COP 3540 Data Structures with OOP

Chapter 7 - Part 1
Advanced Sorting

Advanced Sorting

- Two sorts we will cover first.
- **Shell Sort** – an $O(n(\log_2 n)^2)$ sort … in general, and 'can approach' O(n) performance!
- **Partitioning**, an $O(n\log_2 n)$ sort.
- Then, we'll cover the **QuickSort**.

Recall how the **Insertion Sort** worked.

- Took an element out of the ‘array’ and assumed all elements ‘to the left’ were sorted.
- We marked this spot.
- And we extracted out that element.
- We then
  - **compared** the element extracted out with the elements ‘to the left’ of this element and
  - ‘**inserted**’ this element into its proper place
  - **shifting all elements to the right** as needed to make room for this inserted element and fill the vacated spot.