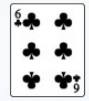
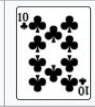
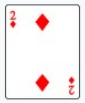
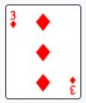
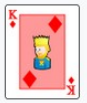
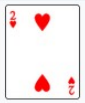
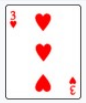
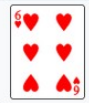
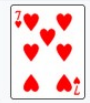
Exercise on Z-Algorithm and KMP-Algorithm
Matching Machine of Poker Cards in a Casino

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 a card are allowed.

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

The player wins iff there one or more ***partial 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 *partial 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

...

A PARTIAL OCCURRENCE HAPPENS WHERE EACH CARD IN THE PLAYER'S SEQUENCE HAS THE SAME SUIT OR THE SAME RANK THAN A SUBSTRING IN THE COMPUTER'S SEQUENCE.

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.

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

EXAMPLE INPUT:

computer sequence


CLUBS#ACE

CLUBS#ACE

CLUBS#ACE

HEARTS#JACK

SPADES#9

SPADES#9

HEARTS#JACK

SPADES#9

player sequence


HEARTS#JACK

SPADES#9

EXAMPLE OUTPUT:

The program should print each partial occurrence (if found) and its position in the computer sequence.

WIN 3 6