

## CS1050 – Prelab 7-8

Fall 2021

### Concepts to Practice

- Pointers
- Simulated “pass by reference” via pointers
- Relationship of pointers to arrays

### Description

For the prelab assignment, you need to implement a program that reads a two-dimensional array from a user via a function. There are special rules in this assignment to make sure you pass variables back and forth between your functions and the main() function:

- You may not call scanf() from your main() function.
- You may not use global variables.
- The variables you print out at the end must all be declared in your main() function.
- All of your functions must have a void return type, except as described below.

The main() function in your program should:

1. Print a message welcoming the user to Prelab 7-8.
2. Call a function that asks the user how many integers they wish to enter.
3. Call a function that gets that number of integers from the user.
4. Print out all of the values that the user entered, by calling a function.

### Functions You Must Write

You may write any functions you wish to implement this program, but there but you may not call scanf() from your main(). Also, the array of integers must be declared in main(). Finally, all of the functions you write (except main()) must have a void return type.

### Hint

Here are prototypes for the functions I wrote in addition to main():

```
void GetCount(int * outputInt);  
void GetIntegerArray(int * outputIntArray, int count);  
void PrintArray(int a[], int size);
```

### Sample Output1

```
jimr@JimRXPS13:~/CS1050/FS2021/labs/lab7-8$ ./a.out
```

```
*****
* welcome to Prelab 7-8 *
*****
```

How many integers would you like to enter?

10

```
Enter integer #1: 1
Enter integer #2: 2
Enter integer #3: 3
Enter integer #4: 4
Enter integer #5: 5
Enter integer #6: 6
Enter integer #7: 7
Enter integer #8: 8
Enter integer #9: 9
Enter integer #10: 10
```

```
*****
```

You entered an array with 10 elements:

```
array[0]=1
array[1]=2
array[2]=3
array[3]=4
array[4]=5
array[5]=6
array[6]=7
array[7]=8
array[8]=9
array[9]=10
```

### Sample Output2

```
jimr@JimRXPS13:~/CS1050/FS2021/labs/lab7-8$ ./a.out
```

```
*****
* welcome to Prelab 7-8 *
*****
```

How many integers would you like to enter?

3

```
Enter integer #1: 27
Enter integer #2: -171
Enter integer #3: 4
```

```
*****
```

You entered an array with 3 elements:

```
array[0]=27
array[1]=-171
array[2]=4
```