Submission Details

Grade: 15 / 20

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Seatwork 7.1 Using Sorting Algorithms

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Attempts 1

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1.) What is sorting algorithm?

A sorting is wherein a process that arranging or organizing a set of elements or collection in an specific order. For example, we can arrange a number of peso bills from highest to lowest or arranging the size of coins from smallest to largest. Rearranging a given array or a list of elements in an order is sorting algorithm (Geeks for geeks, 2025). For example, an array of a size of 5 that has an element of {3, 2, 4, 1, 5} can be arrange into largest to lowest such that the result would be {5, 4, 3, 2, 1}. There are different approaches for sorting algorithms for different types of input such as binary array, character array, an array with a large range of values (Geeks for geeks, 2025).

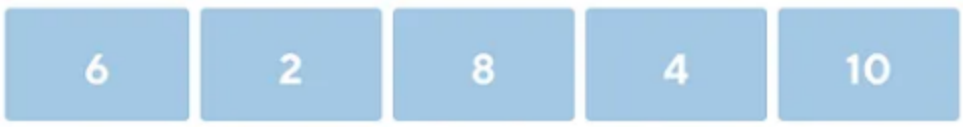
2.) Where can sorting algorithms be used?

According to Geeks for geeks (2025a), sorting algorithms can be used in data management which it makes it easier to search, retrieve, and analyze. It can also be used in sorting data in databases which enhances query efficiency. Data is usually maintained in a sorted manner by the primary index to enable fast querying. Moreover, it is also in machine learning, which can be help in preparing data for machine learning, and it is use for data analysis which helps in recognizing patterns, trends, and anomalies in data sets. It plays a crucial role in statistical analysis, financial modeling, and various data-driven domains.

3.) Explain the different types of sorting algorithms.

The different types of sorting algorithms are bubble sort, selection sort, insertion sort. The mentioned sorting techniques are comparison sorts. They're differences are:

- In bubble sort, the elements are swap repeatedly until they are in order. For example:



- Here, we will arrange it in increasing order. We will compare the first

element which is 6 and 2 and swap it until the 6 is in the right order. This will be repeated or it is in iteration after it was swap for every number.

- In selection sort, it will start at the first element and finds the smallest

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