9th Dec

Interview Preparation

Lecture: 1- Arrays & Strings

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What is the course content?

- Data Structures
- Important Algorithms
- OOPS Concepts
- Operating Systems important concepts
- Databases important concepts
- Tests

What are the steps to solve a problem?

Lets warm up a little

- Write code to print the following pattern

1

2 3

4 5 6

7 8 9 10

- Find sum of digits of an integer

Lets warm up a little

- Write code to print the following pattern

```
    1
   232
  34543
 4567654
567898765
```

- Convert a decimal number to binary
- Write code to find #numbers greater than input using the same digits

Time Complexity

Amount of time taken by the algorithm to run as a function of the input size

Analysis of few popular algorithms

1. Bubble sort
2. Merge sort
3. Binary Search
4. Polynomial evaluation

Arrays & Strings

- Declare
- Initialize
- Access
- update

Problems

- Write a function that receives an array with duplicates and returns a new array keeping the original order of the elements but with the duplicates removed.
- Find the duplicate number in an array of size n with numbers from 0 to n-2. Each number is present atleast once.
- Given two strings check if they are permutations of each other
- Find an element in 2D sorted array.

Problems

- Find pairs and triplets of elements in an array which sum to zero
- Given a 2D chess board check if the queens are safe

Problems

- Given two arrays return their intersection and union
- Given a input number in array form. Push all the zeroes to the end maintaining the order of rest of elements.
- Write code to do basic string compression. aaabbccds -> a3b2c2ds
- Merge two sorted arrays. Assume that array1 has enough space to keep the combined array.

Thank you

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