

STRINGS & ARRAYS



Relationship

- ▶ An array is a sequential collection of elements of similar data types while a string is a sequence of characters
- ▶ Arrays can hold elements of any data type while strings contain only characters
- ▶ String is an array of characters.
- ▶ Strings are immutable but arrays are mutable.

NEPCODEX

N	E	P	C	O	D	E	X
0	1	2	3	4	5	6	7

An Array of Characters

Fast Facts

Strings

- ▶ Cost of Modification
- ▶ Comparison
- ▶ How to convert string to array and vice versa

Arrays

- ▶ Static and dynamic arrays
- ▶ Multidimensional arrays

Common Operations

- ▶ Accessing the *i*th element
- ▶ Finding the index of an element
- ▶ Iterating with or without index
- ▶ Getting the length
- ▶ Getting the sub (string or array)
- ▶ Splitting or slicing
- ▶ Checking if it contains an element

Common Patterns

- ▶ Using a HashMap or Length-256 Integer Array
- ▶ Using two pointers
 - ▷ compare or swap
 - ▷ in-place
- ▶ Sliding window
 - ▷ sub

Common Mistakes

- ▶ Not knowing the string or array operations available in your language
- ▶ Time complexity of an operation
- ▶ Modifying strings

Resources

<https://www.crackingthecodinginterview.com/> Arrays and Strings

<https://leetcode.com/explore/learn/card/array-and-string/>

<https://www.byte-by-byte.com/strings/>

Practice Questions

Beginner:

<https://leetcode.com/problems/reverse-string/>

<https://leetcode.com/problems/plus-one/>

Intermediate:

<https://leetcode.com/problems/string-compression/>

<https://leetcode.com/problems/container-with-most-water/>

Problem Solving Process

- ▶ Repeat the problem back to the interviewer
- ▶ Ask clarifying questions
- ▶ Draw out your own examples
- ▶ Brute Force Solution
- ▶ Optimize
- ▶ Implement
- ▶ Test

state the
complexity



Feedback

<https://bit.ly/algo-and-DS-feedback>

