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Frequently Asked Questions

1. **Merge Intervals**
   Merge all overlapping intervals in a list.

   Given a string, find the length of the longest substring without repeating characters.
   (— asked in Google, Amazon, Microsoft)

2. **Two Sum**
   Return indices of two numbers that add up to a target.

   You may assume that each input would have ***exactly* one solution**, and you may not use the *same* element twice. You can return in any order

3. **Valid Parentheses**
   Determine if a string of parentheses/brackets is valid.
   (— common at Amazon, Meta)

4. **Top K Frequent Elements**
   Find the k most frequent elements in an array.

5. **Product of Array Except Self**
   Return an array where each element is the product of all other elements.
   (write an algorithm that runs in O(n) time and without using the division operation— frequent FAANG question)

6. **Binary Tree Level Order Traversal**
   Traverse a binary tree level by level (BFS).

7. **Wildcard String Match**
   Check if two strings match where one contains wildcard characters (*, ?).

8. **Maximum Subarray Sum (Kadane's Algorithm)**
   Find the contiguous subarray with the largest sum.
   (Asked in almost every DSA round)

9. **Check if a Number is a Perfect Square**
   Determine if a number is a perfect square without using sqrt().

10. **Queue Implementation using collections.deque**
    Implement a queue with enqueue, dequeue, peek, and empty operations.