**Lab 3**

1. Given a text, find the largest number of consecutive digits in it.

2. Given a text, determine if it contains characters other than letters and spaces.

3. Given a text, if there is no * character in the text, then leave this text unchanged, otherwise each of the small Latin letters preceding the first occurrence of the * character should be replaced by the number 3.

4. Given a text, if there is no + symbol in the text, then leave this text unchanged, otherwise replace each of the small Latin letters preceding the first occurrence of the + symbol with the - symbol .

5. Given a text, if it does not contain small Latin letters, then leave it unchanged, otherwise each of the characters following the first group of small Latin letters should be replaced with a dot.

6. Given a natural number n ( n < =1000). Write down this number in Russian words (seventeen, two hundred and fifty three, one thousand, etc. )

7. A natural number n is given , equal to the price of some commodity expressed in tiyns, for example , 317, 5005, 100, etc. Express the price in tenge and tiyn, for example, 3 tenge 17 tiyn, 50 tenge 05 tiyn , 1 tenge 00 tiyn , etc. (the number of kopecks is always written in two digits).

8. A text is given, each character of which can be a small letter, a number, or one of the signs +, -, *. A group of letters is a collection of sequentially arranged letters that is not immediately preceded or immediately followed by a letter. Similarly, we define a group of digits and a group of characters.

   - one occurs in the given text .
   - Find out if it is true that in the given text there are more groups of letters than groups of characters.


9. A text is given, each character of which can be a small letter, a number, or one of the signs +, -, *. A group of letters is a collection of sequentially arranged letters that is not immediately preceded or immediately followed by a letter. Similarly, we define a group of digits and a group of characters.

   - Count the number of occurrences of the letter f in the first three groups of letters (assuming that the text contains at least three groups of letters).
   - Find the number of such groups of letters that begin and end with the same letter.

10. A text is given, each character of which can be a small letter, a number, or one of the signs +, -, *. A group of letters is a collection of sequentially arranged letters that is not immediately preceded or immediately followed by a letter. Similarly, we define a group of digits and a group of characters.

Find all such groups of letters that contain the letter a at least twice.

Find the longest group of digits. if several groups have this maximum length, then take the first one in order.

11. Text is given. If the first character of the text is not a small Latin letter, then leave it unchanged. If this is a small Latin letter, but the initial group of small Latin letters is not followed by a number, then also leave it unchanged. Otherwise, each digit belonging to the group of digits following the initial group of small Latin letters is replaced by the symbol *.

12. Convert an expression (i.e., a special type of text) made up of numbers and signs of four arithmetic operations (addition, subtraction, multiplication, division) into a postfix form. In postfix form, the operands are written first, and then the sign of the operation.

Examples

| regular entry | Postfix notation |
| --- | --- |
| 3+4 | 34+ |
| (5-4)+2 | 54-2+ |
| 2*(3+4)*5 | 234+*5* |

13. Given a natural number $n$, symbols $s_1,.. s_n$. Count how many times the letter x occurs among the given characters.

14. Given a natural number $n$, symbols $s_1,.. s_n$. Calculate:

a) how many times the symbol "+" occurs among these characters and how many times the symbol *.

b) the total number of occurrences of characters +, -, * in the sequence $s_1,.. s_n$.

15. Given a natural number $n$, symbols $s_1,.. s_n$. Transform sequence $s_1,.. s_n$ replacing in it:

a) all exclamation marks are dots;

b) each point with an ellipsis;

16. Given a natural number $n$, symbols $s_1,.. s_n$. Find out if the sequence contains $s_1,.. s_n$ such members of the sequence $s_i, s_{i+1}$ that $s_i$ is a comma, $s_{i+1}$ is a dash.

17. Given a natural number $n$, symbols $s_1,.. s_n$. Get the first natural number i for which each of the symbols $s_i, s_{i+1}$, matches the letter a. If such a pair of characters in the sequence $s_1,.. s_n$ no, the answer should be 0.

18. Given a natural number $n$, symbols $s_1,.. s_n$. It is known that the symbol $s_1$ is not a space and that among $s_1,.. s_n$ there is at least one gap. We consider $s_1,.. s_n$ – preceding the first space ( $n$ is not known in advance). Transform sequence $s_1,.. s_n$:

a) removing from it all characters that are not letters;

c) replacing all small letters with large letters of the same name;

c) removing all characters that are not letters or numbers, and replacing each capital letter with a small letter of the same name.

19. Given a natural number $n$, symbols $s_1,.. s_n$. It is known that among the characters there is at least one other than a space. It is required to transform the sequence $s_1,.. s_n$ as follows . Delete the groups of spaces

that begin and end the sequence, and replace each internal group of spaces with a single space. If the specified groups do not have this sequence, then leave the sequence unchanged.