Kalyn Howes

2.18.21

Lab 3

The table below holds the time (in seconds) Heap Sort took to complete based on the array size and its content.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TIMING | Sorted | Backwards | Duplicates | Random |
| 100 | 1.5e-05 | 9e-06 | 1.1e-05s | 1.1e-05 |
| 10,000 | 0.001905 | 0.001614 | 0.002111 | 0.002601 |
| 50,000 | 0.011285 | 0.010534 | 0.014563 | 0.013437 |
| 100,000 | 0.020935 | 0.021195 | 0.032512 | 0.028747 |
| 500,000 | 0.121329 | 0.124149 | 0.16495 | 0.177931 |
| 750,000 | 0.190824 | 0.197331 | 0.295755 | 0.298029 |
| 1,000,000 | 0.276633 | 0.268113 | 0.414979 | 0.485053 |
| 100,000,000 | 30.3218 | 29.7082 | 73.4601 | 76.3848 |

The graph below shows the four different array types and compares their sizes to the time taken to complete the Heap Sort. The equations for each line are included as wel..

Chart, line chart

Description automatically generated