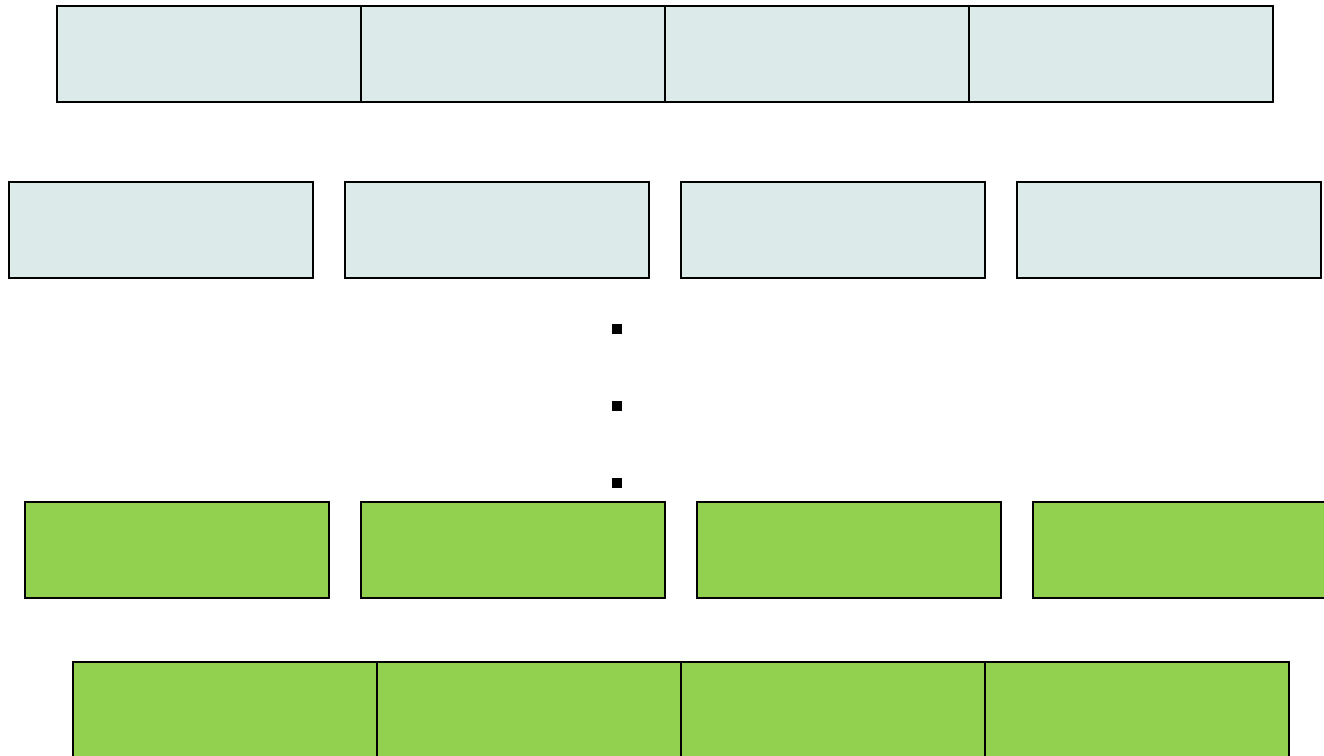

CS1020 Data Structures and Algorithms I

Lecture Note #14a

K-way Merge Sort

1 K-way Merge Sort (1/2)

- Can we make Merge Sort more efficient by dividing by k instead of 2?



1 K-way Merge Sort (2/2)

5	12	
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3	9	
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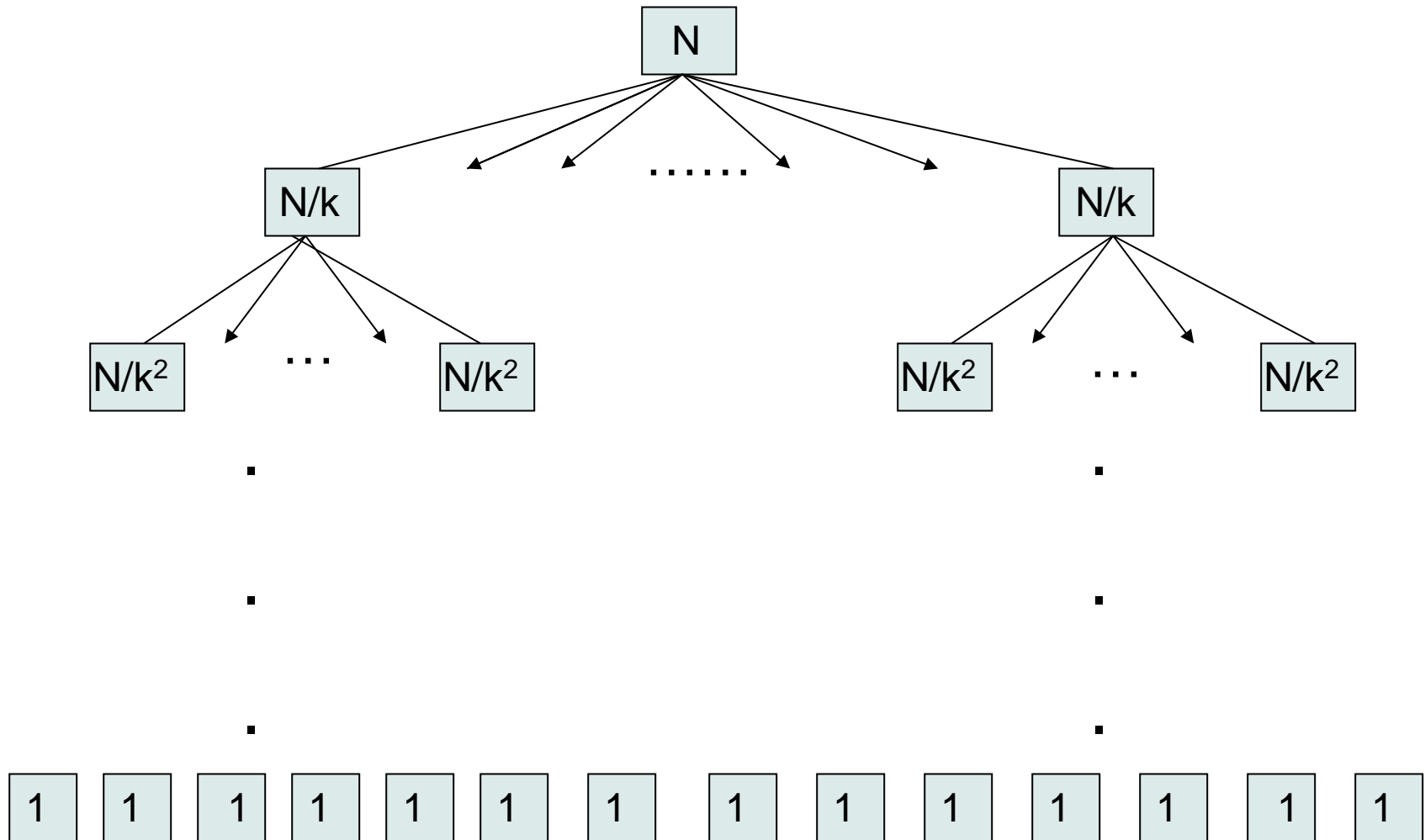
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10	16	
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6	7	
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2 Running time: $O(k \text{ Nlog}_k \text{ N})$



3 Improved K-way Merge Sort

5	12	
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3	9	
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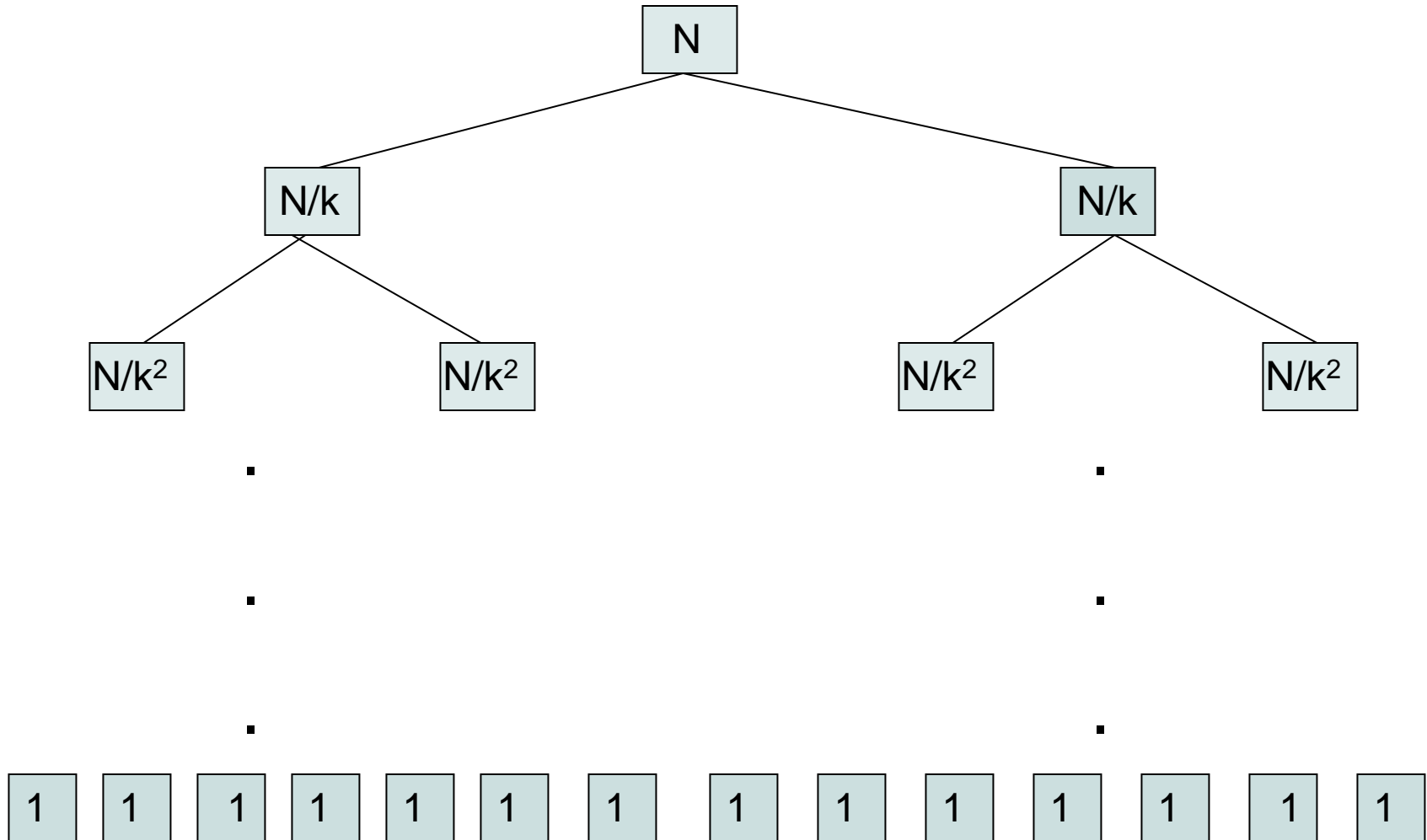
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10	16	
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6	7	
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4 Running time: $O(N \log_2 k \log_k N)$



4 Running time: $O(N \log_2 k \log_k N)$

- By changing the base, we get
 $O(N \log_2 N)$
- It is not really an improvement over 2-way Merge Sort
- But it has real application

End of file
