Data Structures Assignment 4 - Advanced Sorting

# Binary Search Tree

The binary search tree sorts by inserting items. Then the tree is traversed in order. It has all the basic functions needed to do sorting and clearing itself. This includes removal of an item.

# Merge Sort

This is an implementation of the merge sort algorithm.

# Quick Sort

This is an implementation of the Quick Sort algorithm that uses median of 3 partitioning.

The application should be compiled as a project. It uses a high precision timer class that is licensed as public domain. It performs 5 trials and also displays the average of the trials at each repetition.

# Results (in seconds)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| N | 10000 | 50000 | 100000 | 500000 |
| BST | 0.0108 | 0.06279 | 0.135 | 0.8922 |
| MergeSort | 0.003226 | 0.017487 | 0.036328 | 0.20151 |
| QuickSort | 0.002303 | 0.012225 | 0.025319 | 0.136977 |