

## Problem C

John and Brus are training for a card game tournament. During his off-time, Brus likes to occupy himself with the following game. The game is played with a subset of a standard deck of 52 distinct cards. Each card can be represented by a two-character string, where the first character is the rank ('2'-'9', 'T', 'J', 'Q', 'K', or 'A') and the second character is the suit ('S' for Spades, 'C' for Clubs, 'D' for Diamonds or 'H' for Hearts). All Spades and Clubs are black, and all Diamonds and Hearts are red. For example, the Jack of Spades is black and is represented as "JS", and the Nine of Hearts is red and is represented as "9H".

You are given the cards that Brus is playing with. He wants to place all of these cards in a line such that every pair of neighboring cards has the same rank or the same color (or both). Return the number of different ways he can do this modulo 1234567891.

The first line of the input contains the  $t$ , the number of test cases. Each test case begins with  $n$ , the number of cards, followed by  $n$  lines, containing the description of the cards.

### Restrictions:

- $1 \leq n \leq 50$
- Each description of a card will contain exactly two characters, where the first character is '2'-'9', 'T', 'J', 'Q', 'K' or 'A', and the second character is 'S', 'C', 'D' or 'H'.
- All cards will be distinct.

### Example:

Input:	Output:
1	2
3	
KH	
QD	
KC	