

Quiz one
Datastructures
Sorting and Searching

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Question 1

Binary search is commonly known as a _____ or a _____.

Options:

1. half-interval search
2. logarithmic search
3. 1 & 2
4. Fibonacci Search

Question 2

What is the Worst case time complexity of bubble sort?

Options:

1. $O(n \log(n))$
2. $O(nn!)$
3. $O(n^2)$
4. $\Omega(n)$

Question 3

Which of the following do we consider when choosing a sorting algorithm to use? I. Constant Space II. Run time Space III. Time Space IV. Implementation language

Options:

- I. Constant Space
- II. Run time Space
- III. Time Span
- IV. Implementation language

Question 4

The following formula is of: left_subtree key \leq root key \leq right_subtree keys

Options:

1. Binary Tree
2. AVL Tree
3. Binary Search Tree
4. None of the above

Question 5

State the following statement is true or false Linear search is rarely used practically because other search algorithms such as the binary search algorithm significantly faster searching comparisons.

Options:

1. True
2. False

Question 6

What is time complexity of Binary search?

Options:

1. $O(\log(n))$
2. $O(n \cdot n!)$
3. $\Omega(n)$
4. $O(n)$

Question 7

How Many iterations will it takes to find 38 from an given array using binary search
arr = 10,20,38,57,100

Options:

1. 4
2. 2
3. 3
4. 1

Question 8

Big Theta (θ)

Options:

1. When an algorithm has a complexity within lower and upper bound
2. Describes the lower bound of a asymptotic function
3. Describes the worst-case of an algorithm
4. None of the above

Question 9

The algorithm which repeatedly breaks down a list into several sublists until each sublist consists of a single element.

Options:

1. Selection Sort
2. Merge Sort
3. Bubble Sort
4. Heap Sort

Question 10

If for an algorithm time complexity is given by $O(n)$ then its complexity is?

Options:

1. constant
2. linear
3. exponential
4. none of the mentioned