

Python 3.12.0 (v3.12.0:0fb18b02c8, Oct 2 2023, 09:45:56) [Clang 13.0.0 (clang-1300.0.29.30)]
on darwin
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==== RESTART: /Users/jreid/Documents/JLR_dev_code/merrimack/CSC6013/test.py ====

Jesse Reid CSC6013 In Class Exercise E7 Array Sum

Recursive call with subarray: [38, 21, 39, 60, -1, 10, 81, 23]
Recursive call with subarray: [38, 21, 39, 60]
Recursive call with subarray: [38, 21]
Recursive call with subarray: [38]
Base case reached with single element 38.
Recursive call with subarray: [21]
Base case reached with single element 21.
Returning from subarray [38, 21] with a sum of 59 and 5 recursive sums as of now.
Recursive call with subarray: [39, 60]
Recursive call with subarray: [39]
Base case reached with single element 39.
Recursive call with subarray: [60]
Base case reached with single element 60.
Returning from subarray [39, 60] with a sum of 99 and 8 recursive sums as of now.
Returning from subarray [38, 21, 39, 60] with a sum of 158 and 8 recursive sums as of now.
Recursive call with subarray: [-1, 10, 81, 23]
Recursive call with subarray: [-1, 10]
Recursive call with subarray: [-1]
Base case reached with single element -1.
Recursive call with subarray: [10]
Base case reached with single element 10.
Returning from subarray [-1, 10] with a sum of 9 and 12 recursive sums as of now.
Recursive call with subarray: [81, 23]
Recursive call with subarray: [81]
Base case reached with single element 81.
Recursive call with subarray: [23]
Base case reached with single element 23.
Returning from subarray [81, 23] with a sum of 104 and 15 recursive sums as of now.
Returning from subarray [-1, 10, 81, 23] with a sum of 113 and 15 recursive sums as of now.
Returning from subarray [38, 21, 39, 60, -1, 10, 81, 23] with a sum of 271 and 15 recursive sums as of now.

The sum is: 271

The total number of recursive sums: 15

Recursive call with subarray: [2, 97, 5, 88, 9, 72, 12, 64, 17, 56, 21]
Recursive call with subarray: [2, 97, 5, 88, 9, 72]
Recursive call with subarray: [2, 97, 5]
Recursive call with subarray: [2, 97]
Recursive call with subarray: [2]
Base case reached with single element 2.
Recursive call with subarray: [97]
Base case reached with single element 97.

Returning from subarray [2, 97] with a sum of 99 and 6 recursive sums as of now.
Recursive call with subarray: [5]
Base case reached with single element 5.
Returning from subarray [2, 97, 5] with a sum of 104 and 7 recursive sums as of now.
Recursive call with subarray: [88, 9, 72]
Recursive call with subarray: [88, 9]
Recursive call with subarray: [88]
Base case reached with single element 88.
Recursive call with subarray: [9]
Base case reached with single element 9.
Returning from subarray [88, 9] with a sum of 97 and 11 recursive sums as of now.
Recursive call with subarray: [72]
Base case reached with single element 72.
Returning from subarray [88, 9, 72] with a sum of 169 and 12 recursive sums as of now.
Returning from subarray [2, 97, 5, 88, 9, 72] with a sum of 273 and 12 recursive sums as of now.
Recursive call with subarray: [12, 64, 17, 56, 21]
Recursive call with subarray: [12, 64, 17]
Recursive call with subarray: [12, 64]
Recursive call with subarray: [12]
Base case reached with single element 12.
Recursive call with subarray: [64]
Base case reached with single element 64.
Returning from subarray [12, 64] with a sum of 76 and 17 recursive sums as of now.
Recursive call with subarray: [17]
Base case reached with single element 17.
Returning from subarray [12, 64, 17] with a sum of 93 and 18 recursive sums as of now.
Recursive call with subarray: [56, 21]
Recursive call with subarray: [56]
Base case reached with single element 56.
Recursive call with subarray: [21]
Base case reached with single element 21.
Returning from subarray [56, 21] with a sum of 77 and 21 recursive sums as of now.
Returning from subarray [12, 64, 17, 56, 21] with a sum of 170 and 21 recursive sums as of now.
Returning from subarray [2, 97, 5, 88, 9, 72, 12, 64, 17, 56, 21] with a sum of 443 and 21 recursive sums as of now.

The sum is: 443

The total number of recursive sums: 21

Recursive call with subarray: [100, 33, 22, 213, 65, 29, 153, 199, 47, 181, 85]
Recursive call with subarray: [100, 33, 22, 213, 65, 29]
Recursive call with subarray: [100, 33, 22]
Recursive call with subarray: [100, 33]
Recursive call with subarray: [100]
Base case reached with single element 100.
Recursive call with subarray: [33]
Base case reached with single element 33.
Returning from subarray [100, 33] with a sum of 133 and 6 recursive sums as of now.
Recursive call with subarray: [22]
Base case reached with single element 22.

Returning from subarray [100, 33, 22] with a sum of 155 and 7 recursive sums as of now.
 Recursive call with subarray: [213, 65, 29]
 Recursive call with subarray: [213, 65]
 Recursive call with subarray: [213]
 Base case reached with single element 213.
 Recursive call with subarray: [65]
 Base case reached with single element 65.
 Returning from subarray [213, 65] with a sum of 278 and 11 recursive sums as of now.
 Recursive call with subarray: [29]
 Base case reached with single element 29.
 Returning from subarray [213, 65, 29] with a sum of 307 and 12 recursive sums as of now.
 Returning from subarray [100, 33, 22, 213, 65, 29] with a sum of 462 and 12 recursive sums as of now.
 Recursive call with subarray: [153, 199, 47, 181, 85]
 Recursive call with subarray: [153, 199, 47]
 Recursive call with subarray: [153, 199]
 Recursive call with subarray: [153]
 Base case reached with single element 153.
 Recursive call with subarray: [199]
 Base case reached with single element 199.
 Returning from subarray [153, 199] with a sum of 352 and 17 recursive sums as of now.
 Recursive call with subarray: [47]
 Base case reached with single element 47.
 Returning from subarray [153, 199, 47] with a sum of 399 and 18 recursive sums as of now.
 Recursive call with subarray: [181, 85]
 Recursive call with subarray: [181]
 Base case reached with single element 181.
 Recursive call with subarray: [85]
 Base case reached with single element 85.
 Returning from subarray [181, 85] with a sum of 266 and 21 recursive sums as of now.
 Returning from subarray [153, 199, 47, 181, 85] with a sum of 665 and 21 recursive sums as of now.
 Returning from subarray [100, 33, 22, 213, 65, 29, 153, 199, 47, 181, 85] with a sum of 1127 and 21 recursive sums as of now.

The sum is: 1127

The total number of recursive sums: 21

Jesse Reid CSC6013 In Class Exercise E7 Mergesort

Sorting [38, 21, 39, 60, -1, 10, 81, 23]

Splitting array: [38, 21, 39, 60, -1, 10, 81, 23]

Splitting array: [38, 21, 39, 60]

Splitting array: [38, 21]

Splitting array: [38]

Returned left sorted array: [38]

Splitting array: [21]
Returned right sorted array: [21]
Merging left array [38] and right array [21]
Merged array: [21, 38]
Returned left sorted array: [21, 38]
Splitting array: [39, 60]
Splitting array: [39]
Returned left sorted array: [39]
Splitting array: [60]
Returned right sorted array: [60]
Merging left array [39] and right array [60]
Merged array: [39, 60]
Returned right sorted array: [39, 60]
Merging left array [21, 38] and right array [39, 60]
Merged array: [21, 38, 39, 60]
Returned left sorted array: [21, 38, 39, 60]
Splitting array: [-1, 10, 81, 23]
Splitting array: [-1, 10]
Splitting array: [-1]
Returned left sorted array: [-1]
Splitting array: [10]
Returned right sorted array: [10]
Merging left array [-1] and right array [10]
Merged array: [-1, 10]
Returned left sorted array: [-1, 10]
Splitting array: [81, 23]
Splitting array: [81]
Returned left sorted array: [81]
Splitting array: [23]
Returned right sorted array: [23]
Merging left array [81] and right array [23]
Merged array: [23, 81]
Returned right sorted array: [23, 81]
Merging left array [-1, 10] and right array [23, 81]
Merged array: [-1, 10, 23, 81]
Returned right sorted array: [-1, 10, 23, 81]
Merging left array [21, 38, 39, 60] and right array [-1, 10, 23, 81]
Merged array: [-1, 10, 21, 23, 38, 39, 60, 81]

Sorted array: [-1, 10, 21, 23, 38, 39, 60, 81]

Sorting [2, 97, 5, 88, 9, 72, 12, 64, 17, 56, 21]

Splitting array: [2, 97, 5, 88, 9, 72, 12, 64, 17, 56, 21]
Splitting array: [2, 97, 5, 88, 9]
Splitting array: [2, 97]
Splitting array: [2]
Returned left sorted array: [2]
Splitting array: [97]
Returned right sorted array: [97]
Merging left array [2] and right array [97]
Merged array: [2, 97]

Returned left sorted array: [2, 97]
Splitting array: [5, 88, 9]
Splitting array: [5]
Returned left sorted array: [5]
Splitting array: [88, 9]
Splitting array: [88]
Returned left sorted array: [88]
Splitting array: [9]
Returned right sorted array: [9]
Merging left array [88] and right array [9]
Merged array: [9, 88]
Returned right sorted array: [9, 88]
Merging left array [5] and right array [9, 88]
Merged array: [5, 9, 88]
Returned right sorted array: [5, 9, 88]
Merging left array [2, 97] and right array [5, 9, 88]
Merged array: [2, 5, 9, 88, 97]
Returned left sorted array: [2, 5, 9, 88, 97]
Splitting array: [72, 12, 64, 17, 56, 21]
Splitting array: [72, 12, 64]
Splitting array: [72]
Returned left sorted array: [72]
Splitting array: [12, 64]
Splitting array: [12]
Returned left sorted array: [12]
Splitting array: [64]
Returned right sorted array: [64]
Merging left array [12] and right array [64]
Merged array: [12, 64]
Returned right sorted array: [12, 64]
Merging left array [72] and right array [12, 64]
Merged array: [12, 64, 72]
Returned left sorted array: [12, 64, 72]
Splitting array: [17, 56, 21]
Splitting array: [17]
Returned left sorted array: [17]
Splitting array: [56, 21]
Splitting array: [56]
Returned left sorted array: [56]
Splitting array: [21]
Returned right sorted array: [21]
Merging left array [56] and right array [21]
Merged array: [21, 56]
Returned right sorted array: [21, 56]
Merging left array [17] and right array [21, 56]
Merged array: [17, 21, 56]
Returned right sorted array: [17, 21, 56]
Merging left array [12, 64, 72] and right array [17, 21, 56]
Merged array: [12, 17, 21, 56, 64, 72]
Returned right sorted array: [12, 17, 21, 56, 64, 72]
Merging left array [2, 5, 9, 88, 97] and right array [12, 17, 21, 56, 64, 72]
Merged array: [2, 5, 9, 12, 17, 21, 56, 64, 72, 88, 97]

Sorted array: [2, 5, 9, 12, 17, 21, 56, 64, 72, 88, 97]

Sorting [100, 33, 22, 213, 65, 29, 153, 199, 47, 181, 85]

Splitting array: [100, 33, 22, 213, 65, 29, 153, 199, 47, 181, 85]

Splitting array: [100, 33, 22, 213, 65]

Splitting array: [100, 33]

Splitting array: [100]

Returned left sorted array: [100]

Splitting array: [33]

Returned right sorted array: [33]

Merging left array [100] and right array [33]

Merged array: [33, 100]

Returned left sorted array: [33, 100]

Splitting array: [22, 213, 65]

Splitting array: [22]

Returned left sorted array: [22]

Splitting array: [213, 65]

Splitting array: [213]

Returned left sorted array: [213]

Splitting array: [65]

Returned right sorted array: [65]

Merging left array [213] and right array [65]

Merged array: [65, 213]

Returned right sorted array: [65, 213]

Merging left array [22] and right array [65, 213]

Merged array: [22, 65, 213]

Returned right sorted array: [22, 65, 213]

Merging left array [33, 100] and right array [22, 65, 213]

Merged array: [22, 33, 65, 100, 213]

Returned left sorted array: [22, 33, 65, 100, 213]

Splitting array: [29, 153, 199, 47, 181, 85]

Splitting array: [29, 153, 199]

Splitting array: [29]

Returned left sorted array: [29]

Splitting array: [153, 199]

Splitting array: [153]

Returned left sorted array: [153]

Splitting array: [199]

Returned right sorted array: [199]

Merging left array [153] and right array [199]

Merged array: [153, 199]

Returned right sorted array: [153, 199]

Merging left array [29] and right array [153, 199]

Merged array: [29, 153, 199]

Returned left sorted array: [29, 153, 199]

Splitting array: [47, 181, 85]

Splitting array: [47]

Returned left sorted array: [47]

Splitting array: [181, 85]

Splitting array: [181]

Returned left sorted array: [181]

Splitting array: [85]

Returned right sorted array: [85]
Merging left array [181] and right array [85]
Merged array: [85, 181]
Returned right sorted array: [85, 181]
Merging left array [47] and right array [85, 181]
Merged array: [47, 85, 181]
Returned right sorted array: [47, 85, 181]
Merging left array [29, 153, 199] and right array [47, 85, 181]
Merged array: [29, 47, 85, 153, 181, 199]
Returned right sorted array: [29, 47, 85, 153, 181, 199]
Merging left array [22, 33, 65, 100, 213] and right array [29, 47, 85, 153, 181, 199]
Merged array: [22, 29, 33, 47, 65, 85, 100, 153, 181, 199, 213]

Sorted array: [22, 29, 33, 47, 65, 85, 100, 153, 181, 199, 213]
