Lab 2

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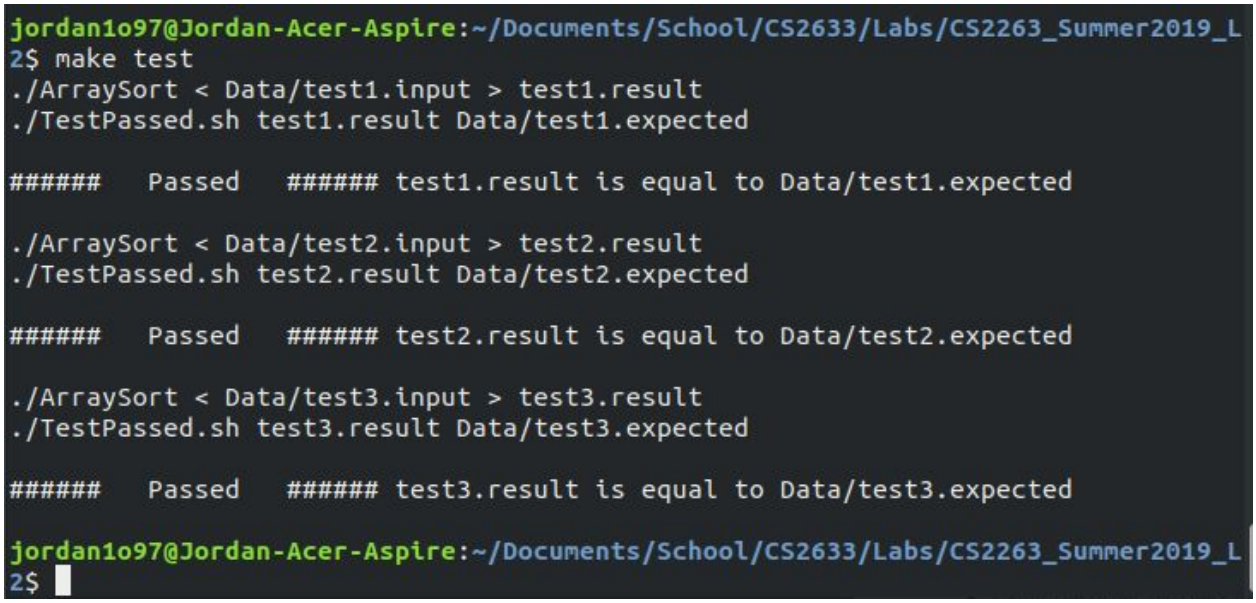
Code

```
/*******************************
 *
 * ArraySort.c
 *
 * Created by Jean-Philippe Legault
 *
 * Your task is to implement in place sorting using the two available functions
 * swapAdjacent, and compareAdjacent.
 *
 * Some bug might have been introduced... you will have to find out if there are any!
 * if so, you will have to correct it
 *
 *******************************/
#include <stdio.h>
#include <stdlib.h>
#include <stdbool.h>

void printArray(int *array, int size)
{
   for(int i=0; i<size; i++)
   {
      if(i != 0)
      {
         printf(", ");
      }
      printf("%d", array[i]);
   }
   printf("\n");
}

void swapAdjacent(int *a, int index)
{
   int temp = *(a + index);
   *(a + index) = *(a + index + 1);
   *(a + index + 1) = temp;
}

int compareAdjacent(int *a, int index)
{
   return *(a + index) - *(a + index + 1);
```

```
}

/**int counter = size;int counter = size;
 * TODO: implement in place sorting on an array
 * by using the two functions swapAdjacent and compareAdjacent
 */
void inPlaceSort(int *a, int size)
{
    while(size > 0){

        for(int i = 0; i < size-1; i++){
            if(compareAdjacent(a, i) > 0){
                swapAdjacent(a, i);
            }
        }
        size--;
    }
}

int main(int argc, char * * argv)
{

    int array_size = 0;
    printf("Enter the array size (>0) and the numbers to fill the array with: ");
    if(!scanf("%d", &array_size))
    {
        printf("ERROR. Must enter an integer.\n");
        return EXIT_FAILURE;
    }
    else if(array_size < 1)
    {
        printf("ERROR. array size must be at least 1.\n");
        return EXIT_FAILURE;
    }

    int a[array_size];

    /**********************
     * TODO finish parsing the user input to fill the array
     *
     * it should parse user input with scanf to fill the array with values
     ***************nt index= 0;nt index= 0;nt index= 0;******/
    for(int i = 0; i < array_size; i++){
```

```
        int temp = 0;
        if(!scanf("%d", &temp)){
            printf("Please return Varible");
            return EXIT_FAILURE;
        }
        a[i] = temp;
    }

    printArray(a, array_size);

    inPlaceSort(a, array_size);

    printArray(a, array_size);

            return EXIT_SUCCESS;
}
```

Screenshots



Stack Trace

```
Reading symbols from ArraySort...(no debugging symbols found)...done.
(gdb) breakpoint
Undefined command: "breakpoint".  Try "help".
(gdb) break swapAdjacent
Breakpoint 1 at 0x81f
(gdb) r
Starting program: /home/jordan1o97/Documents/School/CS2633/Labs/CS2263_Summer201
9_L2/ArraySort
Enter the array size (>0) and the numbers to fill the array with: 5
5
4
3
2
1
5, 4, 3, 2, 1

Breakpoint 1, 0x000055555555481f in swapAdjacent ()
(gdb) backtrace
#0  0x000055555555481f in swapAdjacent ()
#1  0x0000555555554911 in inPlaceSort ()
#2  0x0000555555554aa6 in main ()
(gdb) backtrace 0
(More stack frames follow...)
(gdb)
```

Git Repository

https://github.com/Jordan1o97/CS2263_Summer2019_L2.git