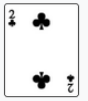
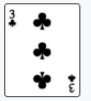
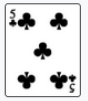
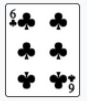
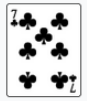
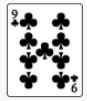
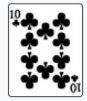
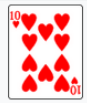
Exercise on Z-Algorithm and KMP-Algorithm
Matching Machine of Poker Cards in a Casino

Let us consider a computer game in a casino where **a sequence of N random cards** are generated. Each card is from the classical set of 52 poker cards. Multiple repetitions of cards are allowed so N may be greater than 52.

The game generates a **sequence of M random cards** for the player such that **M < N.**

The player wins iff there one or more *occurrences* of his sequence of M random cards in the first sequence of N cards generated by the computer.

	Ace	2	3	4	5	6	7	8	9	10	Jack	Queen	King
Clubs													
Diamonds													
Hearts													
Spades													

<u>Your Task is to code a program that must modify and use Z-Algorithm and/or KMP-Algorithm to find occurrences of the player's card sequence into the computer's card sequence.</u>

Each card is read from input in the format: SUIT#RANK where # is the number sign character (ASCII 35).
Some examples:

CLUBS#ACE

HEARTS#JACK

SPADES#9

...

SEE INPUT/OUTPUT EXAMPLE IN THE NEXT SLIDE.

Hint:
The trick in the problem is to consider the cards as symbols from an alphabet.
But now, our alphabet has 52 different symbols.

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EXAMPLE INPUT:

computer


CLUBS#ACE

CLUBS#ACE

CLUBS#ACE

HEARTS#JACK

SPADES#9

SPADES#9

HEARTS#JACK

SPADES#9

player


HEARTS#JACK

SPADES#9

EXAMPLE OUTPUT:

The word "WIN" followed by the positions of the occurrences of the player's sequence in the computer's sequence. For the input above we have the output: **WIN 3 6**

(If there were no occurrences simply print **LOSS**)

BONUS: Extend your solution by considering that the player may have exactly maximum one JOKER card in his sequence which can match with any card.
If we consider the computer's sequence above and now the player's sequence is:

player


CLUBS#ACE


JOKER

...we have the output:

WIN 0 1 2