Amrita Vishwa Vidyapeetham
Amrita School of Computing, Amritapuri
B.Tech. Computer Science and Engineering (AI)
Fourth Semester
22AIE212 Design and Analysis of Algorithms

Lab Sheet 4

<u>Sorting Techniques</u>

Implement the following sorting algorithms and answer the associated questions.

1. Merge sort

    a. What is the time complexity of a merge sort algorithm? Is there any difference between the best case and the worst case?
    b. Give examples for best-case and worst-case inputs.

2. Quick sort
    a. What is the time complexity of the Quick Sort algorithm? Is there any difference between the best case and the worst case?
    b. Give examples for best-case and worst-case inputs.

3. Sort a set of strings{a,p,p,l,e} using Radix sort
4. Perform Radix sort on the following elements: 180, 25, 72, 507, 34, 2, 99
5. Perform Heapsort on the following elements: 180, 25, 72, 507, 34, 2, 99