

CS23336-Introduction to Python Programming

Started on Wednesday, 30 October 2024, 6:13 PM

State Finished

Completed on Wednesday, 30 October 2024, 6:27 PM

Time taken 13 mins 50 secs

Question 1

Complete

Marked out of 1.00



Flag question

Question text

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

Question 1 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 2

Complete

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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 2 Answer

☐

a.

n-1

☐

b.

n/2

☒

c.

n

☐


d.

log n

Question 3

Complete

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Question text


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

Question 3 Answer

- ☐
- a.
500
- ☒
- b.
10
- ☐
- c.
1000
- ☐
- d.
100

Question 4

Complete
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Question text


Which of the following is a type of searching method?

Question 4 Answer

- ☒
- a.
Linear search
- ☐
- b.
Merge search
- ☐
- c.
Quick search
- ☐
- d.
Bubble search

Question 5

Complete
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Question text

_____ search takes a sorted/ordered list and divides it in the middle.

Question 5 Answer

- ☐
- a.
Hash
- ☐
- b.
Linear
- ☐
- c.
Both (1) & (3)
- ☒
- d.

Binary

Question 6

Complete

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Question text

In binary search, how is the middle element determined?

Question 6 Answer

☐

a.
By comparing each element sequentially

☒

b.
By dividing the list length by two

☐

c.
By starting from the first element

☐

d.
By using a hash function

Question 7

Complete

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Flag question

Question text

What is searching in the context of computer science?

Question 7 Answer

☐

a.
Deleting elements from a list

☐

b.
Sorting elements in a list

☐

c.
Inserting elements into a list

☒

d.
Determining whether an element is present in a list

Question 8

Complete

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Flag question

Question text

In linear search, how is the element searched?

Question 8 Answer

☒

a.
By comparing each element in the list sequentially

☐

b.
By dividing the list into halves

☐


c.
By sorting the list first

☐

- d.
By using a hash function

Question 9

Complete
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 Flag question

Question text


Which of the following is a limitation of binary search?

Question 9 Answer

- ☐
- a.
It is slower than linear search for small lists
- ☐
- b.
It does not work with negative numbers
- ☐
- c.
It can only be applied to large lists
- ☒
- d.
It requires the list to be sorted

Question 10

Complete
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 Flag question

Question text


What is the time complexity of binary search in the worst case?

Question 10 Answer

- ☐
- a.
 $O(n)$
- ☒
- b.
 $O(\log n)$
- ☐
- c.
 $O(n \log n)$
- ☐
- d.
 $O(1)$

Question 11

Complete
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 Flag question

Question text

The average case occurs in the linear search algorithm

Question 11 Answer

- ☒
- a.
When the item is somewhere in the middle of the array
- ☐
- b.
Item is the last element in the array or item is not there at all

☐

c.

When the item is not the array at all

☐

d.

When the item is the last element in the array

Question 12

Complete

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Flag question

Question text

If the target element is greater than the middle element in binary search, where does the search continue?

Question 12 Answer

☐

a.

At the beginning of the list

☐

b.

In the left sublist

☒

c.

In the right sublist

☐

d.

In the middle of the list

Question 13

Complete

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Flag question

Question text

Given an array $arr = \{45, 77, 89, 90, 94, 99, 100\}$ and $key = 99$; what are the mid values(corresponding array elements) in the first and second levels of recursion?

Question 13 Answer

☐

a.

89 and 99

☐

b.

89 and 94

☒

c.

90 and 99

☐

d.

90 and 94

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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Question text

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

Question 15 Answer



a.

The search stops



b.

The search continues in the left or right sublist



c.

The search continues from the beginning



d.

The list is sorted

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