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Batch : AI

Tutorial No : 04

Subject : DATA STRUCTURES

Q.1) The process of placing or rearranging a collection of element into a particular order is known as _____.

⇒ Answer :- Sorting

Q.2) _____ sort is the simplest sorting algorithm that works by repeatedly adjacent elements in case they are unordered in $n-1$ passes.

⇒ Answer : Bubble Sort

Q.3) In _____ the smallest element is selected from the unsorted array and swapped with the left most element.

⇒ Answer : Selection Sort.

Q4 Sort an Array: $A = [33, 14, 25, 67, 99, 66]$ in an ascending order using selection sort. After 2 'swaps', how will the array look like?

⇒ Answer :-

$$A = [33, 14, 25, 67, 99, 66]$$

Swap 1 $A = [14, 33, 25, 67, 99, 66]$

⇒ Swap 2 $A = [14, 25, 33, 67, 99, 66] \rightarrow \text{Answer}$

Q5 Demonstrate the working of bubble sort for the following set of data elements.

① $A = [8, 2, 6, 4, 5]$

Answer $A = [8, 2, 6, 4, 5]$

$$A = [2, 8, 6, 4, 5]$$

$$A = [2, 6, 8, 4, 5]$$

$$A = [2, 6, 4, 8, 5]$$

$$A = [2, 6, 4, 5, 8]$$

$$A = [2, 4, 6, 5, 8]$$

$$A = [2, 4, 5, 6, 8] \rightarrow \text{Sorted array}$$

Q.6 show how selection sort works for the following?

① $[7, 2, 1, 6]$

→ $[1, 2, 7, 6]$

Sorted

unsorted

$[1, 2, 7, 6]$

Sorted

unsorted

$[1, 2, 6, 7]$

Answer

Sorted Array

② $[15, 22, 45, 10, 35, 60]$

$[10, 15, 22, 45, 35, 60]$

Sorted

unsorted Array

$[10, 15, 22, 45, 35, 60]$

sorted

unsorted

$[10, 15, 22, 35, 45, 60]$

sorted