

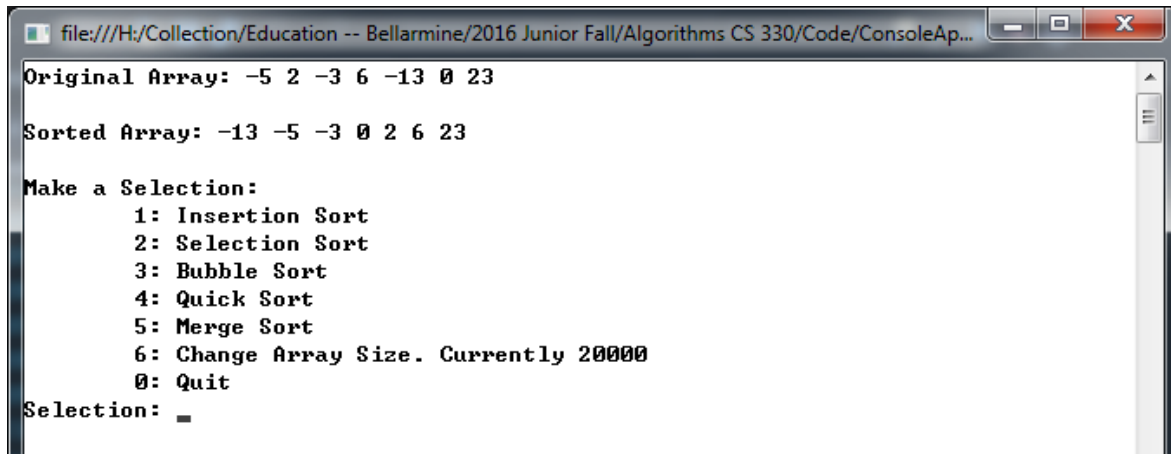
# Homework Assignment 5

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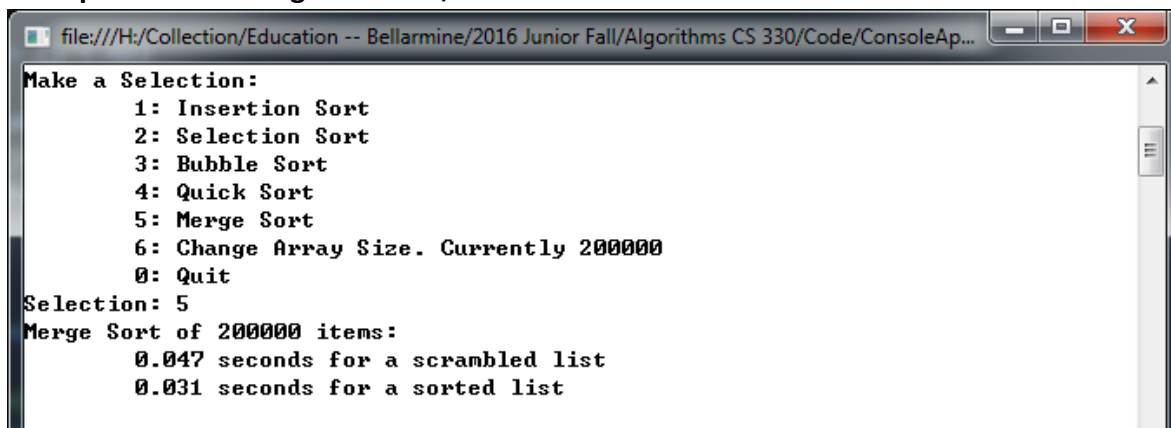
The sorting method that I added was merge sort as can be seen as the 5<sup>th</sup> selection when the program runs.

Proving that the sorting method works:



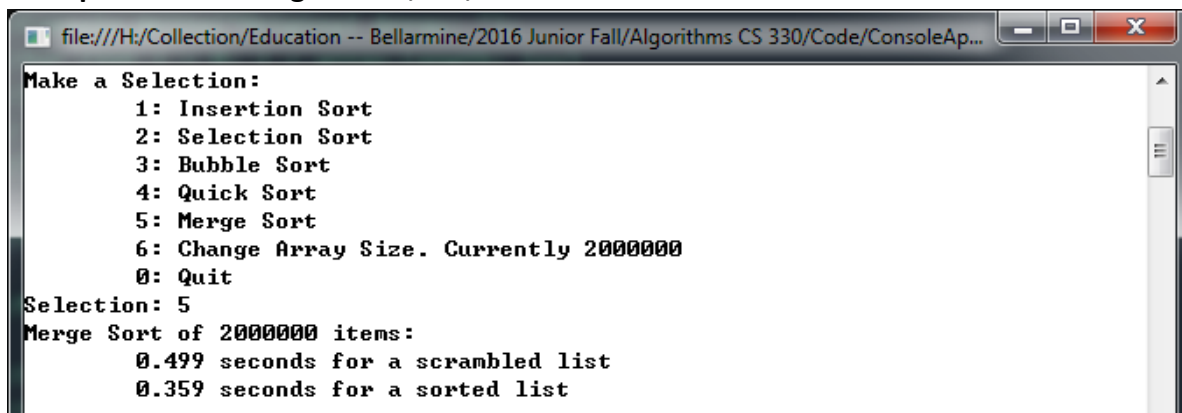
```
file:///H:/Collection/Education -- Bellarmine/2016 Junior Fall/Algorithms CS 330/Code/ConsoleAp...
Original Array: -5 2 -3 6 -13 0 23
Sorted Array: -13 -5 -3 0 2 6 23
Make a Selection:
    1: Insertion Sort
    2: Selection Sort
    3: Bubble Sort
    4: Quick Sort
    5: Merge Sort
    6: Change Array Size. Currently 20000
    0: Quit
Selection:  
```

Example of the sorting code: 200,000 items



```
file:///H:/Collection/Education -- Bellarmine/2016 Junior Fall/Algorithms CS 330/Code/ConsoleAp...
Make a Selection:
    1: Insertion Sort
    2: Selection Sort
    3: Bubble Sort
    4: Quick Sort
    5: Merge Sort
    6: Change Array Size. Currently 200000
    0: Quit
Selection: 5
Merge Sort of 200000 items:
    0.047 seconds for a scrambled list
    0.031 seconds for a sorted list
```

Example of the sorting code: 2,000,000 items



```
file:///H:/Collection/Education -- Bellarmine/2016 Junior Fall/Algorithms CS 330/Code/ConsoleAp...
Make a Selection:
    1: Insertion Sort
    2: Selection Sort
    3: Bubble Sort
    4: Quick Sort
    5: Merge Sort
    6: Change Array Size. Currently 2000000
    0: Quit
Selection: 5
Merge Sort of 2000000 items:
    0.499 seconds for a scrambled list
    0.359 seconds for a sorted list
```