2
FB
3 5
```

Sample Output 1 (standard output)



Sample Input 2 (standard input)

```
15 2
BF
3 5
```

[©] School of Computer Science - BINUS, 2020. No part of the materials available may be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without prior written consent of School of Computer Science - BINUS. Any other reproduction in any form without the permission of School of Computer Science - BINUS is probihited. For those who violated this disclaimer, academic sanctioned can be enforced.



Sample Output 2 (standard output)

```
1 2 B 4 F B 7 8 B F 1 B 3 4 B F
```

Sample Input 3 (standard input)

```
13 3
JLB
2 4 3
```

Sample Output 3 (standard output)



[©] School of Computer Science - BINUS, 2020. No part of the materials available may be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without prior written consent of School of Computer Science - BINUS. Any other reproduction in any form without the permission of School of Computer Science - BINUS is probihited. For those who violated this disclaimer, academic sanctioned can be enforced.



Explanation

In the first sample, the given rule is similar to the regular Fizz Buzz. However, print "F" instead of "Fizz", print "B" instead of "Buzz", print "FB" instead of "FizzBuzz", and print the first digit of x instead of the number x.

In the second sample, the given rule is similar to the regular Fizz Buzz. However, print "B" instead of "Fizz", print "F" instead of "Buzz", and print "BF" instead of "FizzBuzz", print the first digit of x instead of the number x.

In the third sample, 2 corresponds to "J", 4 corresponds to "L", and 3 corresponds to "B". Using the given A and S, there are exactly 8 rules, which are also the number of subset in A:

- If x is only divisible by 2, print "J"
- If x is only divisible by 4, print "L"
- If x is only divisible by 3, print "B"
- If x is only divisible by 2 and 4, print "JL"
- If x is only divisible by 2 and 3, print "JB"
- If x is only divisible by 4 and 3, print "LB"
- If x is only divisible by 2, 4, and 3, print "JLB"
- If x is **not** divisible by 2, 4, and 3, print the first digit of x instead

UNIVERSITY



Extreme Fizz Buzz

Fizz Buzz adalah permasalahan Ilmu Komputer klasik tentang Percabangan. Untuk sebuah bilangan bulat x, cetak:

- "Fizz" jika x hanya dapat habis dibagi oleh 3,
- "Buzz" jika x hanya dapat habis dibagi oleh 5,
- "FizzBuzz" jika x hanya dapat habis dibagi oleh 3 dan 5,
- bilangan x jika x tidak dapat habis dibagi oleh 3 dan 5.

Soal ini adalah versi ekstrim dari Fizz Buzz. Anda diberikan K buah bilangan bulat berbeda A, dan K buah karakter S. Keduanya dinomori dari 1 hingga K. Bilangan A_i berkorespondensi dengan karakter S_i .

Sebut B adalah himpunan bagian dari A. Akan terdapat sebuah peraturan untuk masingmasing himpunan bagian: jika sebuah bilangan bulat x hanya dapat habis dibagi oleh bilangan anggota dari B, cetak sebuah string yang merupakan gabungan dari karakter yang berkorespondensi dengan masing-masing anggota B, yang diurutkan secara menaik berdasarkan indeks nya. Akan tetapi, jika B merupakan himpunan kosong, cetak digit satuan dari x.

Apakah terlihat rumit? Jangan khawatir, karena ini hanya generalisasi dari Fizz Buzz biasa. Sebagai contoh, jika A = [3, 5] dan S = [F, B], Anda akan mendapatkan Fizz Buzz yang biasa. Anda juga dapat melihat contoh kasus uji untuk pemahaman lebih lanjut nya.

Tugas Anda sederhana. Diberikan daftar bilangan bulat A dan daftar karakter S, dengan semua peraturan dari himpunan bagian dari A, cetak Extreme Fizz Buzz dari 1 hingga N.

Format Input

Baris pertama berisi 2 buah bilangan bulat N dan K.

Baris kedua berisi sebuah string S yang memiliki tepat K karakter alfabet latin dalam huruf kecil.

Baris ketiga berisi K buah bilangan bulat $A_1, A_2, \ldots, A_K.4$

Format Output

Keluarkan N buah baris. Baris ke-i adalah Extreme Fizz Buzz dari i, dimana i adalah bilangan bulat dari 1 hingga N.

[©] School of Computer Science - BINUS, 2020. No part of the materials available may be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without prior written consent of School of Computer Science - BINUS. Any other reproduction in any form without the permission of School of Computer Science - BINUS is probihited. For those who violated this disclaimer, academic sanctioned can be enforced.



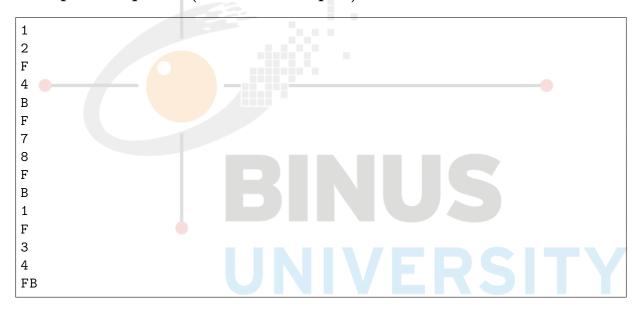
Constraints

- $1 \le N, K \le 100000$
- $1 \le A_i \le 100000$
- ullet Dijamin bahwa bilangan-bilangan dalam A adalah unik
- ullet Dijamin bahwa karakter penyusun S adalah alfabet latin dalam huruf besar

Sample Input 1 (standard input)

```
15 2
FB
3 5
```

Sample Output 1 (standard output)



Sample Input 2 (standard input)

```
15 2
BF
3 5
```

[©] School of Computer Science - BINUS, 2020. No part of the materials available may be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without prior written consent of School of Computer Science - BINUS. Any other reproduction in any form without the permission of School of Computer Science - BINUS is probihited. For those who violated this disclaimer, academic sanctioned can be enforced.



Sample Output 2 (standard output)

```
1 2 B 4 F B 7 8 B F 1 B 3 4 B F
```

Sample Input 3 (standard input)

```
13 3
JLB
2 4 3
```

Sample Output 3 (standard output)



[©] School of Computer Science - BINUS, 2020. No part of the materials available may be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without prior written consent of School of Computer Science - BINUS. Any other reproduction in any form without the permission of School of Computer Science - BINUS is probihited. For those who violated this disclaimer, academic sanctioned can be enforced.



Explanation

Pada contoh kasus uji pertama, peraturan yang ada mirip dengan Fizz Buzz biasa. Akan tetapi, cetak "F" alih-alih dari "Fizz", cetak "B" alih-alih dari "Buzz", cetak "FB" alih-alih dari "FizzBuzz", dan cetak digit satuan dari x alih-alih dari bilangan x.

Pada contoh kasus uji kedua, peraturan yang ada mirip dengan Fizz Buzz biasa. Akan tetapi, cetak "B" alih-alih dari "Fizz", cetak "F" alih-alih dari "Buzz", cetak "BF" alih-alih dari "FizzBuzz", dan cetak digit satuan dari x alih-alih dari bilangan x.

Pada contoh kasus uji ketiga, 2 berkorespondensi dengan "J", 4 berkorespondensi dengan "L", dan 3 berkorespondensi dengan "B". Dengan menggunakan A dan S, terdapat tepat 8 buah peraturan, yang mana juga merupakan banyaknya himpunan bagian dari A:

- Jika x hanya dapat habis dibagi dengan 2, cetak "J"
- Jika x hanya dapat habis dibagi dengan 4, cetak "L"
- Jika x hanya dapat habis dibagi dengan 3, cetak "B"
- Jika x hanya dapat habis dibagi dengan 2 dan 4, cetak "JL"
- Jika x hanya dapat habis dibagi dengan 2 dan 3, cetak "JB"
- Jika x hanya dapat habis dibagi dengan 4 dan 3, cetak "LB"
- Jika x hanya dapat habis dibagi dengan 2, 4, cetak 3, cetak "JLB"
- Jika x tidak dapat habis dibagi dengan 2, 4, dan 3, cetak digit satuan dari x

UNIVERSITY