

CS 150 Lab 12

Arrays and Functions

The purpose of today's lab is for you to get more experience working with arrays and functions.

- Be sure your output looks exactly like the specified output
- Be sure to submit your solution to **CS150-01 Drop** when you are done by Friday at 5pm

Lab 12

In the folder CS150-01 Public, you will find a file called lab12.cpp which contains a C++ program that has several function prototypes and a main function that contains code to test the function definitions that you must write.

Write a complete C++ program in a project **12_1_ArraysPlusFunctions** that will create an empty file main.cpp. Then copy all of the code from lab12.cpp into main.cpp. Finally write the function definition for each function prototype one at a time. Test each function one at a time by commenting out the code in main.cpp that makes calls to functions that are not written.

If your functions are written correctly, your program will produce output that looks like the following:

```
***** Printing Array A *****
 1  2  3  4  5
***** Printing Array B *****
10  9  8  7  6
***** Sum Of Array A *****
15
***** Sum Of Array B *****
40
***** Print arrayA after adding 6 at the end *****
 1  2  3  4  5  6
***** Print arrayA after adding 6 at the beginning *****
 6  1  2  3  4  5  6
***** Print arrayC after copying arrayA to arrayC *****
 6  1  2  3  4  5  6
***** Printing Array A Reversed *****
 5  4  3  2  1
***** Reverse Array B and check isSorted *****
Array B is sorted
Press any key to continue . . .
```

```
// printTitle prints 5 asterisks, a space, a title, a space, and 5 more
// asterisks
void printTitle (string title);
```

```
// printArray prints each element of an array right justified in a
// field of 3 followed by a newline
void printArray (int array[], int size);

// insertLastArray adds value at the end of the array if there is
// space available
void insertLastArray (int arrayDest[], int &size, int max, int value);

// insertFirstArray adds a value at the beginning of the array if there is
// space available. Each element of the array is shifted down by 1 to make
// room for the new value
void insertFirstArray (int arrayDest[], int &size, int max, int value);

// copyArray copies each element from arraySrc to arrayDest if space is
// available. This function MUST use the function insertLastArray in your
// solution
void copyArray (int arrayDest[], int &sizeDest,
               int arraySrc[], int sizeSrc, int max);

// sumOfArray returns the sum of all elements in the array
int sumOfArray (int array[], int size);

// reverseArray returns the array with elements reversed ... there is a cool
// way to do this and a not so cool way!!!
int reverseArray (int array[], int size);

// isSorted returns true if the array is in order from smallest to largest;
// otherwise, false is returned
bool isSorted (int array[], int size);
```