//  
// Created by BarthSarafin on 20.04.2015.  
//  
  
#include "palindrome.h"  
#include <stdio.h>  
#include <stdlib.h>  
  
**int** main(){  
 **char** string[100];  
 **char**\* result;  
 **int** option = 1;  
  
 (**void**) printf("#################################\n");  
 (**void**) printf("# PROG C #\n");  
 (**void**) printf("# bachmste #\n");  
 (**void**) printf("# Palindrom #\n");  
 (**void**) printf("#################################\n\n");  
  
 **while**(option) {  
 (**void**) printf("Please enter a String:\n");  
 gets(string);  
  
 result = isPalindrome(string);  
  
 **if** (result == 0) {  
 printf("\"%s\" is not a palindrome string.\n", string);  
 } **else** {  
 printf("\"%s\" is a palindrome string.\n", string);  
 }  
  
 (**void**) printf("Would you like to continue? [0/1]?\n");  
 (**void**) scanf("%d", &option);  
 fflush(stdin);  
 }  
}  
  
**char**\* isPalindrome(**char** \*string){  
 **int** check, length;  
 **char** \*reverse;  
  
 length = stringLength(string);  
 reverse = (**char**\*)malloc((size\_t) (length+1));  
  
 copyString(reverse, string);  
 reverseString(reverse);  
  
 check = compareString(string, reverse);  
  
 free(reverse);  
  
 **if**(check == 0){  
 **return** string;  
 } **else** {  
 **return** 0;  
 }  
}  
  
**int** stringLength(**char** \*string){  
 **int** length = 0;  
  
 **while**(\*string){  
 length++;  
 string++;  
 }  
  
 **return** length;  
}  
  
**void** copyString(**char** \*target, **char** \*source){  
 **while**(\*source){  
 \*target = \*source;  
 source++;  
 target++;  
 }  
  
 \*target = '\0';  
}  
  
**void** reverseString(**char** \*string){  
 **int** length, c;  
 **char** \*begin, \*end, temp;  
  
 length = stringLength(string);  
  
 begin = string;  
 end = string;  
  
 **for**(c = 0; c < (length - 1); c++){  
 end++;  
 }  
  
 **for**(c = 0; c < length/2; c++){  
 temp = \*end;  
 \*end = \*begin;  
 \*begin = temp;  
  
 begin++;  
 end--;  
 }  
}  
  
**int** compareString(**char** \*first, **char** \*second){  
 **while**(\*first == \*second){  
 **if**(\*first == '\0' || \*second == '\0'){  
 **break**;  
 }  
 first++;  
 second++;  
 }  
 **if**( \*first == '\0' && \*second == '\0'){  
 **return** 0;  
 } **else** {  
 **return** -1;  
 }  
}