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# Data Structures interview Questions & Answers

## Part - 1

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Q 1 What are data structures?

→ Data structures are the methods and techniques used to maintain data in an organized fashion. This is primarily done to ensure that data can be manipulate and accessed in an efficient manner.

Q 2 What is difference between File structure & Data Structure

	Data structure	File structure
i	Data Stored on a disk Both Disk and Ram	Data stored on Disk
ii	Sta Costomized storage polices	Standard file storage polices
iii	High compatibility with external apps	Low compatibility with external apps
iv		



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Q3) What is Linked List

→ Linked List is a data structure consist of individual entities called nodes. These nodes have capability of to connect other nodes and create chain of the process. These continuous chain structure forms a linked list. as the name suggest.

Q4) What are the types of searching used in Data Structure?

→ There are two methods of searching

i) Linear search

Linear search involves iterating over a data unit in order to perform the required operation

ii) Binary search

Binary search is more efficient in a way that it has the ability to split the data unit into chunks and then perform search operation.

Q5) How are individual elements accessed in an array?

Each of the values in an array is given an index position from 0 to  $n-1$ , where " $n$ " is the number of elements in the array. individual elements can be accessed by using the index element for operations. Multi dimensional arrays have more than one dimension to work with.



Q6) How does binary search work?

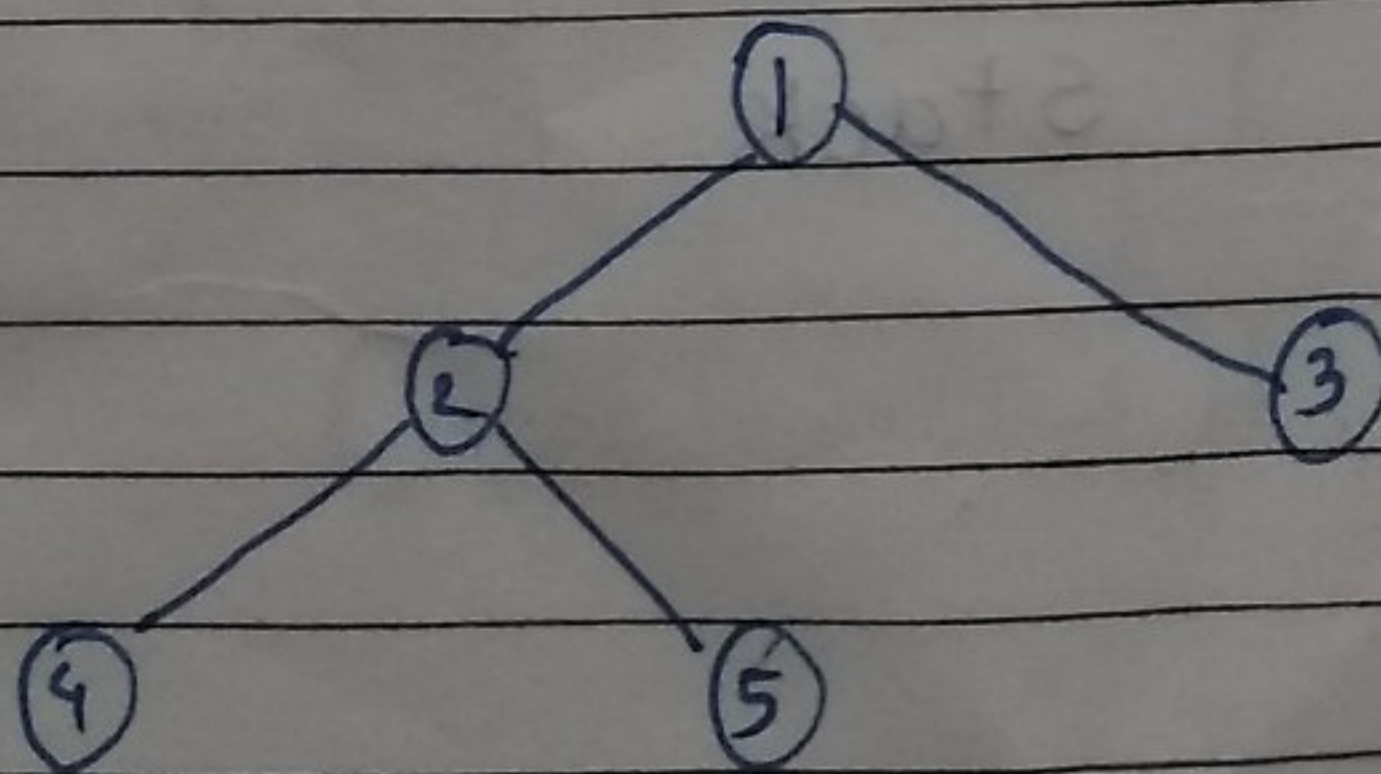
→ Binary search is used when there is primarily a creation of efficiency. It involves working on already ordered data, which is sorted either in ascending order or descending order. To begin with the middle element of the array is found out and search begins from there. The array is searched in two parts based on a search value being higher or lower than the middle element. It is the key to know the order of the arrangement to help search the value accordingly.

Q7) What is Queue in Data structure?

→ A Queue is a widely used data structure that is used to denote the ordered access and manipulation of an element. The operation of this data structure is exactly the same as a literal queue in the real world. Elements are added one after the other and are processed on the front end.

Q8) What is binary tree?

→ A binary tree, as a name suggests, is a tree data structure with two nodes, which are the nodes on the left and the right sides of the root node. In usage, binary trees are considered to be extended linked lists.



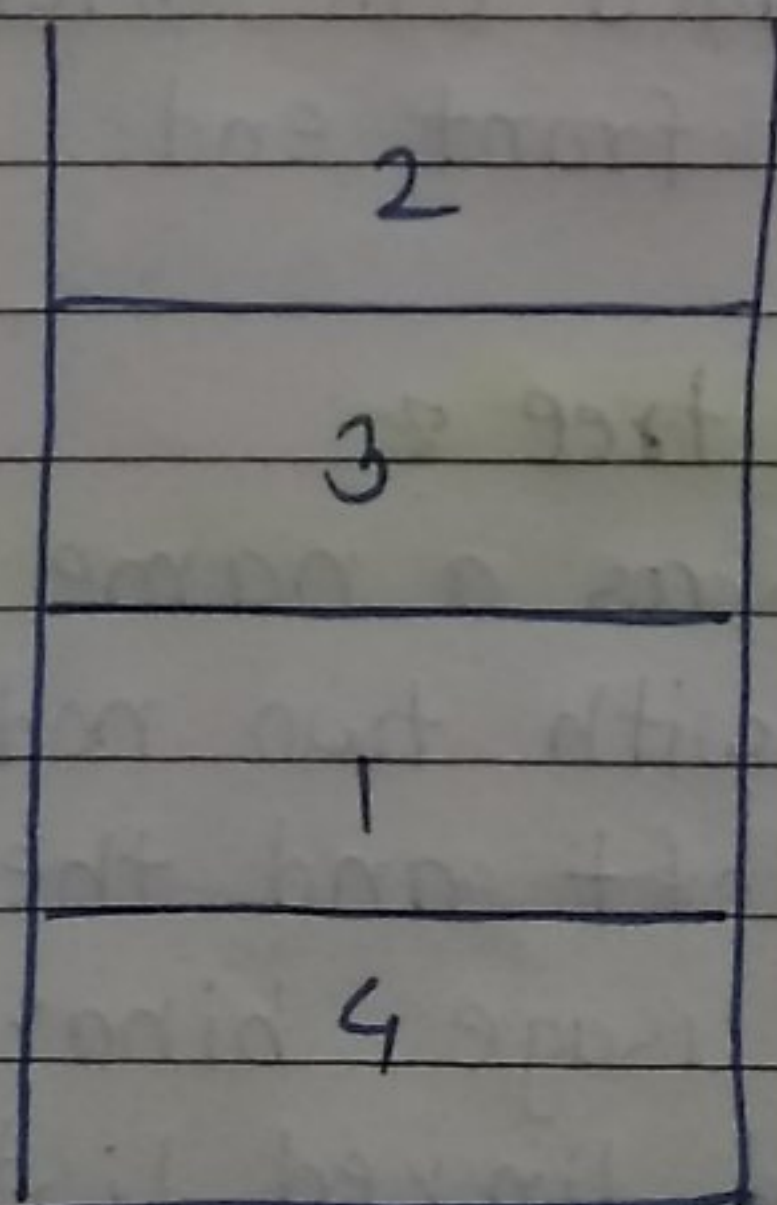


Q9) Where are Data Structure primarily used?

- i) Numerical operation
- ii) Operating System design
- iii) Artificial intelligence
- iv) Compiler design
- v) Database handling
- vi) Graphical processing
- vii) Lexical analysis
- viii) Statistics

Q10) What is the meaning of stack?

A stack is another widely used data structure that provides users with the ability to work with data at one point only. As the name suggest this can literally corresponds to working of a stack of cards.



Stack



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