Marwadi University	Marwadi University	
	Faculty of Technology	
	Department of Information and Communication Technology	
Sem: 5	Name :Pushti Depani	
Day : 26	Date: 12/11/2022	Enrollment No: 92000133018

CP Club 365Days Challenge

Date – 12/11/2022 <u>Programming language</u> – only C language

Problem Statement

Code must be in C language only

https://www.hackerrank.com/challenges/caesar-cipher-1/problem?isFullScreen=true

Your Code:

```
#include <assert.h>
#include <ctype.h>
#include <limits.h>
#include <math.h>
#include <stdbool.h>
#include <stddef.h>
#include <stdint.h>
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
char* readline();
char* ltrim(char*);
char* rtrim(char*);
int parse_int(char*);
/*
 * Complete the 'caesarCipher' function below.
 * The function is expected to return a STRING.
 * The function accepts following parameters:
```



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```
* 1. STRING s
   2. INTEGER k
 * To return the string from the function, you should either do static alloca-
tion or dynamic allocation
 * For example,
 * char* return_string_using_static_allocation() {
       static char s[] = "static allocation of string";
 *
 *
       return s;
 * }
 * char* return string using dynamic allocation() {
 *
       char* s = malloc(100 * sizeof(char));
 *
       s = "dynamic allocation of string";
 *
 *
       return s;
 * }
 *
 */
char* caesarCipher(char* s, int k) {
    int i = 0;
    char ch;
    while (s[i] != '\0') {
        if (s[i] >= 'a' && s[i] <= 'z') {
            ch = 'a';
            s[i] = ch + (s[i] - ch + k) \% 26;
        } else if (s[i] >= 'A' && s[i] <= 'Z') {</pre>
            ch = 'A';
            s[i] = ch + (s[i] - ch + k) \% 26;
        }
        i ++;
    return s;
```



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```
}
int main()
{
    FILE* fptr = fopen(getenv("OUTPUT_PATH"), "w");
    int n = parse int(ltrim(rtrim(readline())));
    char* s = readline();
    int k = parse int(ltrim(rtrim(readline())));
    char* result = caesarCipher(s, k);
    fprintf(fptr, "%s\n", result);
    fclose(fptr);
    return 0;
}
char* readline() {
    size t alloc length = 1024;
    size t data length = 0;
    char* data = malloc(alloc_length);
    while (true) {
        char* cursor = data + data_length;
        char* line = fgets(cursor, alloc length - data length, stdin);
        if (!line) {
            break;
        }
        data_length += strlen(cursor);
        if (data_length < alloc length - 1 || data[data_length - 1] == '\n') {</pre>
            break;
        }
```



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```
alloc length <<= 1;</pre>
        data = realloc(data, alloc_length);
        if (!data) {
            data = '\0';
            break;
        }
    }
    if (data[data_length - 1] == '\n') {
        data[data_length - 1] = '\0';
        data = realloc(data, data_length);
        if (!data) {
            data = '\0';
        }
    } else {
        data = realloc(data, data_length + 1);
        if (!data) {
            data = '\0';
        } else {
            data[data_length] = '\0';
        }
    }
    return data;
}
char* ltrim(char* str) {
    if (!str) {
        return '\0';
    }
    if (!*str) {
        return str;
```



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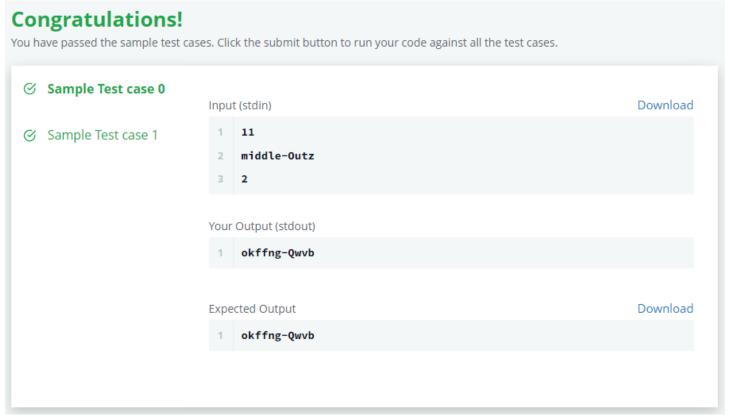
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```
}
    while (*str != '\0' && isspace(*str)) {
        str++;
    }
    return str;
}
char* rtrim(char* str) {
    if (!str) {
        return '\0';
    }
    if (!*str) {
        return str;
    }
    char* end = str + strlen(str) - 1;
    while (end >= str && isspace(*end)) {
        end--;
    }
    *(end + 1) = ' \ 0';
    return str;
}
int parse_int(char* str) {
    char* endptr;
    int value = strtol(str, &endptr, 10);
    if (endptr == str || *endptr != '\0') {
        exit(EXIT_FAILURE);
    }
    return value;
}
```

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Output (Screen Shot):



Understanding about problem:

In this program we have to rotate the alphabet by the given number so if the input given is 'abcdef' and the rotation is +2 then we have to start from c so the output will be 'cdefgh.'

Note: If you can't understand the problem, feel free to contact us and we'll help you. Please don't copy and paste from anywhere.

ALL THE BEST

Team CP Club