```
3

Output：
7
Move sheet from A to C
Move sheet from A to B
Move sheet from C to B
Move sheet from A to C
Move sheet from B to A
Move sheet from B to C
Move sheet from A to C
```

18. Use linked list to implement palindrome

Please make a palindrome. (word that reads the same when you reverse it). The input consist of several lines ending with EOF. Each line contains a non-empty string of upper case and lower case English letters (‘A’-‘Z’ and ‘a’-‘z’). The length of the string is less than or equal to 100,000.

Note: You must use linked lists; otherwise, no points will be given.

Test Case

Please test your program with Input, and then check the answers with Output.

Listing 18 : Use linked list to implement palindrome

```
Input：
Aawweeaa
Abba
asdfghj

Output：
aawweeaaeewwaa
abbabba
asdfghjhgfdsa
```

19. Palindrome

Given a string with length of *n*, reverse every M letters in the string using a stack. For example, given a string “cardogbug” and if *M* =3, the first three letters are reversed to “rac”, the next three letters are reversed to “god”, and the last three letters are

reversed to “gub”. As a result, the output is “racgodgub”. If M > *n*, output the original string without inversing it.

Note: You must implement it by a stack; otherwise, no points will be given.

Test Case

Please test your program with Input, and then check the answers with Output.

Listing 19 : Palindrome

```
Input ：
10 ASDFASDFA
3 DFJIDOJBIICVJOZXOJQSA
Output ：
ASDFASDFA
JFDODIIBJVCIZOJJOXASQ
```

20. KMP (2)

Please read the given file (input.txt) that involves the NAME and INDEX data. At first, you should initiate the MAIN_STRING as ‘NULL’. You then will use MAIN_STRING to store the read data from the file (input.txt). The value of NAME is the data you should insert to the MAIN_STRING, and the INDEX data represents the index position where you should insert at the next time. For an instance, after the initiation, you read ‘jim’ and ‘1’ from file (input.txt), hence, the MAIN_STRING will be ‘jim’. Then, you keep reading ‘tom’ and ‘2’ from the file(input.txt), you should insert ‘tom’ into the ‘1’ position of the current MAIN_STRING, therefore, the MAIN_STRING will be ‘jtomim’. The last line “P:aaaaa” in the input file is used to implement the KMP algorithm.

After read file, implement the KMP algorithm to preprocess a read MAIN_STRING, and print the LSP[] which is used to skip characters while matching.

Listing 19 : Palindrome

```
Input ：
jim,1
tom,2
patty,3
helen,4
aaaaa,4
P:aaaaa
```