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 **CS150-02 Drop** when you are done by Friday at 5pm
- Show the instructor or TA your solution to each function as you complete them

Lab 12

In the folder CS150-02 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 a 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, you 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
***** 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
Press any key to continue . . .
```

```cpp
// 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 filed of 3 followed by
// a newline
void printArray (int arry[], int size);

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

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

// isEqual returns true if each element of arrayFirst is the same as the corresponding
// element of arraySecond and both arrays are the same size; otherwise, false is returned
bool isEqual (int arrayFirst[], int sizeFirst,
              int arraySecond[], int sizeSecond);

// anyDuplicates returns true if the array has any duplicates; otherwise, false is returned
bool anyDuplicates (int arry[], int size);
```