CISP 360: Programming Assignment #9

Write a program that reads test scores from an input file named scores.txt and dynamically allocates an array large enough to hold the scores. The program should read the input file without prompting the user for any input. Each line in the input file has a single integer score. Any negative scores that are read should be treated as outlier values and not added to the array. However, the program should keep track of the number of outlier values.

Once all the scores are read, the array should be passed to a function that sorts them in **descending** order. Another function should be called that calculates the average score in the sorted array. A third function should be called that calculates the median score in the sorted array.

The median score is the middle score in a sorted list of scores. If there are two middle scores(because there are an even number of scores in the list), then the average of those two middle scores is the median score.

For example, the median value in the list 2, 5, 6, 10 is 5.5.

Given the example scores.txt file that I have provided, the program should display the sorted list of scores, the average score, the median score, and the number of outlier values like so:

There were 3 outlier values.

Sorted scores: 100, 93, 88, 88, 84, 79, 78, 72, 60, 45, 20

Average score: 73.36

Median Score: 79.00

For this assignment use pointer notation rather than array notation whenever possible.

HINT: For this assignment, I found it useful to create two separate functions that both read the input file--one that just counts the number of non-outlier scores in the file, and one that takes that non-outlier count and returns the score array of that size.