Problem H. Honeycomb Havoc

Source file name:	Honey.c, Honey.cpp, Honey.java, Honey.py
Input:	`standard input`
Output:	`standard output`
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Honeycomb Havoc is a Minigame found in Mario Party 2. In this game, players queue up and take turns below a tree with various types of fruits and honeycombs. On their turn, each player selects one of the two options: Take the next 1 or 2 items from the Tree. If the player gets only fruits, then keeps playing and go back to the end of the queue. Otherwise, if the player gets a honeycomb, it will be eliminated and wait outside up the end of the game. The player who remains in the queue when all others are eliminated wins the game.

Some rules:

- If the player selects two items, but the first one is a honeycomb, then it will be eliminated immediately and won't get the extra item.
- Before the minigame starts, a random number of fruits and honeycombs are generated and arranged in a line. The players will get the items in the order they were generated. If, for some reason, there isn't a winner after the items over, only honeycombs will be delivered from the tree to finish the game.
- The initial queue of players is ordered by the number of each player. Player 1 is first, player 2 is second and so on.
- A player controlled by the CPU will always select a number of items each turn depending on the player's number:
  - Player 2 will always take 1 item
  - Player 3 will always take 2 items
  - Player 4 will alternate. In its first turn it will take 1 item, then 2 items, then 1 again and so on.

Long story short, Bob is about to win the whole game, but he needs to win this last minigame and he will make anything for achieve it. He is playing against other three players controlled by the CPU. All the players can see the arranged line of items, so Bob would like to know if he can win the game choosing efficiently the numbers of items he must select in each of his turns.

Input

The first line of input contains a number T ($T <= 100$) with the number of test cases. Each case starts with a line containing two integers: N ($1 \leq N \leq 1000$), the number of items from the tree. The second line will contain a string of size N containing only letters "F" and "H" where F is a fruit and H is honeycomb. The order of each letter is the order of the items. Item i will be the $i-th$ delivered by the tree.

Output

Print a single line with word $POSSIBLE$ if Bob can win the game. Otherwise print $IMPOSSIBLE$

Examples

Input	Output
6 5 FHHFH 6 FFFFFF 5 FFFFF 7 FFFFFFF 8 FFHHFFHF 5 HFFFF	IMPOSSIBLE POSSIBLE IMPOSSIBLE POSSIBLE POSSIBLE IMPOSSIBLE

Image source https://www.mariowiki.com/Honeycomb_Havoc