

Sorting: Concept Challenge



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Concept Challenge: Procedure

- **Pause:** Try to solve the problem yourself
- **Discuss** with other learners (if you can)
- **Watch** the UCSD learners video
- **Confirm** your understanding with our explanation



Selection Sort: Basic Algorithm

For each **position i** from 0 to **$\text{length}-2$**

Find smallest element in **positions i to $\text{length}-1$**

Swap it with element in **position i**

Sorted

Still unsorted



A diagram illustrating the partitioning of an array in Selection Sort. A light gray rectangular box on the left is labeled "Sorted". To its right, the text "Still unsorted" is displayed. A blue curly brace spans the distance from the right edge of the "Sorted" box to the right. Below the left end of this brace is the variable i .

i

For selection sort on the two arrays

7 16 66 43 97 51

7 16 43 51 66 97



- A. Sorting the already sorted list is **faster**
- B. Sorting the already sorted list is **slower**
- C. Selection sort **takes the same time** no matter how the data in the array is organized



Break here for IVQ and
Learner Video

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The diagram shows a horizontal array divided into two sections. The left section is labeled 'Sorted' and is represented by a gray rectangle. The right section is labeled 'Still unsorted'. A blue curly brace spans the boundary between these two sections, with the variable i positioned below the left end of the brace, indicating the current index being processed.

i

7 16 66 43 97 51



7 16 43 51 66 97



Ultimately, how do we define faster?

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We'll explore this in detail in the next course.