CS1580 Lab - 14

1. Lab Topics

- Pointers
- Dynamic memory allocation

2. Task

You will need to write a program that creates an integer array of a given size specified by the user. Then, the user will fill out the entire array with inputs. Finally, your program needs to tell whether the array is a palindrome (an array is called a palindrome if it reads the same from left to right and right to left). Implement the following functions,

- **void printArray(int * arr, int size)** – prints the complete array
- **int * createArray(const int size)** – dynamically allocates an integer array of size len. Then, it fills out the entire array by taking inputs from the user one by one. Finally, it returns the pointer to the array.
- **bool isPalindrome(int * const start, int * const end) –** this function assumes that start and end point to the first and last element of an integer array when it is called. This function returns true if the array is a palindrome and false otherwise.

In your main, do the following:

1. Take the array size as input from the user.
2. Call **createArray** (with size as argument) to create and populate the array.
3. Print the array by calling **printArray** (with the array and size as argument).
4. Tell whether the array is a palindrome or not by calling **isPalindrome** (with the address of first and last element of the array as arguments)

You can assume that the user inputs single digit integers to fill out the array

3. Sample input/output

Sample input/output 1:

```
Enter the size of the array: 5
Enter arr[0]: 1
Enter arr[1]: 2
Enter arr[2]: 3
Enter arr[3]: 4
Enter arr[4]: 5
The array got created is:
[1, 2, 3, 4, 5 ]
The array is not a palindrome
```

Sample input/output 2:

```
Enter the size of the array: 5
Enter arr[0]: 1
Enter arr[1]: 2
Enter arr[2]: 3
Enter arr[3]: 2
Enter arr[4]: 1
The array got created is:
[1, 2, 3, 2, 1 ]
The array is a palindrome
```