

# ECE 71 – Engineering Computations in C

Professor Kriehn – Fall 2016

**Code Due By:** Midnight on Tuesday, Nov 15, 2016

**Writeup Due By:** Class on Tuesday, Nov 17, 2016

## HOMEWORK #26 – Palindromes

Write a program that reads a message, and then tests the line for a palindrome.

### Specifications:

You may assume the message contains 100 or fewer characters. Therefore, define a global constant `N` equal to 101, since the last element of a character array must be a `'\0'` (the NULL character). Use `N` to declare your array of characters, and a `while()` loop with the `getchar()` function to read in characters into the array.

Use a function called `is_palindrome()` that has the following function prototype:

```
bool is_palindrome(int n, char array[n]);
```

The function accepts the number elements within the array, and a character array as inputs. The function returns a `TRUE` or `FALSE` value that indicates whether or not the line is a palindrome. You must define two pointers to help you code your solution. The first pointer must initially point the 0th character in the character array, and the second pointer should point to the last character in the line. Then use the pointers to point toward different elements within the string and check to see if you have a palindrome. Ignore non-alpha characters. You may use the `isalpha()` and `toupper()` functions to help you.

If you execute the program, the following information should be displayed:

```
~> hw26.o
Enter a message: He lived as a devil, eh?
The line is a palindrome.
~>
```

```
~> hw26.o
Enter a message: Madam, I am Adam.
The line is not a palindrome.
~>
```