CS 365, Spring 2017 — April 24th — Exam 2

Question 1. [100 points] Start by executing the following commands in a terminal (substituting the name of the actual zipfile for *zipfile*):

```
wget http://faculty.ycp.edu/~dhovemey/spring2017/cs365/zipfile
unzip zipfile
cd CS365_Exam02
```

Use a text editor to open the file `reverseArray.c` in the `CS365_Exam02` directory.

As you work on the exam, do not view any web pages except those linked from the course web page. You may use your solutions to previous assignments and labs as a reference.

Your task is to complete the program in `reverseArray.c` so that so that it uses multiple threads (pthreads) to reverse an array `arr` of randomly-generated values. (A sequential version of this program is available as `reverseArraySeq.c`.)

The program will print `success!` if the reversal is accomplished successfully. (Don't forget to make sure that your worker threads have completed before the code that checks the result is executed.)

The `num_threads` variable indicates how many threads the program should use. By default, the program will use 2 threads. However, a command line argument may be specified to choose the number of threads explicitly. For example,

```
./reverseArray
```

would run the program with the default of 2 threads, while

```
./reverseArray 4
```

would run the program with 4 threads.

You will receive up to 85 points (85% of full credit) if the program can correctly reverse the array using 2 threads. For full credit, allow the program to correctly reverse the array using any number of threads.

Hints:

- *Think carefully about how to divide up the array*: you will need to do this differently for this program than for many of the array computations we have done this semester