IT Lab – M.Tech CS (Algo)

July – Dec 2019

Assignment -3 (13 August 2019)

Analysing Quick Sort:

The tricky part of Quick Sort implementation is fixing the end conditions properly.

Write your own program for Quick Sort and do the following analysis:

A. Run your program on input lists of integers that are a) in random order b) containing large number of duplicate elements and c) sorted in the descending order.

Tabulate the number of comparisons and swaps that are taken by Quick sort on lists of different sizes. Does your procedure handle the duplicate elements well?

B. Insert the following code into the logic of your Partitioning procedure:

```
for( ; ; )
{
        while ( A[i] < Pivot ) i++;
        while ( A[j] > Pivot ) j--;
        if( i < j)
                swap (&A[i], &A[j]);
        else
                break;
}
```

What do you observe? Analyse.