**REPORT for SP9:**

**Observations for sorting using Insertion sort and Merge sort over a large random array**

**Insertion sort:**

Average Time elapsed= *INFINITY* (more than 2 minutes)

**Merge Sort:**

|  |  |  |  |
| --- | --- | --- | --- |
| **# of elements** | **Time elapsed** | | |
| **Take 1** | **Take 2** | **Take 3** |
| 8M | 3859 msec | 2838 msec | 2710 msec |
| 16M | 8432 msec | 6418 msec | 5654 msec |
| 32M | 10542 msec | 7203 msec | 6741 msec |
| **AVERAGE TIME** | 7611 msec | 5486 msec | 5035 msec |

**Performance:**

Merge Sort Take 3 > Take 2 > Take 1 > Insertion Sort

**Conclusion:**

-Merge Sort performs better than Insertion Sort over large arrays.

-Improvised versions of Merge Sort show considerable improvement in running time.