Programming Competition Test

Duration: 2 hours   Total Marks: 100

Instructions

1. This test contains algorithmic problems similar to those found on LeetCode or HackerRank.

2. Use efficient algorithms to avoid timeouts; naive solutions may not receive full marks.

3. Submit solutions in C++, Python, or Java.

4. For each problem, write a function or program according to the specified input/output format.

5. Clearly comment your code if necessary.

Problem 6(.7): Six Seven

Difficulty: Easy

You are given a string S composed of only the characters '6', '7', 'A', 'B', and '#' (without the quotation marks). This string is processed from left to right, and you must maintain a sequence of chracters that changes according to these rules:

- 6 - add a 6 to the end of the sequence

- 7 - if the sequence is non-empty and its last chracter is '6', remove that last '6', otherwise, add '7' to the end of the sequence

- A - reverse the sequence

- B - add a duplicate of the current sequence to the end of it

- # - clear the sequence

Input format:

- The first line consists of the string S. The string consists only of the characters 6, 7, A, B, and #.

Output format:

- Output a single line containig the final form of the sequence. If the sequence is empty at the end, output "EMPTY" (without the quotations).

Example(s):

```
Input 1:
67A6
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Output 1:
6
```

```
Input 2:
66B7
```

```
Output 2:
666
```

```
Input 3:
7A7#
```

```
Output 3:
EMPTY
```