<Advanced C Programming and Lab> Ch 10. Strings

※ Note

- If not mentioned, assume that there is no additional inputs.
- If not mentioned, do not print a space in the beginning and end of each line.
- In input and output examples, after ↦ symbol is to explain the input and output.
- In output examples, □ symbol indicates a space.

section1 [Problem 1] Read a string (without spaces) and print lower-case letters only.

- Length of a string is ≤20

Input Example 1	Output Example 1
HelloWorld	elloorld

Input Example 1	Output Example 1
AbCdEEff	bdff

section3 [Problem 2] Read an integer, convert each digit into a character, store the characters as a string in reverse order, and print the string using the string conversion specification. Do not use a loop.

- The integer is up to a hundred-digit number

Input Example 1	Output Example 1
9756	6579

Input Example 2	Output Example 2
12345	54321

section3 [Problem 3] Read a string (without spaces) and print the string as shown below (shift right by one character).

- The length of a string is ≤100

Input Example 1	Output Example 1
abcde	abcde bcdea cdeab deabc eabcd

section3 [Problem 4] Read 2 strings (including spaces) and check whether the two strings match to each other.

- Do not use library functions strlen( ) and strcmp( )
- The length of a string is ≤100
- Print the length of the first string and print 1 if two are matched, otherwise 0.

Input Example 1	Output Example 1
Hello world	5 0

Input Example 2	Output Example 2
programming programming	11 1

section4 [Problem 5] Read two strings str1 and str2 (without spaces).

- Print the length of the first string and print 1 if str1 includes str2, otherwise 0
- The length of str1 is ≤80
- The length of str2 is ≤10

Input Example 1	Output Example 1
Hello world	5 0

Input Example 2	Output Example 2
Helloworld low	10 1

section5 [Problem 6] Read two strings str1 (including spaces) and str2 (without spaces) and print how many times str2 appears in str1.

- The length of a string is ≤100
- AA appears in AAA once. AA appears in AAAA twice. No character is counted twice.

Input Example 1	Output Example 1
Prrogram prrogram rr	2

Input Example 2	Output Example 2
Helloworld low	1

section5 [Problem 7] Read an integer N. Read N strings (including spaces). Print the shortest length string (including spaces). The maximum length of a string is 100.

Input Example 1	Output Example 1
4 ↦ N=4: 4 strings Program Good This is string language	Good

section3 [Problem 8] Read two strings str1 and str2 (without spaces) and one integer p. Insert str2 into str1 at the position designated by the integer p.

- The maximum length of a string is 20
- Integer p is less than or equal to the length of str1
- If p = 0, insert str1 in front of str2
- Do not use an additional string. Use str1 to print the result.

Input Example 1	Output Example 1
abcde ↦ str1 123 ↦ str2 2 ↦ where to insert	ab123cde

Input Example 2	Output Example 2
ABCD ↦ str1 abc ↦ str2 4 ↦ where to insert	ABCDabc

section3 [Problem 9] Extending Problem 8. Read one more integer to indicate whether reverse the string or not.

- Following the rules of problem 8

  0: forward order, 1: reverse order

Input Example 1	Output Example 1
abcde ↦ str1 123 ↦ str2 2 ↦ where to insert 0 ↦ forward order	ab123cde

Input Example 2	Output Example 2
abcde ↦ str1 123 ↦ str2 2 ↦ where to insert 1 ↦ reverse order	ab321cde

section4 [Problem 10] Read two strings (without spaces) using scanf( ) and concatenate two strings and print them. Compare two strings using the lexicographic order, put the bigger string first.

- The maximum length of a string is 50
- Lower-case letters are only received

Input Example 1	Output Example 1
sejong university	universitysejong

section3 [Problem 11] Read an integer N and print it in english as shown below.

- N < 10000
- Print as shown below
  - Numbers (0-9): one two three four five six seven eight nine
  - Use THO, HUN, TEN to represent a thousand, hundred, and ten
  - If a digit is 0, ignore it

Input Example 1	Output Example 1
3496 ↦ N	three THO four HUN nine TEN six

Input Example 2	Output Example 2
520	five HUN two TEN

section4 [Problem 12] Read a string (without spaces) and chech whether it is palindrome or not.

- Define and use a function check()
  - arguments: a pointer variable containing the starting address of a string
  - Check whether a string is a palindrome or not
  - Case sensitive (Treat upper- and lower-case letters differently)
  - Return type: 1 if a palindrome, 0 otherwise
- main()
  - Read a string
  - The maximum length of a string is 30
  - Print the length of the received string
  - Call check() and print whether a string is a palindrome.

Input Example 1	Output Example 1
Hello ↦ not a palindrome	5 0 ↦ Length 5, not a palindrome 0

Input Example 2	Output Example 2
aibohpphobia	12 1