CS23336-Introduction to Python Programming

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Question 1

Complete
Marked out of 1.00
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Question text

In a linear search, how many comparisons are made in the worst-case scenario to find an element in a list of size n?

Question 1 Answer

◉ a. n
○ b. log n
○ c. 1
○ d. n/2

Question 2

Complete
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Question text

What is the best-case time complexity of linear search?

Question 2 Answer

○ a. O(n log n)
○ b. O(n)
◉ c. O(1)
○ d. O(log n)

Question 3

Complete
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Flag question

Question text

Which of the following is not a limitation of binary search algorithm?

Question 3 Answer

○
a.

There must be a mechanism to access middle element directly

◉
b.

Binary search algorithm is not efficient when the data elements more than 1500

○
c.

Must use a sorted array

○
d.

Requirement of sorted array is expensive when a lot of insertion and deletions are needed

Question 4

Complete
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Question text

In binary search, how is the middle element determined?

Question 4 Answer

○
a.
By comparing each element sequentially
○
b.
By using a hash function
○
c.
By starting from the first element
◉
d.
By dividing the list length by two

Question 5

Complete
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Question text

What is the first step in binary search?

Question 5 Answer

○
a.
Divide the list into two equal parts
○
b.
Sort the list
○
c.
Compare the target element with the first element in the list
◉
d.
Compare the target element with the middle element in the list

Question 6

Complete

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Flag question

Question text

During a binary search, what happens if the target element matches the middle element?

Question 6 Answer

◉
a.
The search ends successfully
○
b.
The search continues in the left sublist
○
c.
The search continues in the right sublist
○
d.
The list is sorted

Question 7

Complete
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Question text

What is the advantage of binary search over linear search?

Question 7 Answer

○
a.
Binary search can find multiple instances of the target element
○
b.
Binary search works on unsorted lists
○
c.
Binary search does not require dividing the list
◉
d.
Binary search has a lower time complexity on large, sorted lists

Question 8

Complete
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Flag question

Question text

In binary search, what happens if the middle element does not match the target element?

Question 8 Answer

○
a.
The list is sorted
○
b.
The search continues from the beginning
○
c.
The search stops
◉
d.
The search continues in the left or right sublist

Question 9

Complete

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Flag question

Question text

During a linear search, what is the maximum number of comparisons needed to find an element in a list of size n?

Question 9 Answer

○
a.
n/2

○
b.
log n

○
c.
n

◉
d.
n-1

Question 10

Complete
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Flag question

Question text

_____sort is the simplest sorting algorithm that works by repeatedly swapping the adjacent elements in case they are unordered in n-1 passes.

Question 10 Answer

○
a.

Complexity

○
b.

Insertion

○
c.

Selection

◉
d.

Bubble

Question 11

Complete
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Flag question

Question text

In linear search, if the target element is not found in the list, what is the result?

Question 11 Answer

○
a.
The first element is returned

◉
b.
The search is considered unsuccessful
○
c.
An error is raised
○
d.
The last element is returned

Question 12

Complete
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Flag question

Question text

What type of search would be most appropriate for finding an element in a list that is frequently updated?

Question 12 Answer

○
a.
Interpolation search
○
b.
Hash search
○
c.
Binary search
◉
d.
Linear search

Question 13

Complete
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Flag question

Question text

If a list contains 1000 elements, how many comparisons would a binary search typically make in the worst case?

Question 13 Answer

○
a.
1000
◉
b.
10
○
c.
500
○
d.
100

Question 14

Complete
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Flag question

Question text

In which situation is linear search more efficient than binary search?

Question 14 Answer

◉
a.
When the list is small and unsorted

○
b.
When the list is small and sorted
○
c.
When the list is large and unsorted
○
d.
When the list is large and sorted

Question 15

Complete
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Flag question

Question text

What happens when the element is found in linear search?

Question 15 Answer

○
a.
The search backtracks to find duplicate elements
◉
b.
The search stops immediately
○
c.
The search starts over from the beginning
○
d.
The search continues until the end of the list

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