

S O T N I R G



Algorithms & Analysis

“By understanding sorting, we obtain an amazing amount of power to solve other problems.”

– STEVEN SKIENA, THE ALGORITHM DESIGN MANUAL

(Some) Classic Sorting Algorithms

- Bubble
- Selection
- Insertion
- Merge: 1945 Jon von Neumann
- Quick: 1959 Tony Hoare
- Heap: 1964 J. W. J. Williams
- Radix: 1887 Hermann Hollerith, for his Tabulating Machine
- Bogo?

Bubble Sort

1. Loop over elements
2. Swap anything that's out of order
3. Repeat 1-2 until there are no swaps

Bubble Sort

6 5 3 1 8 7 2 4

Big O

| | |
|-------|----------|
| Time | $O(n^2)$ |
| Space | $O(1)$ |