Lab #3

CS-2050

September 16, 2022

1 Requirements

In this lab, you will cover pointer arithmetic by offsetting and accessing via that offset an integer array. You might find it useful to re-use your Lab 2 code (or the solution), as some of the functions in this lab are similar to the previous lab. <mark>Make sure to read the requirements carefully.</mark>

1.1 makeArray

```
int * makeArray(int size);
```

ⓘ
Info: This function will take an integer representing the size of array to allocate. It will then allocate the array, and if successful, initialize it with a random number from 0 to 9 (inclusive) in each index. If the array was successfully allocated the function will return a pointer to it, otherwise the function will return NULL.

1.2 offsetArray

```
int * offsetArray(int *array, int offset);
```

ⓘ
Info: This function will take an integer array, and an offset to apply to the array. It will return a pointer to the array which is offset by the given amount, such that array[offset] is the first index in the array.

1.3 printFives

```
void printFives(int *array, int size, int offset);
```

ⓘ
Info: This function will take an integer array, and the offset of the array. It will print the index of all indices which are occupied by the number 5. (IE: in the array { 5, 0, 7, 5 } with no offset, it would print "0, 3".

1.4 freeArray

```
void freeArray(int *array, int offset);
```

ⓘ
Info: This function will take a pointer to an integer array, as well as the offset of the array pointer. It will free the memory allocated to the array.

Notice

Grading: 7 points

1. Write required *makeArray* function

   * 2 points

2. Write required *offset* function

   * 1 point

3. Write required *print* function

   * 2 points

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.