

Lab #4

CS-2050

September 23, 2022

1 Requirements

In this lab, you will cover pointer arithmetic and casting. Additionally, you will be working with the *short* type today. *short* is an integer precision type just like *int*, but with a smaller size.

1.1 createArray

```
short * createArray(int size);
```



Info: This function will take an integer representing the size of array to allocate. It will then allocate a *short* array with the given size, and if successful, it returns a pointer to the array with the size hidden before the array pointer as an *integer*. Otherwise it will return NULL.

1.2 getSize

```
int getSize(short *array);
```



Info: This function will take an array with the size hidden before the array pointer as an integer, and return that size.

1.3 countDivisible

```
int countDivisible(short *array, int query);
```



Info: This function will take an array and count the number of elements in the array which are divisible by the given query number.

1.4 freeArray

```
void freeArray(short *array);
```



Info: This function will take a pointer to an array with the size hidden before the array pointer as an integer, and free the memory allocated to it.

Notice



Grading: 10 points

1. Write required *createArray* function
 - * 5 points
2. Write required *getSize* function
 - * 2 points
3. Write required *count* function
 - * 1 point
4. Write required *free* function
 - * 2 points



Notice:

1. All of your lab submissions must compile under GCC using the *-Wall* and *-Werror* flags to be considered for a grade.
2. You are expected to provide proper documentation in every lab submission, in the form of code comments. For an example of proper lab documentation and a clear description of our expectations, see the lab policy document.