

Pseudo Code execution showing recursive Mergesort of integers 1-8. Assume indices of array positions are 1-8.

Original Array:

8 7 6 5 4 3 2 1

```
mergesort(1,8)
|mergesort(1,4)
|  |mergesort(1,2)
|  |  |mergesort(1,1)
|  |  |mergesort(2,2)
|  |  |merge(1,1,2,2)
|  |  |7 8 6 5 4 3 2 1
|  |  |mergesort(3,4)
|  |  |  |mergesort(3,3)
|  |  |  |mergesort(4,4)
|  |  |  |merge(3,3,4,4)
|  |  |  |7 8 5 6 4 3 2 1
|  |  |merge(1,2,3,4)
|  |  |5 6 7 8 4 3 2 1
|mergesort(5,8)
|  |mergesort(5,6)
|  |  |mergesort(5,5)
|  |  |mergesort(6,6)
|  |  |merge(5,5,6,6)
|  |  |5 6 7 8 3 4 2 1
|  |  |mergesort(7,8)
|  |  |  |mergesort(7,7)
|  |  |  |mergesort(8,8)
|  |  |  |merge(7,7,8,8)
|  |  |  |5 6 7 8 3 4 1 2
|  |  |merge(5,6,7,8)
|  |  |5 6 7 8 1 2 3 4
|merge(1,4,5,8)
| 1 2 3 4 5 6 7 8
```

Note: temporary storage array is needed to do the merging step!