

Задание

- Изучить макросредства языка Ассемблера и приобрести практические навыки работы с ними.
- Вариант 2: Заменить все вхождения заданного символа в тексте на указанный новый символ. Макрокоманда должна обрабатывать одну строку исходного текста.

Текст программы

```
.386
.MODEL FLAT

.CODE

REPLACE MACRO
LOCAL MAINLOOP, EX, REPL

MAINLOOP:
    CMP     BYTE PTR [EAX], 10
    JE      EX
    CMP     BYTE PTR [EAX], 0
    JE      EX
    CMP     BYTE PTR [EAX], DL
    JE      REPL
    INC     EAX
    JMP     MAINLOOP

REPL:
    MOV     BYTE PTR [EAX], CL
    INC     EAX
    JMP     MAINLOOP

EX:

ENDM

NextString MACRO
LOCAL MAINLOOP, EX, NEXT

MAINLOOP:
    CMP     BYTE PTR [EAX], 10
    JE      NEXT
    JMP     EX

NEXT:
    INC     EAX
    JMP     MAINLOOP
```

EX:

ENDM

PUBLIC _ReplaceChar

_ReplaceChar PROC

PUSH **EBP**

MOV **EBP**, **ESP**

MOV **EAX**, [**EBP** + 16] ;text

MOV **ECX**, [**EBP** + 12] ;replacement

MOV **EDX**, [**EBP** + 8] ;symbol

MAINLOOP:

CMP **BYTE** PTR [**EAX**], 0

JE EX

REPLACE

NextString

JMP MAINLOOP

EX:

POP **EBP**

RET

_ReplaceChar ENDP

END

```

#include <stdio.h>
#include <malloc.h>
#include <string.h>

extern void ReplaceChar(char symbol, char replacement, char*
string);

char* ReadText()
{
    const int MAX_TEXT_LENGTH = 500000;
    const int MAX_STRING_LENGTH = 50;
    const char endOfLine = 10;
    const char endOfText = 0;
    char* buffer = malloc(sizeof(char) * MAX_TEXT_LENGTH);
    char* text = buffer;

    printf_s("Enter the text:\n");
    printf_s("*the last combination '/0' is the end of the
text\n");

    while (1)
    {
        const char* string = gets_s(buffer,
MAX_STRING_LENGTH);

        buffer += strlen(string);

        if (strstr(string, "/0") != NULL)
        {
            buffer -= 2;
            buffer[0] = endOfText;
            break;
        }

        buffer[0] = endOfLine;
        buffer++;
    }

    return text;
}

void ReadSymbols(char* symbol, char* replacement)
{
    printf_s("\nEnter symbol and replacement: ");
    scanf_s("%c", symbol);
    scanf_s("%c", replacement);
}

```

```
void main()
{
    char symbol = 0;
    char replacement = 0;

    char* text = ReadText();

    ReadSymbols(&symbol, &replacement);

    ReplaceChar(symbol, replacement, text);

    printf_s("\nResult:\n%s", text);
}
```

Тестирование

№	СИМВОЛ	НОВЫЙ СИМВОЛ	ИСХОДНЫЙ ТЕКСТ	НОВЫЙ ТЕКСТ
1	'a'	'b'	“aaaaa aaaaa aaaa aaaaaaaa aaaaa aaa aaaa”	“bbbbb bbbbb bbbb bbbbbbbbb bbbbbb bbb bbbb”
2	'a'	'a'	“”	“”
3	' '	'@'	“The video is very good, but here there is not a Puerto Rican with a good mazda rx7 good setting or an American muscle car to see what a good burnout is.”	“The@video@is@very@good, but@here@there@is@not@a@Puerto@Rican with@a@good@mazda@rx7 good@setting@or@an@American muscle@car@to@see@what@a@good@burnout@is.”
4	' , '	' . '	“No one gives warmth, only a lamp on the wall And above the crib is a planetarium Monsters of figures come to life Below them, the shadow extinguishes the stars And so Saturn devours his children (And gives birth to darkness in them. And in it) No one gives warmth, only a lamp on the wall And above the crib is a planetarium The monster of figures comes to life Below them, the shadow extinguishes the stars And so Saturn devours his children (And gives birth to darkness in them)”	“No one gives warmth. only a lamp on the wall And above the crib is a planetarium Monsters of figures come to life Below them. the shadow extinguishes the stars And so Saturn devours his children (And gives birth to darkness in them. And in it) No one gives warmth. only a lamp on the wall And above the crib is a planetarium The monster of figures comes to life Below them. the shadow extinguishes the stars And so Saturn devours his children (And gives birth to darkness in them)”