Selection Sort
Lesson Plan: Class 06 / ALG / 06

Overall goal of the lesson	Students learn about the Selection Sort Algorithm
Prior Knowledge Required	None

Goal:	Introduce students to the Selection Sort algorithm by following through activities.
Description:	Both the activities involve sorting through a set of numbers using the concept of Selection Sort
Material Required:	1. One copy of worksheet per student 2. Pen/Pencil, eraser. 3. Lesson Presentation
Procedure Summary :	1. Go through the presentation. 2. Complete both the activities in the presentation. 3. Make sure every student is following them. 4. Provide the worksheets, it consists of similar sorting exercises along with some algorithm writing exercises. 5. Let the students solve them and help them with answers.
Procedure Details:	**Slide 1:** Title Slide **Slide 2:** Introduce the first activity, two lists are present, one sorted another unsorted. The first activity is to fill the sorted list in increasing order (or ascending order) of the numbers from the unsorted list **Slide 3:** Search for the smallest number in the unsorted list, here it is 5. Place it in the first row of the sorted list. **Slide 4:** Search for the next smallest number in the unsorted list. It is 9, place it in the second row of the sorted list. **Slide 5:** Repeat the same for 18 **Slide 6:** Next is 24 **Slide 7:** Next is 25 **Slide 8:** Next is 31 **Slide 9:** Next is 35. Check if the sorted list is in ascending order and there are no numbers left in the unsorted list.

	Slide 10: Introduce the second activity, only one list is available – the unsorted one. Convert this unsorted list into a sorted one. **Slide 11:** Find the smallest number, it is 5. Move the number 5 to first row and the number in the first row to the previous position of 5. Basically swap places between 5 and the number present in the first row. **Slide 12:** Now only the first row of the unsorted list has been sorted, from the rest of the list find the smallest number and exchange places with the number in the second row. The smallest number is 9 **Slide 13:** Repeat for 18. This time 18 is in the same place in the unsorted list, so its position doesn't change in the sorted list (exchange places with itself) **Slide 14:** Repeat for 24 **Slide 15:** Repeat for 25 **Slide 16:** Repeat for 31 **Slide 17:** Repeat for 35. Check the list is in ascending order. Hence, you have converted an unsorted list into a sorted one **Slide 18:** Ask the students if they realized they had been following some steps repeatedly to finish the activities **Slide 19:** Discuss the steps with them. Make sure everyone agrees they were following the exact same steps. This is called Selection Sort Algorithm **Slide 20:** Ask them some of the important questions to ignite their curiosity. A short note on this slide caters to the third bullet point in the slide. **Slide 21:** Thank you – move on to the worksheets.