PREFACE

In computer science, a sorting algorithm is an algorithm that puts elements of a list in a certain order. The most used orders are numerical order and lexicographical order. Efficient sorting is important for optimizing the use of other algorithms (such as search and merge algorithms) that require sorted lists to work correctly; it is also often useful for canonicalizing data and for producing human-readable output. More formally, the output must satisfy two conditions:

- The output is in non-decreasing order (each element is no smaller than the previous element according to the desired total order).

- The output is a permutation (reordering) of the input.

Since the dawn of computing, the sorting problem has attracted a great deal of research, perhaps due to the complexity of solving it efficiently despite its simple, familiar statement. For example, bubble sort was analyzed as early as 1956. Although many consider it a solved problem, useful new sorting algorithms are still being invented (for example, library sort was first published in 2006). Sorting algorithms are prevalent in introductory computer science classes, where the abundance of algorithms for the problem provides a gentle introduction to a variety of core algorithm concepts, such as Big-O notation, divide and conquer algorithms, data structures, randomized algorithms, best, worst and average case analysis, time-space tradeoffs, and lower bounds.

ACKNOWLEDGEMENT

We present herewith pride & pleasure the perfect work of **"COMPARATIVE STUDY OVER SORTING ALGORITHM**" with the help of **'C'** aimed to supplement the scholastic attainment as required under the regulation of West Bengal State Council of Technical Education (WBSCTE).

Life of human being is full of interaction. No one is a self-sufficient by himself. In our daily life we go ahead by acquiring something from each other. Whenever anyone is doing serious and important work, where a lot of help and guidance from many people concerned is required, one feels obliged to them. The guidance and cooperation during the project work has left a long impression in our mind and while giving the final shape to our project report. We would like to take a minute to acknowledge those who made this project possible for us.

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OBJECTIVES

- Try to analysis the different type of sorting algorithms.
- Try to develop and algorithm which is better or effective as per as complexity concern.
- The objective is to take an unordered set of comparable data items and arrange them in order.
- We will usually sort the data into ascending order sorting into descending order is very similar.
- Data can be sorted in various ADTs, such as Arrays and Trees.

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CONTENTS