Report: SP4

*Problem 2 – nth Fibonacci*

|  |  |  |
| --- | --- | --- |
| Algorithm 🡪 | Linear Fibonacci | Log Fibonacci |
| N = 20000 |  |  |
| Time Taken | 9 msec | 0 msec |
| Memory | 20 MB / 245 MB | 21 MB / 245 MB |
| N= 30000 |  |  |
| Time Taken | 53 msec | 15 msec |
| Memory | 42 MB / 245 MB | 43 MB / 245 MB |
| N= 40000 |  |  |
| Time Taken | 67 msec | 8 msec |
| Memory | 79 MB / 245 MB | 80 MB / 245 MB |

*Problem 3: Variations of Merge Sort*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Algorithm 🡪 | MergeSort1 | MergeSort2 | MergeSort3 | MergeSort4 |
| N = 1000000 | | | | |
| Time Taken | 281 msec | 200 msec | 172 msec | 172 msec |
| Memory | 23 MB / 123 MB | 27 MB / 123 MB | 31 MB / 123 MB | 11 MB / 155 MB |
| N = 2000000 | | | | |
| Time Taken | 594 msec | 391 msec | 360 msec | 349 msec |
| Memory | 22 MB / 117 MB | 30 MB / 117 MB | 38 MB / 117 MB | 31 MB / 116 MB |
| N = 7000000 | | | | |
| Time Taken | 1813 msec | 1481 msec | 1201 msec | 1421 msec |
| Memory | 118 MB / 194 MB | 55 MB / 189 MB | 82 MB / 189 MB | 80 MB / 186 MB |