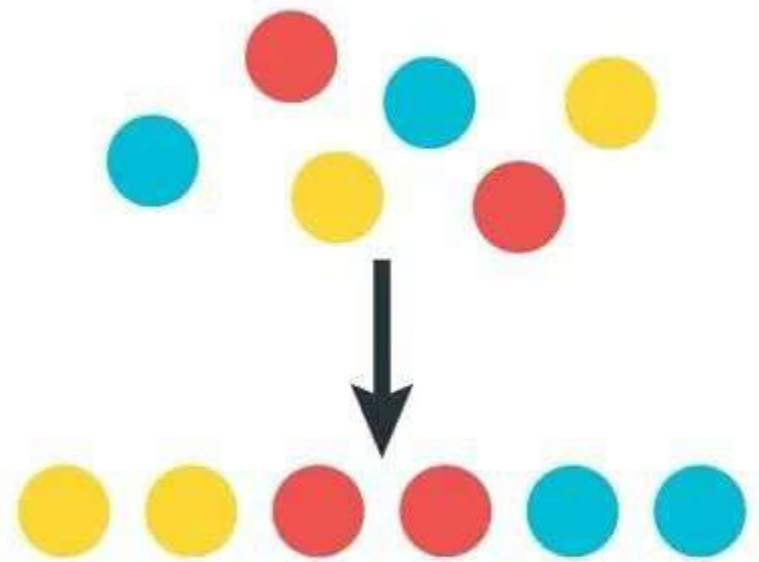


TOP 6 ALGORITHM EVERY PROGRAMMER SHOULD KNOW

Sorting Algorithms

- ★ Bubble Sort
- ★ Merge Sort
- ★ Quick Sort
- ★ Heap Sort



Searching Algorithm

★ Linear Search


★ Binary Search

★ BFS (Breadth First Search)

★ DFS (Depth First Search)

Searched Element

39



13	9	21	15	39	19	27
0	1	2	3	4	5	6

Recursion Algorithm

Recursion is a problem-solving technique in which the solution is dependent on solutions to smaller instances of the same problem

For user input : 5

Factorial Recursion Function

$$n * f(n-1)$$

Final Result

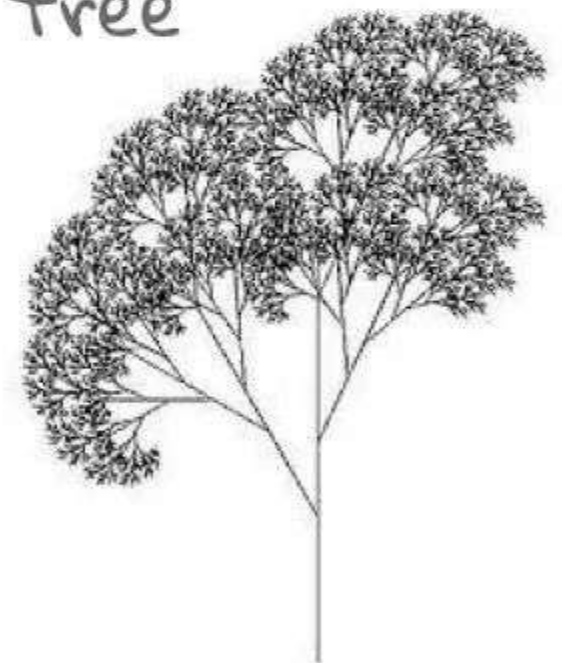
$$5 * f(4) = 5 * 24 = 120$$

$$4 * f(3) = 4 * 6 = 24$$

$$3 * f(2) = 3 * 2 = 6$$

$$2 * f(1) = 2 * 1 = 2$$

its like branches
of a tree



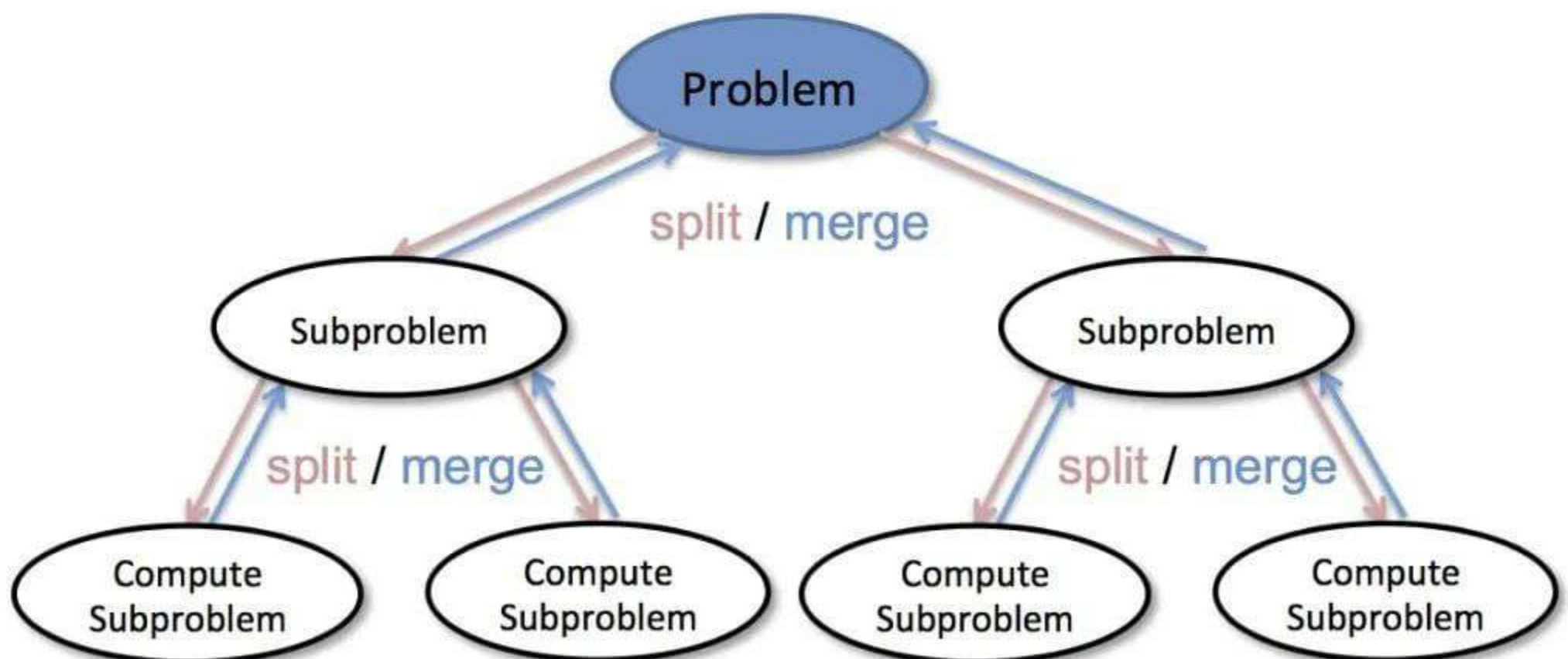
a function calls
itself within its
own code

Divide and Conquer

Divide - Original Problem is Divided into Sub Problems

Conquer - Solve each sub-problem one at a time, recursively

Combine - Put the solutions to the sub-problems together to get the solution to the whole problem



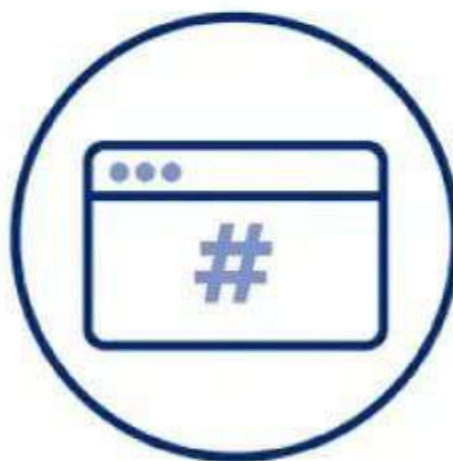
Hashing Algorithms

Hashing is a technique or process that uses a hash function to map keys and values into a hash table

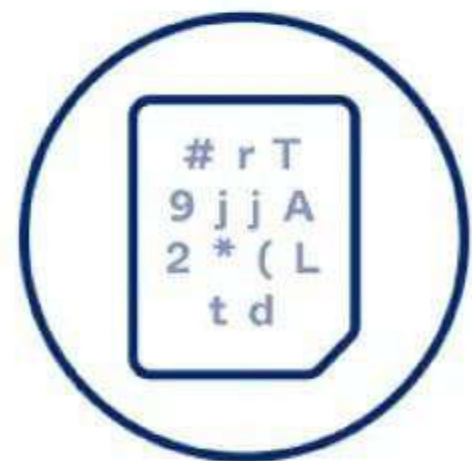
How Hashing Algorithms Work



Plain text string



Hashing algorithm



Hashed text

Dynamic Programming

Dynamic programming is nothing but recursion with memoization

calculating and storing values that can be later accessed to solve subproblems that occur again

