**Contest Code:** SNCK1B21 **Problem Code:** BINFLIP2

**Read problem statements in Mandarin Chinese Vietnamese, and Russian**

You are given a binary string $S$. You would like to make every character of $S$ equal to `'0'`.

To achieve this goal, you are allowed to perform two types of operations on $S$:

- Select a substring $T$ of $S$ of length $3$ such that not all characters of $T$ are the same (i.e, $T$ must be one of `"001"`, `"010"`, `"011"`, `"100"`, `"101"` and `"110"`), and flip all its characters (convert `'1'` to `'0'` and `'0'` to `'1'`).
- Select a single character of $S$ and flip it.

There is an extra constraint imposed on the operations: The first operation may be of either type, but **no two consecutive operations are allowed to be of the same type.**

Given $S$, find a way to convert all characters to `'0'` using at most $|S|$ operations or report that it is impossible. It can be proved that if every character of $S$ can be made `'0'`, the conversion can be done using no more than $|S|$ operations.

If multiple constructions exist, print any of them. In particular, note that you **do not need to minimize** the number of operations used; any conversion using no more than $|S|$ operations will be accepted.

**Input Format**

- The first line contains a single integer $T$, denoting the number of testcases. The description of $T$ testcases follows.
- The first and only line of each testcase contains a string $S$.

**Output Format**

For each testcase, first output a single line containing `"YES"` if it is possible to convert the string $S$ to all `'0'`-s; otherwise print `"NO"`.

If the answer is `"YES"`, print the number of operations you are going to perform, $X$, on the second line.

Then, if $X > 0$, print $X + 1$ lines describing the operations performed formatted as follows:

- The first line contains a single integer $1$ or $2$, denoting whether your first operation is of type $1$ or type $2$ respectively.
- The next $X$ lines describe the operations, where
  - If you perform a type $1$ operation on the length $3$ substring starting at position $i$, print $i$.
  - If you perform a type $2$ operation on position $i$, print $i$.

Note that the operations alternate between types $1$ and $2$, with the first operation being of the type you specify.

**The string is assumed to be zero-indexed, so a type $1$ operation must satisfy $0 \leq i \leq |S| - 3$ and a type $2$ operation must satisfy $0 \leq i \leq |S| - 1$.**

You may print each character of the string in uppercase or lowercase (for example, the strings "yEs", "yes", "Yes" and "YES" will all be treated as identical).

You will receive a 'Wrong Answer' verdict if any of the following happen:

- The number of operations is more than $|S|$
- A type $1$ operation is applied on a substring whose characters are all the same
- Any operation is performed at an invalid index (valid indices are mentioned above, in bold)
- After performing all $X$ operations, $S$ still contains a `'1'`

**Constraints**

- $1 \leq T \leq 5 \cdot 10^3$
- $3 \leq |S| \leq 10^5$
- $S$ contains only characters `'0'` and `'1'`.
- Sum of $|S|$ over all tests is atmost $10^5$.

**Sample Input 1**

```
3
010
110
1111
```

**Sample Output 1**

```
YES
1
2
1
YES
2
1
0
2
NO
```

**Explanation**

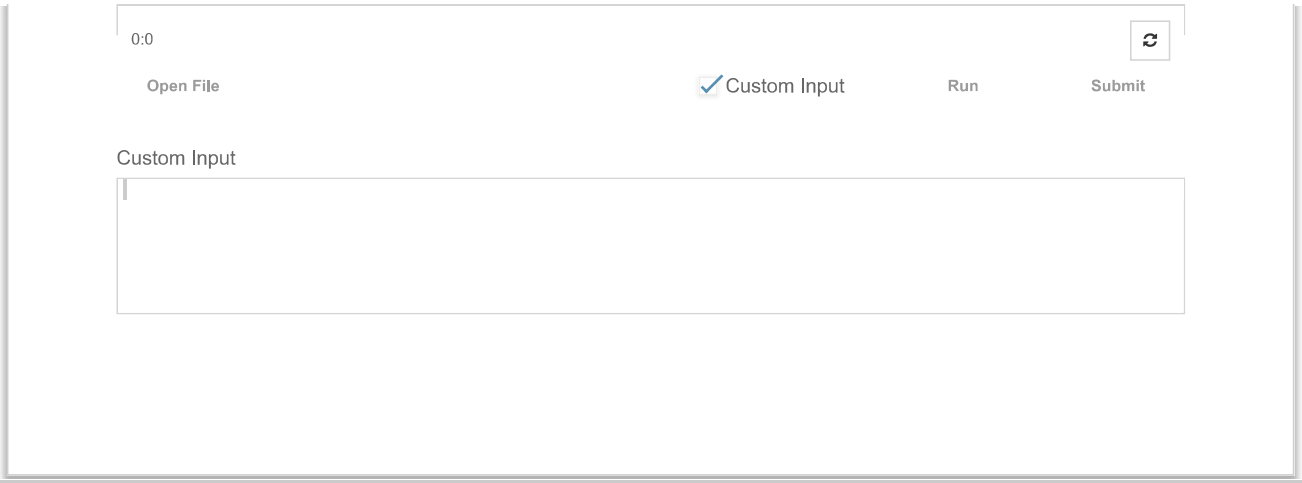
**Test Case $1$:** Perform one type $2$ operation to flip index $1$, with the resulting string being `"000"`

**Test Case $2$:** Perform a type $1$ operation on the substring starting at index $0$ to obtain the string `"001"`. Then, perform a type $2$ operation on index $2$ to obtain `"000"`.

**Test Case $3$:** It can be proved that no sequence of moves exists such that the final string is all zeroes.

PYTH 3.6 (Python 3.6) Code gets autosaved every second

```
1  # cook your dish here
2
```




CodeChef is a competitive programming community

About CodeChef Contact Us

The time now is: 07:23:43 AM
Your IP: 49.204.136.6



**CodeChef - A Platform for Aspiring Programmers**

CodeChef was created as a platform to help programmers make it big in the world of **algorithms**, **computer programming**, and **programming contests**. At CodeChef we work hard to revive the geek in you by hosting a **programming contest** at the start of the month and two smaller programming challenges at the middle and end of the month. We also aim to have training sessions and discussions related to **algorithms**, **binary search**, technicalities like **array size** and the likes. Apart from providing a platform for **programming competitions**, CodeChef also has various algorithm tutorials and forum discussions to help those who are new to the world of **computer programming**.

**Practice Section - A Place to hone your 'Computer Programming Skills'**

Try your hand at one of our many practice problems and submit your solution in the language of your choice. Our **programming contest** judge accepts solutions in over 55+ programming languages. Preparing for coding contests were never this much fun! Receive points, and move up through the CodeChef ranks. Use our practice section to better prepare yourself for the multiple **programming challenges** that take place through-out the month on CodeChef.

**Compete - Monthly Programming Contests, Cook-off and Lunchtime**

Here is where you can show off your **computer programming skills**. Take part in our 10 days long monthly coding contest and the shorter format Cook-off and Lunchtime **coding contests**. Put yourself up for recognition and win great prizes. Our **programming contests** have prizes worth up to INR 20,000 (for Indian Community), $700 (for Global Community) and lots more CodeChef goodies up for grabs.

**Programming Tools**
- Online IDE
- Upcoming Coding Contests
- Contest Hosting
- Problem Setting
- CodeChef Tutorials
- CodeChef Wiki

**Practice Problems**
- Easy
- Medium
- Hard
- Challenge
- Peer
- School
- FAQ's

**Initiatives**
- Go for Gold
- CodeChef for Schools
- College Chapters
- CodeChef for Business

**Policy**
- Terms of Service
- Privacy Policy
- Refund Policy
- Code of Conduct
- Bug Bounty Program