COMP 301

Analysis of Algorithms

Lab 8 Report

2. The output for the first question is given below:

**The sorted array:**

**[15, 95, 80, 84, 61, 45, 1, 46, 52, 74]**

**Time to sort array of size 10 with heap sort: 10900**

|  |  |  |
| --- | --- | --- |
| Input size | Heap sort running time | Merge sort running time |
| 4 | 3200 | 6900 |
| 64 | 59900 | 116800 |
| 256 | 469400 | 7407600 |
| 1024 | 821300 | 8757800 |
| 4096 | 1580900 | 11920200 |
| 16384 | 4896800 | 14786800 |
| 65536 | 25688300 | 39421300 |
| 262144 | 88246100 | 124618700 |
| 1048576 | 291680600 | 491398500 |
| 4194304 | 936465400 | 1166535500 |
| 16777216 | 3425833400 | 4794930200 |
| 67108864 | 15020644300 | 16999071300 |

1. Working Set (Physical memory in use): 1,942,208 KB
2. Working Set (Physical memory in use): 1,972,504 KB

According to data, we can conclude that merge sort uses more RAM compared to heap sort