CS3101 - COMPTUATIONAL THINKING LAB

BATCH - P

<u>WEEK - 13 - 22.12.2023</u>

ANALYSIS OF SEARCH ALGORITHM

OBSERVATION & EXECUTION

1. Write a 'C program & Analysis' the working of the algorithm for the following.

a. Linear Search.

b. Binary Search for sorted and unsorted list.

Analysis should include the following scenario.

No.ComparisonsPartitions1.Linear SearchSearch Element is found at the beginningImage: Comparison searchPartitionsSearch Element is found at the endSearch Element is found at the endImage: Comparison searchPartitionsSearch Element is found at the endSearch Element is found at the middleImage: Comparison searchPartitionsSearch Element is found at the middleSearch Element is not foundImage: Comparison searchImage: Comparison search2.Binary SearchFully Sorted ListImage: Comparison searchImage: Comparison search	S.	Search Algorithm	Test Case	Run Time	No. of	No. of
found at the beginning found at the beginning Search Element is found at the end Search Element is found at the middle Search Element is not found	No.				Comparisons	Partitions
beginning	1.	Linear Search	Search Element is			
Search Element is found at the end Search Element is found at the middle Search Element is not found			found at the			
found at the end Search Element is found at the middle Search Element is not found			beginning			
Search Element is found at the middle			Search Element is			
found at the middle Search Element is not found			found at the end			
Search Element is not found			Search Element is			
not found			found at the middle			
			Search Element is			
2. Binary Search Fully Sorted List			not found			
	2.	Binary Search	Fully Sorted List			
Partially Sorted List			Partially Sorted List			
Fully Unsorted List			Fully Unsorted List			
Partially Unsorted			Partially Unsorted			
List			List			

SPOT

1. Write a 'C program & Analysis' the working of the algorithm for the following.

c. Binary search

Analysis should include the following scenario.

S.	Search Algorithm	Test Case	Run Time	No. of	No. of
No.				Comparisons	Partitions
1.	Binary Search	Search Element is			
		found at the			
		beginning			
		Search Element is			
		found at the end			
		Search Element is			
		found at the middle			
		Search Element is			
		not found			