

Top 10 Patterns for **Solving a Coding Question** in an **Interview**

Coding Pattern # 1

If the given input is a **sorted array** or a list, we will either be using **Binray Search** or the **Two Pointers** strategy.

Coding Pattern # 2

If we are dealing with
top/maximum/minimum/closest
'K' element among 'n' element, we
will be using a **Heap**.

Coding Pattern # 3

If we need to try all **combinations** (or permutations) of the input, we can either use **Backtracking** or **Breadth First Search**.

Coding Pattern # 4

Most of the questions related to **Trees** or **Graphs** can be solved either through **Breadth First Search** or **Depth First Search**.

Coding Pattern # 5

Every **recursive** solution can be converted to an **iterative** solution using a **Stack**.

Coding Pattern # 6

For a problem involving arrays, if there exists a solution in **$O(n^2)$ time** and **$O(1)$ space**, there must exist two other solutions: 1) Using a **HashMap** or a **Set** for $O(n)$ time and $O(n)$ space, 2) Using **sorting** for $O(n \log n)$ time and $O(1)$ space.

Coding Pattern # 7

If a problem is asking for **optimization** (e.g., maximization or minimization), we will be using **Dynamic Programming**.

Coding Pattern # 8

If we need to find some common **substring** among a set of strings, we will be using a **HashMap** or a **Trie**.

Coding Pattern # 9

If we need to **search/manipulate** a bunch of strings, **Trie** will be the best data structure.

Coding Pattern # 10

If the problem is related to a **LinkedList** and we can't use extra space, then use the **Fast & Slow Pointer** approach.

➡ Follow these techniques to distinguish yourself from others! A number of these approaches are discussed in "**Grokking the Coding Interview**" from DesignGurus.org