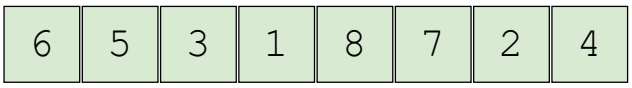
Introduction to Merge Sort

Merge sort sorts lists by breaking them down, sorting them and then merging the sorted lists. (Reading time: under 1 minute)

It divides the given array into halves, calls itself for the two halves, and then merges these halves.



Unsorted array

Split into half

Split left array into half

Split left array into half

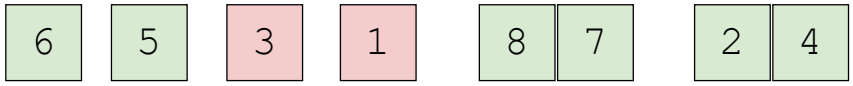
Split left array into half

Split left array into half

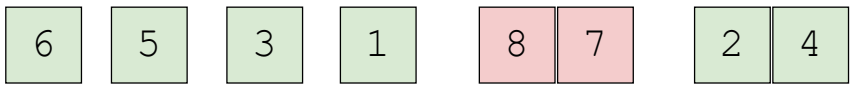
Split [6, 5]

Split [6, 5]

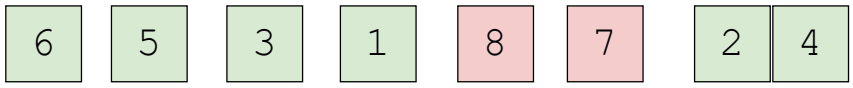
Split [3, 1]



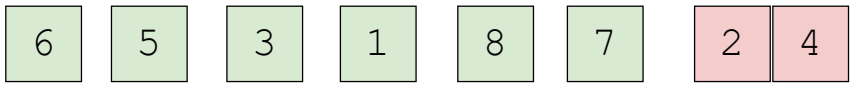
Split [3, 1]



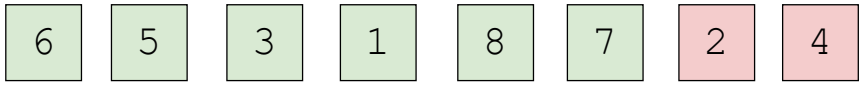
Split [8, 7]



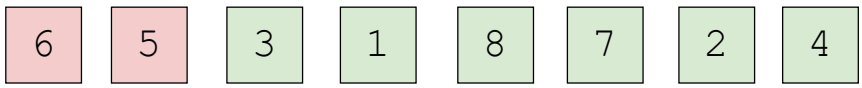
Split [8, 7]



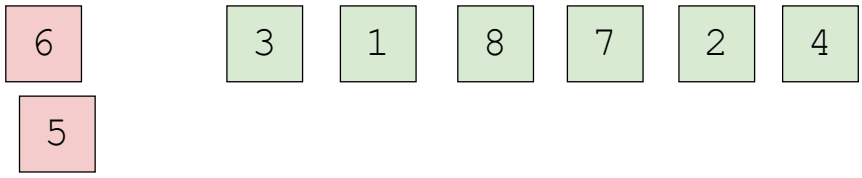
Split [2, 4]



Split [2, 4]



6>5



Swap!

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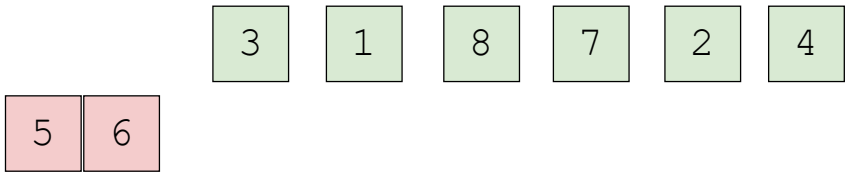

Swap!

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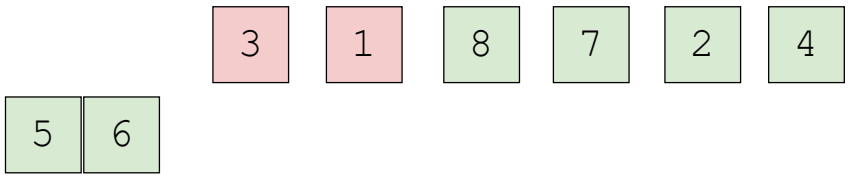

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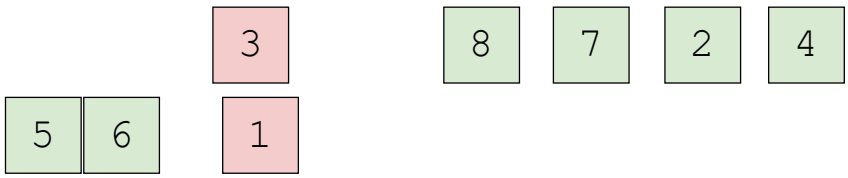

Swap!

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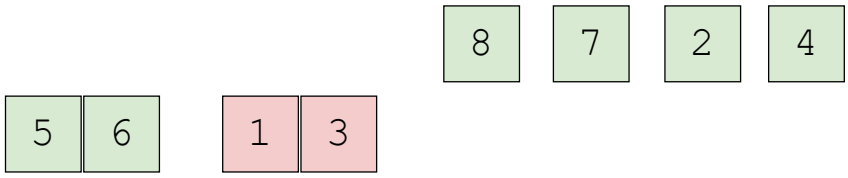

Swap!

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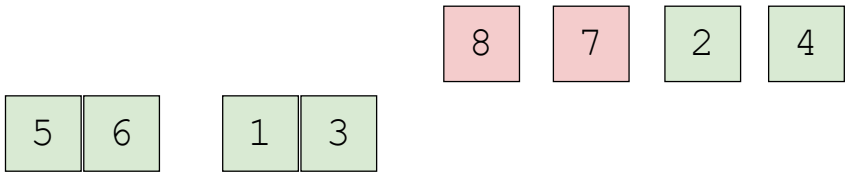

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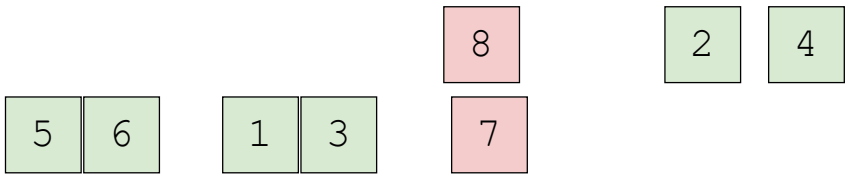
21 of 58



Swap!

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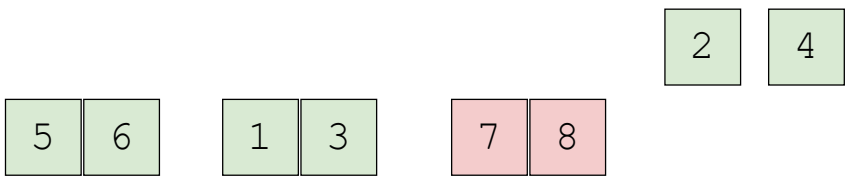

Swap!

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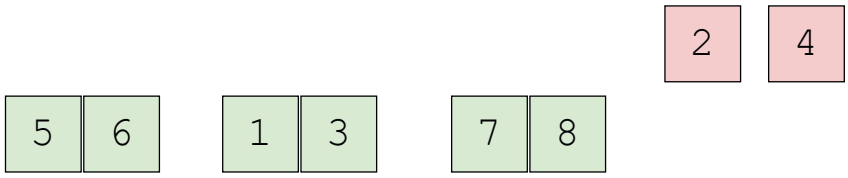

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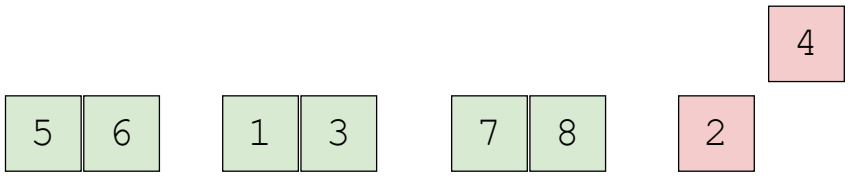
24 of 58



Do not swap!

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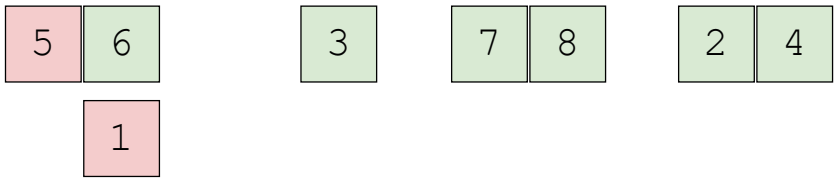
Do not swap!

26 of 58

1<5

27 of 58



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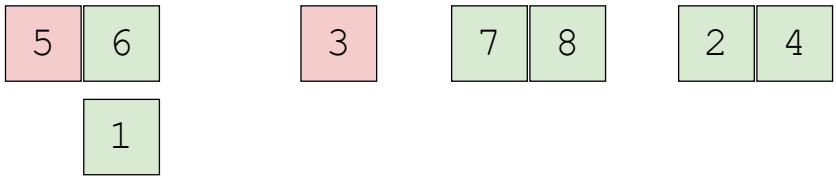
28 of 58



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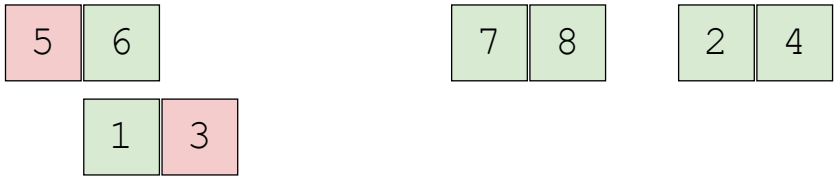

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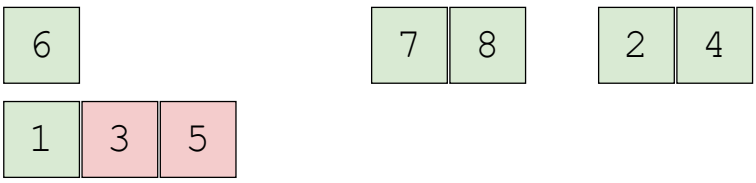

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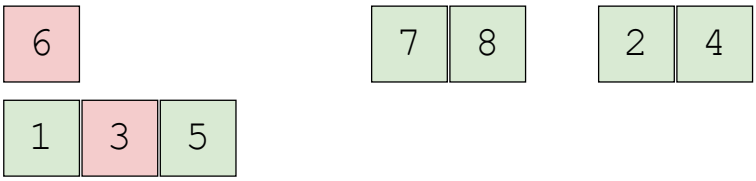
31 of 58



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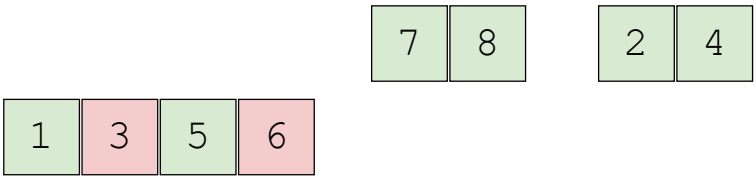
32 of 58



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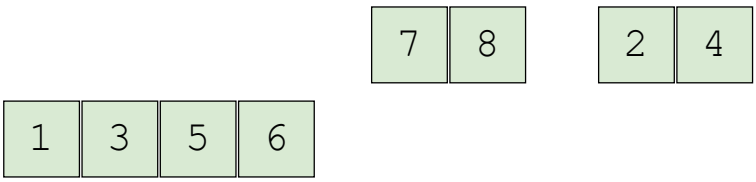
33 of 58



Left half of the array has been sorted.

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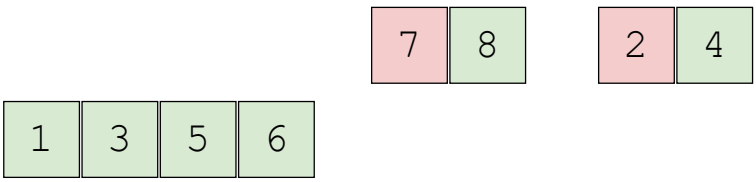

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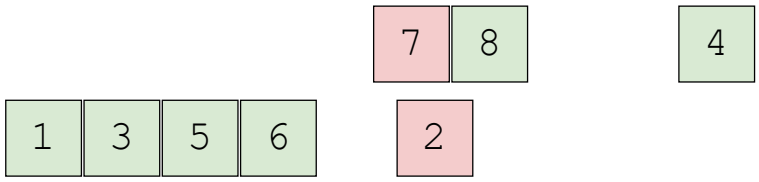
35 of 58



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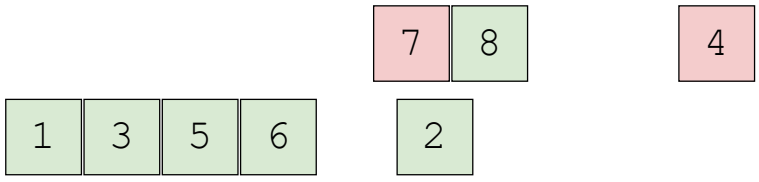
36 of 58



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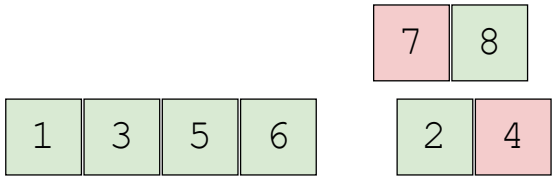
37 of 58



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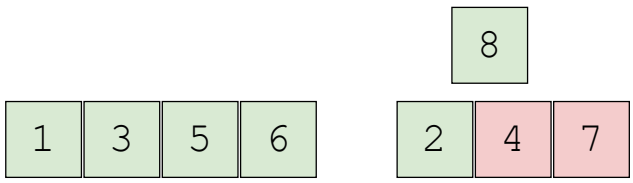

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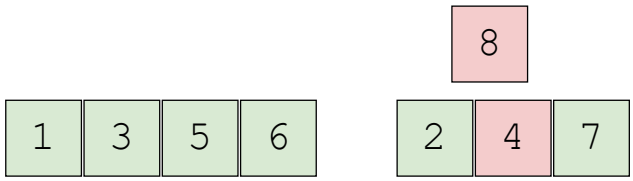

4<8

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4<8

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Right half of the array has been sorted.

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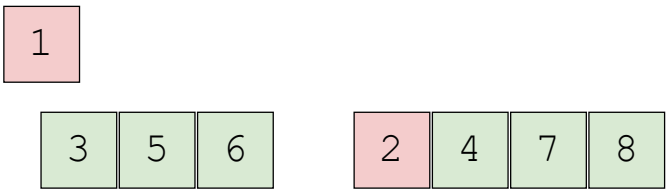
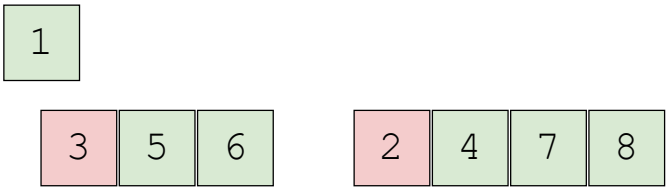
1<2

43 of 58



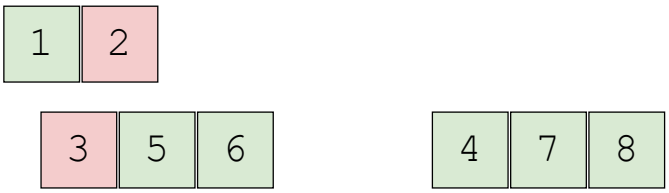
1<2

44 of 58



2<3

45 of 58



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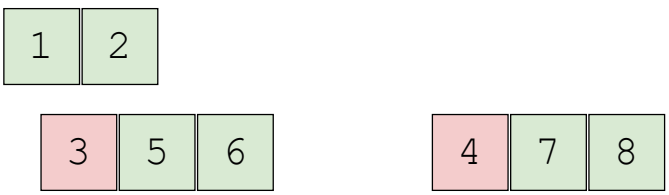
46 of 58



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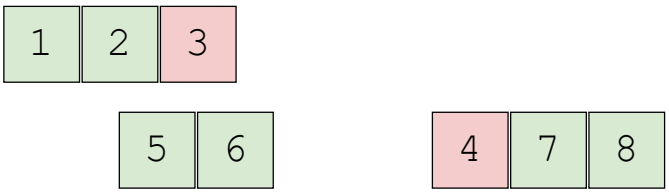

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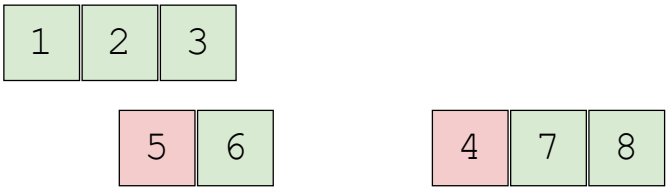
48 of 58



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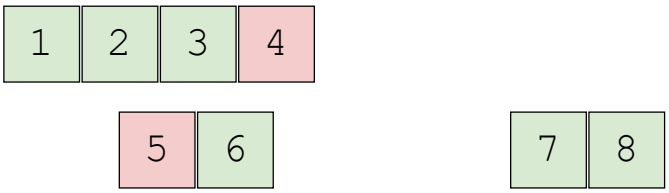
49 of 58



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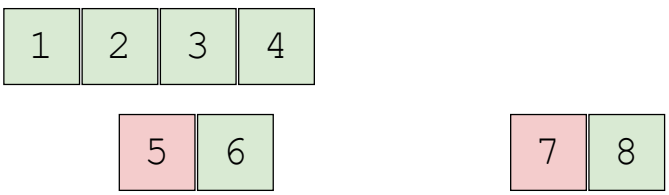
50 of 58



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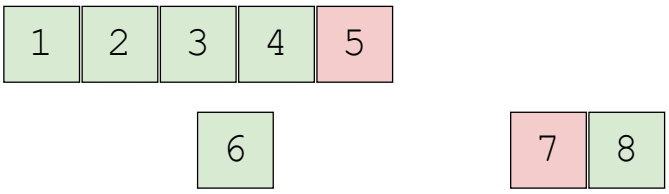
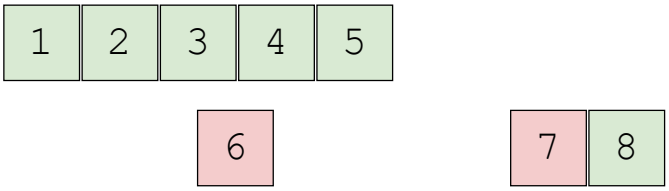
51 of 58



5<7

52 of 58



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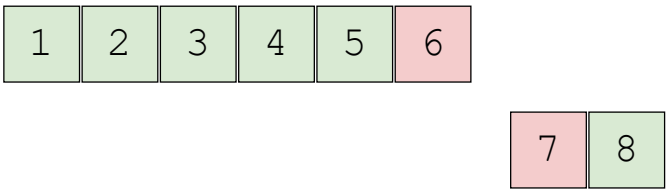
53 of 58



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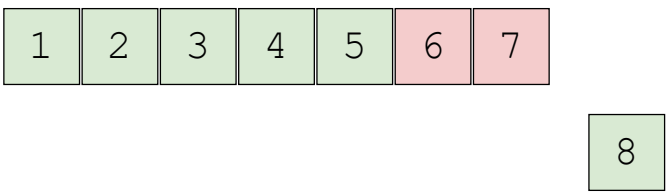
54 of 58



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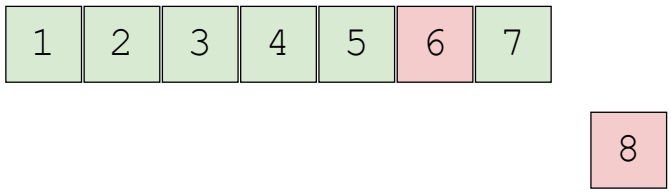
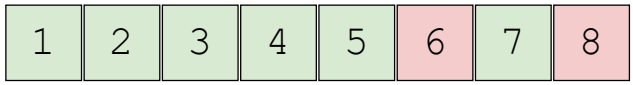
55 of 58



6<8

56 of 58



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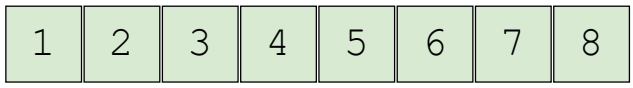
57 of 58



Sorted Array!

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In the next lesson, I will discuss the working of this algorithm in a little more detail along with it's code implementation.