100 Array and String Interview Questions

- What is an array?

- How is memory allocated for arrays?

- What are the advantages of arrays?

- What are the limitations of arrays?

- What is the difference between a static array and a dynamic array?

- What is a multidimensional array?

- How is a 2D array stored in memory?

- What is a jagged array?

- What are some common operations on arrays?

- What is array traversal?

- How is insertion done in an array?

- How is deletion done in an array?

- What is array resizing?

- What is the difference between shallow copy and deep copy in arrays?

- What is array rotation?

- What is the time complexity of searching in an array?

- What is linear search?

- What is binary search?

- What is the prerequisite for binary search?

- What is an associative array?

- What is a sparse array?

- How are arrays used in real-life applications?

- How do you reverse an array?

- What is the sliding window technique?

- What is a prefix sum array?

- What is a difference array?

- What are dynamic arrays like ArrayList or Vector?

- What are the drawbacks of ArrayList?

- How does vector growth work internally?

- What is the amortized time complexity of dynamic array resizing?

- What is a string in programming?

- How are strings stored in memory?

- What is string immutability?

- What is the difference between character array and string?

- What is string concatenation?

- What are common string operations?

- What is substring operation?

- What is string comparison?

- What is lexicographical order?

- What is the time complexity of string concatenation?

- What is a palindrome?

- What is an anagram?

- What is the sliding window technique in strings?

- What is the KMP algorithm used for?

- What is the Rabin-Karp algorithm used for?

- What is the Z-algorithm in strings?

- What is a trie?

- What are the advantages of using a trie?

- What is the difference between Trie and HashMap?

- What are escape characters in strings?

- What is string interning?

- What is a string builder and when to use it?

- What is the difference between StringBuilder and StringBuffer?

- What are Unicode and ASCII?

- What are mutable and immutable strings?

- What are regular expressions in string processing?

- What is pattern matching in strings?

- How to count vowels and consonants in a string?

- How to find duplicate characters in a string?

- How to check if two strings are rotations of each other?

- How to remove all whitespaces from a string?

- How to find the longest common prefix in a string array?

- How to check if a string is a valid palindrome (ignoring non-alphanumerics)?

- How to check if a string contains only digits?

- How to check if a string contains a substring?

- What is string tokenization?

- What is a character array vs string array?

- What is the longest common subsequence?

- What is the longest common substring?

- What is edit distance between strings?

- What is string compression?

- How to implement strstr() function?

- What is string hashing?

- What is rolling hash?

- How to reverse words in a string?

- How to implement atoi() function?

- How to convert a string to an integer?

- How to convert an integer to a string?

- How to check if a string is numeric?

- What is the difference between length() and size() for strings?

- What is null-terminated string?

- What is string padding?

- What is a delimiter in strings?

- What is a regular expression and how is it used with strings?

- What is a run-length encoded string?

- What is the use of split() and join() functions?

- What is the difference between trim() and strip()?

- What is the difference between equals() and == in Java strings?

- What are immutable objects?

- What is Unicode normalization?

- What are grapheme clusters in Unicode strings?

- What is substring search using suffix arrays?

- How to check if a string has all unique characters?

- What is the Boyer-Moore string search algorithm?

- What is string reversal using recursion?

- What is the longest palindromic substring problem?

- What is the difference between a buffer and a string?

- How are strings managed in memory in different languages?

- What is memory leak in strings?

- How to handle large strings efficiently?