Merge Coursework

Introduction

This project compares 2 algorithms, one using a recursive method and the other using an iterative method. The aim is to compare the efficiency of the methods using count variables and analyse that compared to the theoretical efficiency.

Experimental Method

Results of Experiment 2, Iterative   
Merge-Sort

|  |  |  |  |
| --- | --- | --- | --- |
| Size of Array | Comparisons | Copies | Recursive Calls |
| 5 | 18 | 24 | 8 |
| 10 | 52 | 68 | 18 |
| 15 | 88 | 118 | 28 |
| 20 | 135 | 176 | 38 |
| 30 | 223 | 296 | 58 |
| 40 | 328 | 432 | 78 |
| 50 | 424 | 572 | 98 |

Results of Experiment 2, Iterative   
Merge-Sort

|  |  |  |
| --- | --- | --- |
| Size of Array | Comparisons | Copies |
| 5 | 68 | 121 |
| 10 | 505 | 880 |
| 15 | 1623 | 2901 |
| 20 | 3734 | 6810 |
| 30 | 12183 | 22790 |
| 40 | 28362 | 53820 |
| 50 | 54716 | 104900 |