 Habib University

Data Structures and Algorithms

CS/CE 102/171 Spring 2023

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**Class Activity Quick Sort**

Sort the Following Text in Ascending Order Using Quick Sort show the Mid values and Partitioning Steps for each Recursive Call. You can compare the Alphabets in their Alphabetical Order.

“Quick Sort is the fastest”

Consider the following Recurrence Algorithm, calculate the recurrence relation and Solve it.

Test(n): ---- T(n)

If n > 0:

Print(n)

Test(n-1)

Consider the recursive Binary Search Algorithm, find its Recurrence Relation and Prove that its O(log n)

BinarySearch(A[0..N], val, low, high) {

if (high < low)

return -1

mid = low + (high - low) / 2

if (A[mid] > val)

return BinarySearch(A, val, low, mid-1)

else if (A[mid] < value)

return BinarySearch(A, value, mid+1, high)

else

return mid

}