

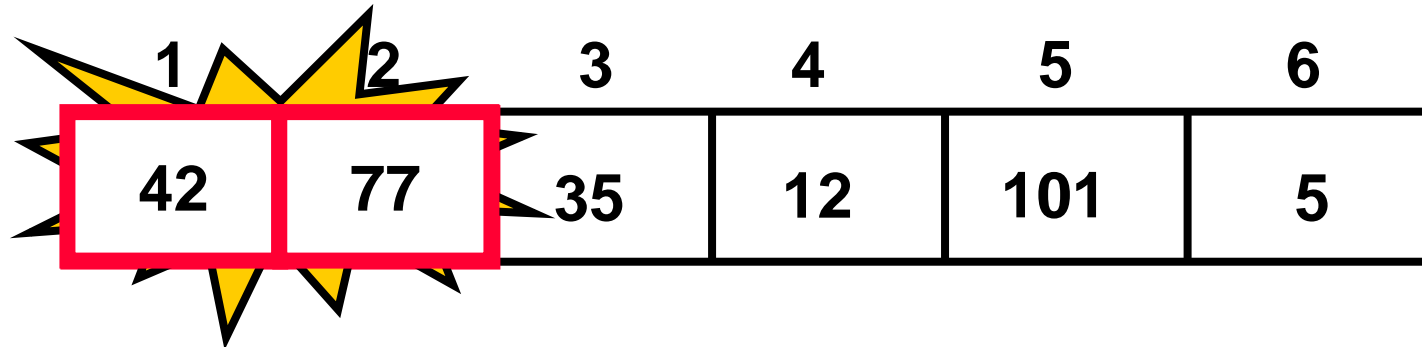
"Bubbling Up" the Largest Element

- **Traverse a collection of elements**
 - Move from the front to the end
 - “Bubble” the **largest value** to the end using **pair-wise comparisons and swapping**

1	2	3	4	5	6
77	42	35	12	101	5

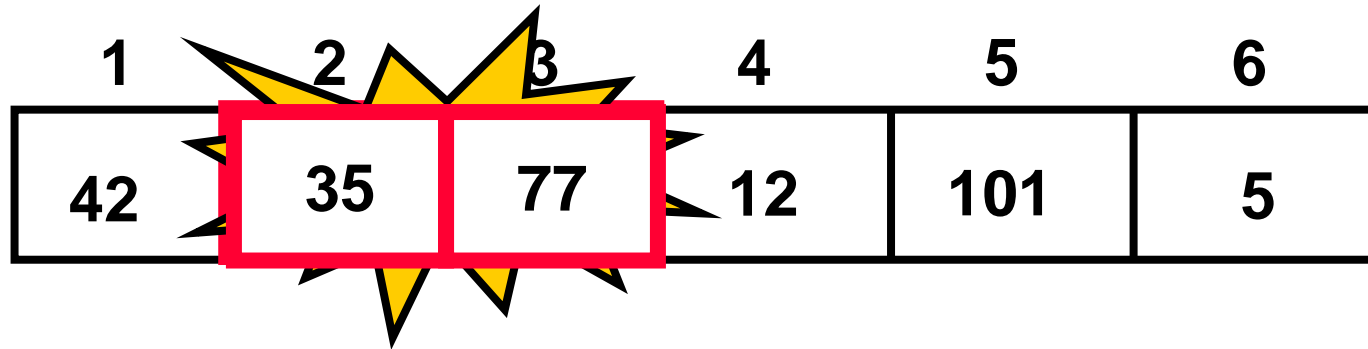
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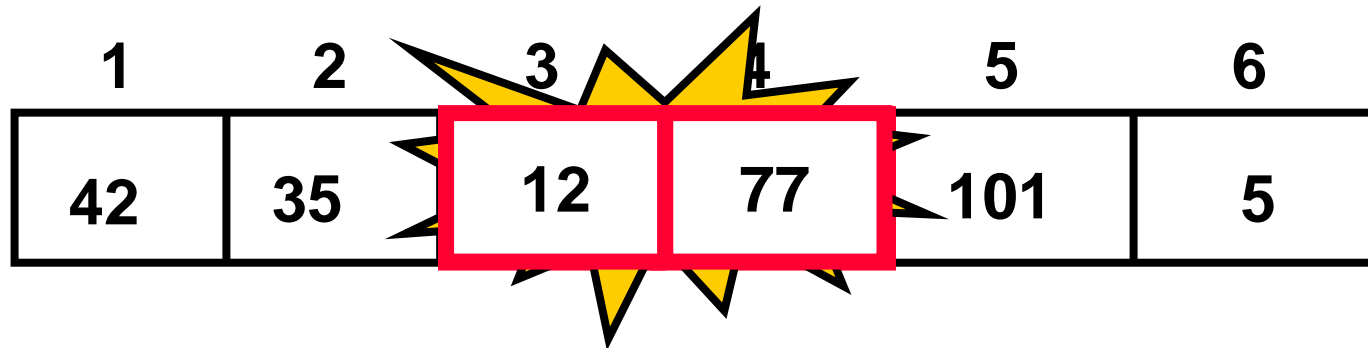
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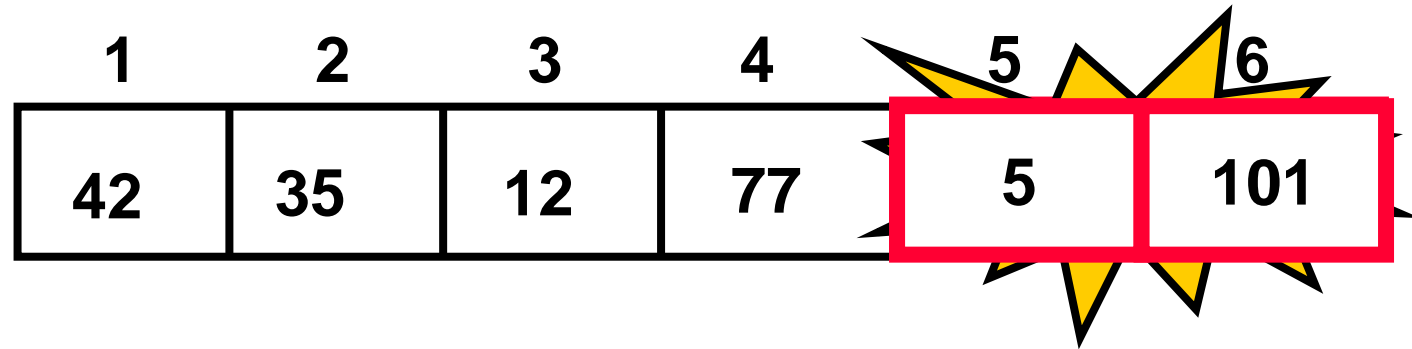
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No need to swap

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42	35	12	77	5	101

Largest value correctly placed

Items of Interest

- Notice that only the largest value is correctly placed
- All other values are still out of order
- So we need to repeat this process

1	2	3	4	5	6
42	35	12	77	5	101

Largest value correctly placed

“Bubbling” All the Elements

1	2	3	4	5	6
42	35	12	77	5	101
1	2	3	4	5	6
35	12	42	5	77	101
1	2	3	4	5	6
12	35	5	42	77	101
1	2	3	4	5	6
12	5	35	42	77	101
1	2	3	4	5	6
5	12	35	42	77	101

Reducing the Number of Comparisons

1	2	3	4	5	6
77	42	35	12	101	5

1	2	3	4	5	6
42	35	12	77	5	101

1	2	3	4	5	6
35	12	42	5	77	101

1	2	3	4	5	6
12	35	5	42	77	101

1	2	3	4	5	6
12	5	35	42	77	101