Shell Sort Example

input a: 10 9 8 4 3 1 4 15

A gap sequence could be anything, but the last gap is always 1.

A Gap sequence = 4, 2, 1

Gap = 4

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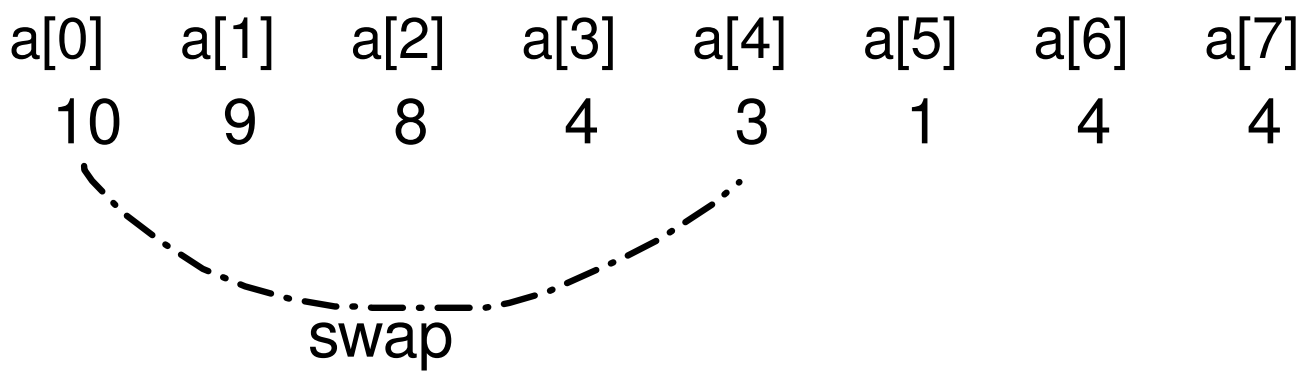

Shell Sort Example

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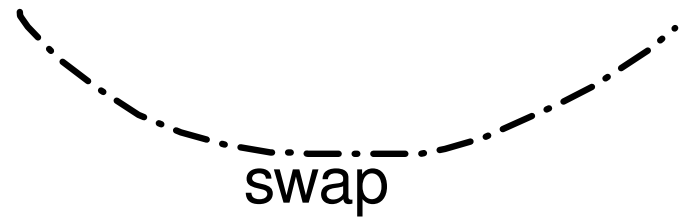
a[0]	a[1]	a[2]	a[3]	a[4]	a[5]	a[6]	a[7]
3	9	8	4	10	1	4	4



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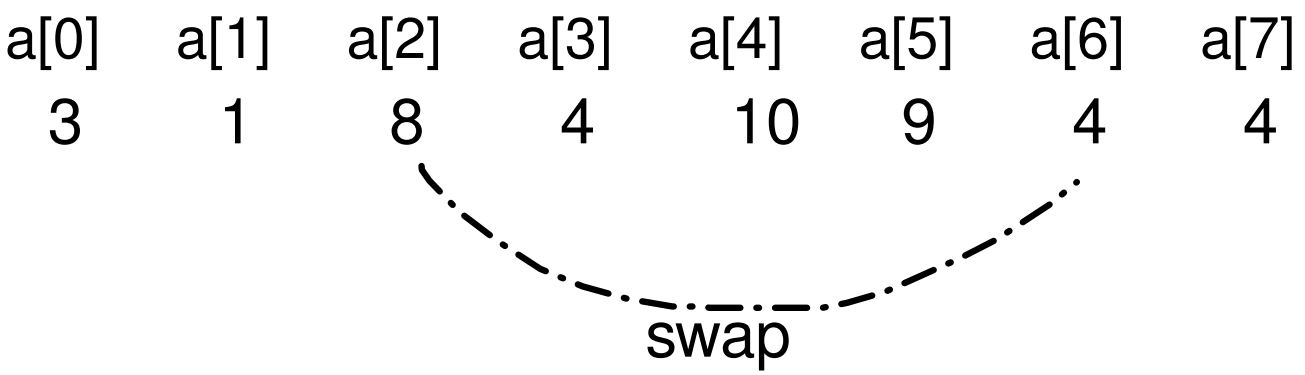

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a[0]	a[1]	a[2]	a[3]	a[4]	a[5]	a[6]	a[7]
3	1	4	4	10	9	8	4

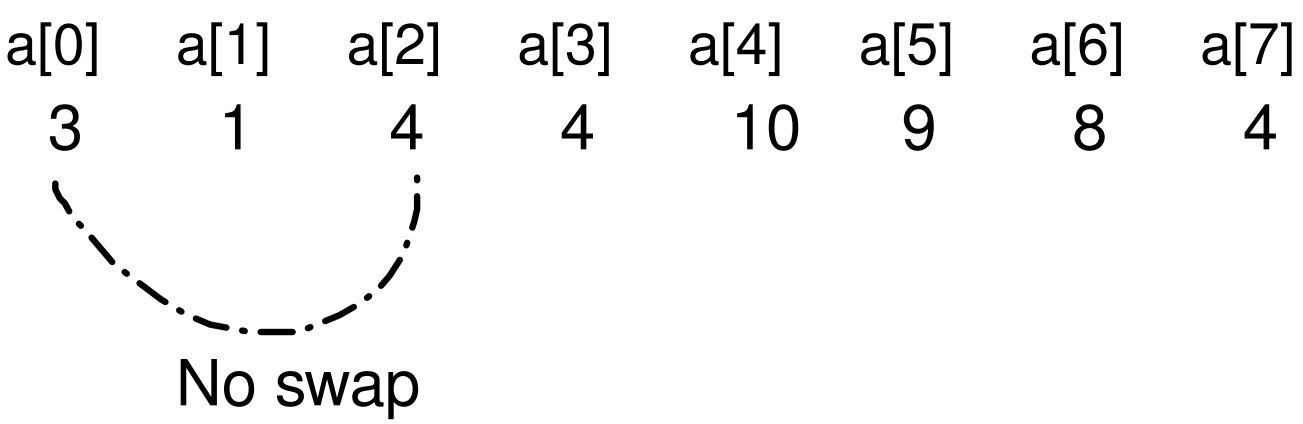
This is a 4-sorted input

Same color elements are in sorted order

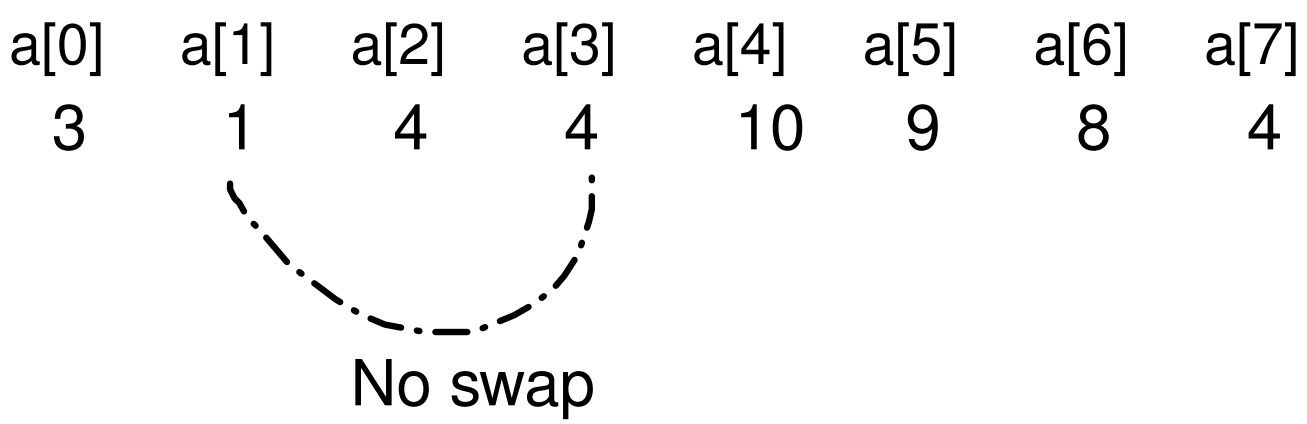
Gap = 2

a[0] a[1] a[2] a[3] a[4] a[5] a[6] a[7]

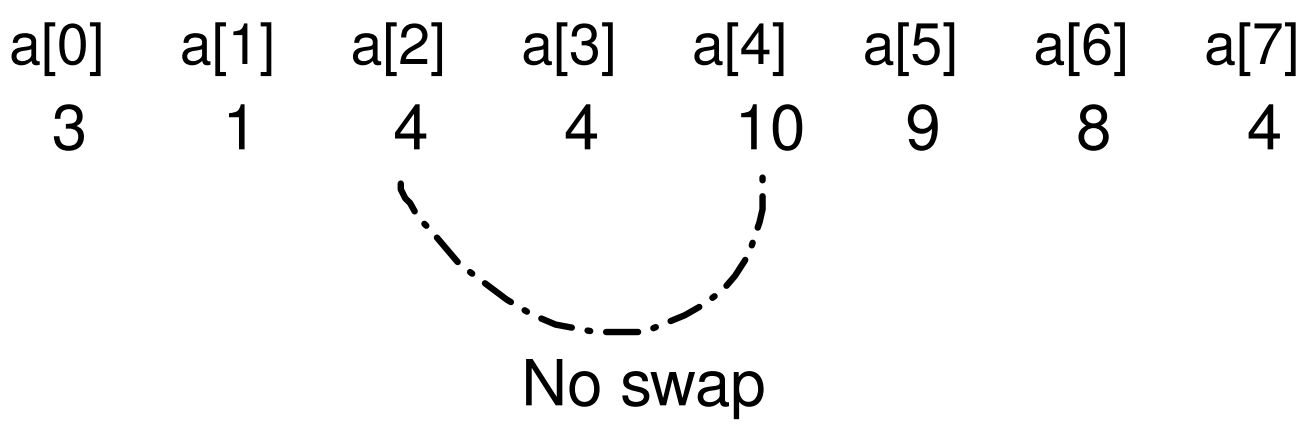
Gap = 2



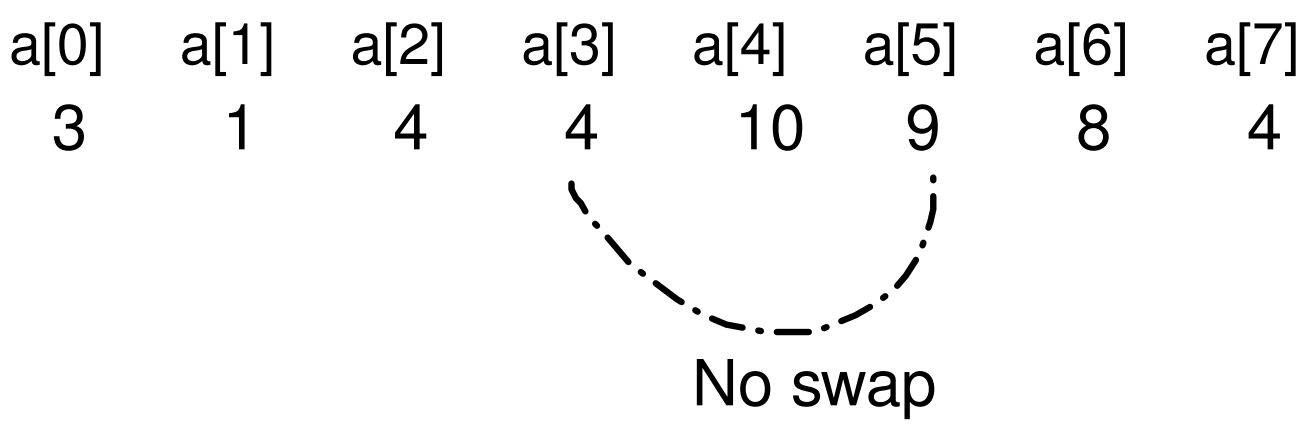
Gap = 2



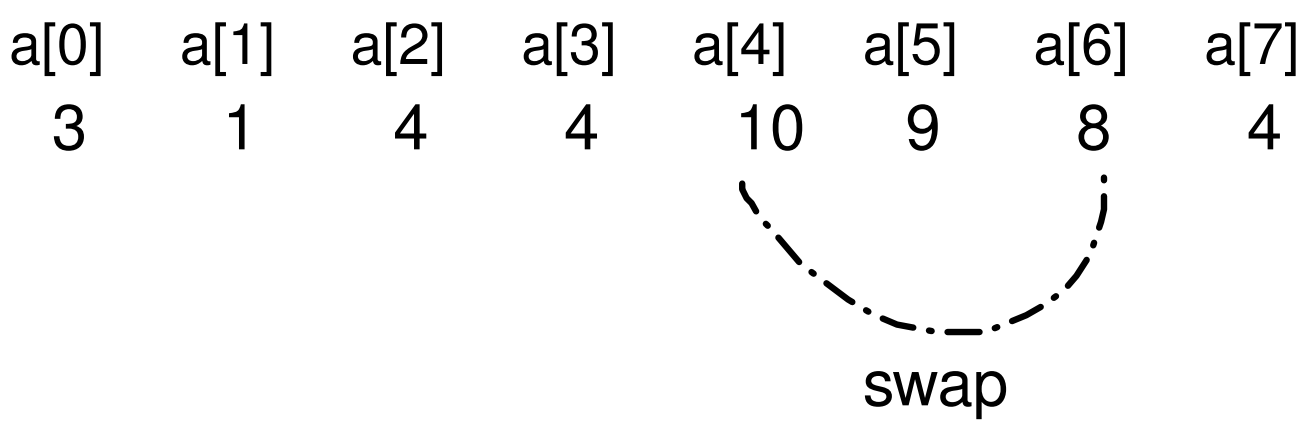
Gap = 2

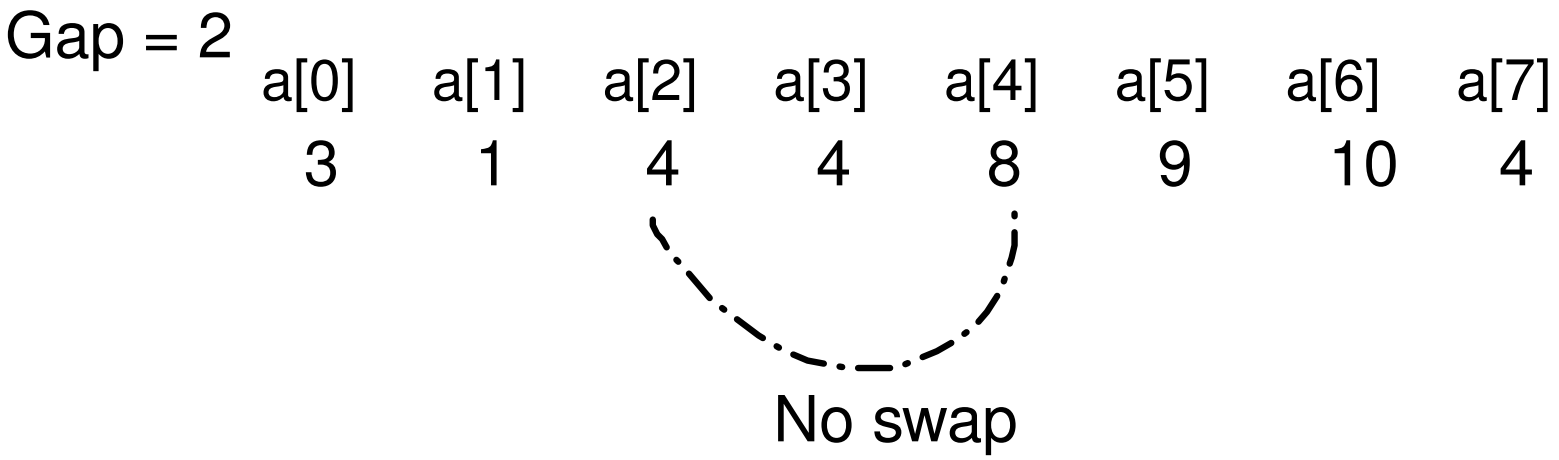


Gap = 2



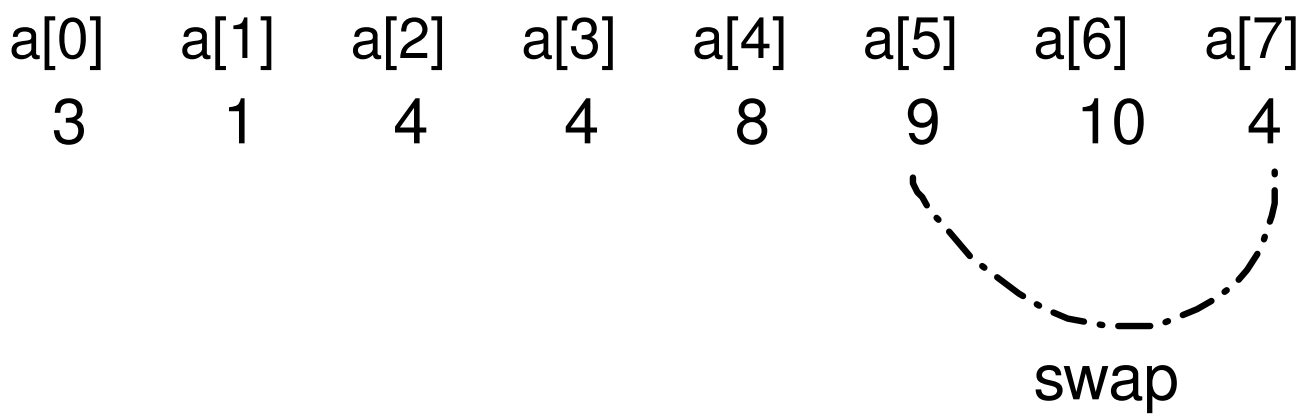
Gap = 2



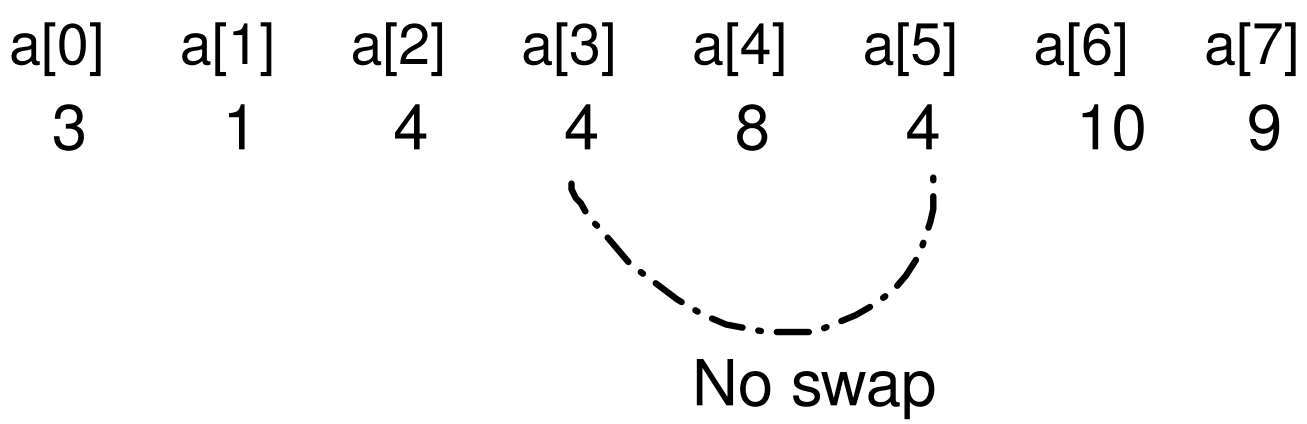


Be careful here that this check is necessary to push 8 further down as much as possible until there is no swap

Gap = 2



Gap = 2



Gap = 2

a[0]	a[1]	a[2]	a[3]	a[4]	a[5]	a[6]	a[7]
3	1	4	4	8	4	10	9

Now *a* is 2-sorted

Gap = 2

a[0]	a[1]	a[2]	a[3]	a[4]	a[5]	a[6]	a[7]
3	1	4	4	8	4	10	9

Now *a* is 2-sorted

Gap = 1

Basically now we do insertion sort on input *a*