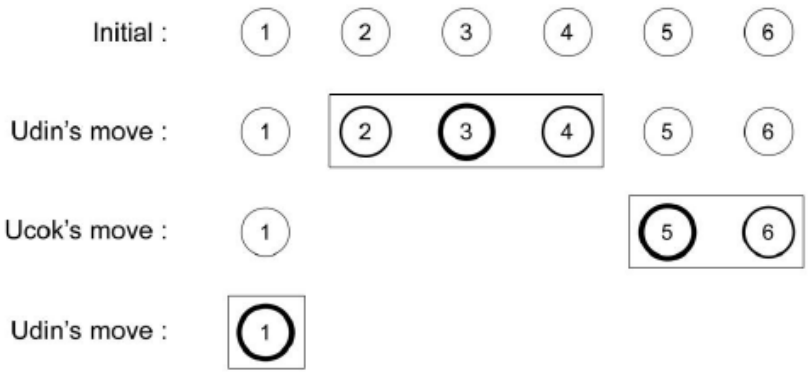
7215 Udin and Ucok

There are stones numbered from 1 to N, lined up orderly in a single line with stone #1 at the left most and stone #N at the right most. Udin and Ucok play alternately, and Udin plays first. In each turn, player selects exactly one stone among the existing one. The selected stone **and** its immediate adjacent stones to the left and right (**if any**), are thrown away. Player who cannot make any move loses the game; in other words, player who makes the last move wins.

Consider the following example play for $N = 6$.



Play explanation. First, Udin selects stone #3, thus removes stone [2, 3, 4], leaving [1] and [5, 6]. Next, Ucok selects stone #5, thus removes [5, 6] (note: stone #4 has been removed before) leaving [1]. Finally, Udin selects stone #1 and removes [1] (note: there's no stone to the left of #1, and stone #2 has been removed before) and wins the game.

For $N = 6$, Udin will always win as long as he does not select stone #2 or #5 in his first move. For example, let Udin selects stone #2, thus removes stone [1, 2, 3], leaving [4, 5, 6]. Ucok can win the game in his turn simply by selecting stone #5 and removes all the remaining stones. Meanwhile, if Udin selects stone #1, #3, #4, or #5 in his first move, there's no way for Ucok to win the game. Therefore, we call $N = 6$ as a winning position for Udin (there exists a sure-win strategy for Udin). On the other hand, if $N = 4$, then there's no sure-win strategy for Udin, while there is at least one for Ucok. Thus, we call $N = 4$ as a winning position for Ucok. In this kind of game, it is guaranteed that exactly one of the players has a sure-win strategy.

Given N, determine whether N is a winning position for Udin or Ucok, i.e. whether there is a sure-win strategy for either Udin or Ucok.

Input

The first line of input contains an integer T ($T \leq 10,000$) denoting the number of cases. Each case contains one integer: N ($1 \leq N \leq 1,000,000,000$) in a line, denoting the number of initial stones in the game.

Output

For each case, output '`Case #`X`:  `Y' (without quotes) in a line where X is the case number (starts from 1), and Y is either '`UDIN`' or '`UCOK`' (without quotes) representing which player has the sure-win strategy for the respective input.

Note:

- Explanation for 1st sample case

  Udin needs to select stone #2 in his first move, thus removing [1, 2, 3], and win the game in one turn.

- Explanation for 2nd sample case

  Whichever stone selected by Udin cannot make him win in one turn.

  – Selecting stone #1, removing [1, 2], leaving [3, 4].
  – Selecting stone #2, removing [1, 2, 3], leaving [4].
  – Selecting stone #3, removing [2, 3, 4], leaving [1].
  – Selecting stone #4, removing [3, 4], leaving [1, 2].

  On the other hand, Ucok can win the game in his turn by selecting whichever stone remains and removes all the remaining stones.

Sample Input

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7
3
4
6
100
110
938
1041
```

Sample Output

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Case #1: UDIN
Case #2: UCOK
Case #3: UDIN
Case #4: UDIN
Case #5: UCOK
Case #6: UCOK
Case #7: UDIN
```