

Important String Patterns (High-Frequency)

1. Two Pointers

Where to use: Palindrome checks, reverse operations, compare from both ends, skip/remove characters.

#	Question	Link	Company tags
1	Valid Palindrome	https://leetcode.com/problems/valid-palindrome/	Amazon, Microsoft, Google
2	Valid Palindrome II	https://leetcode.com/problems/valid-palindrome-ii/	Facebook, Amazon
3	Reverse Words in a String	https://leetcode.com/problems/reverse-words-in-a-string/	Google, Microsoft
4	Merge Strings Alternately	https://leetcode.com/problems/merge-strings-alternately/	Amazon, Adobe

2. Sliding Window (Fixed + Variable)

Where to use: Longest/shortest substring under constraints (unique chars, k distinct, anagram window, min window).

#	Question	Link	Company tags
1	Longest Substring Without Repeating Characters	https://leetcode.com/problems/longest-substring-without-repeating-characters/	Amazon, Google, Microsoft
2	Minimum Window Substring	https://leetcode.com/problems/minimum-window-substring/	Facebook, Google, Amazon
3	Find All Anagrams in a String	https://leetcode.com/problems/find-all-anagrams-in-a-string/	Amazon, Microsoft
4	Longest Repeating Character Replacement	https://leetcode.com/problems/longest-repeating-character-replacement/	Facebook, Amazon

3. Frequency Count (HashMap / 26 Array)

Where to use: Counting characters, anagrams, duplicates, and comparing two strings quickly.

#	Question	Link	Company tags
1	Valid Anagram	https://leetcode.com/problems/valid-anagram/	Amazon, Google
2	Group Anagrams	https://leetcode.com/problems/group-anagrams/	Amazon, Facebook, Google

3	First Unique Character in a String	https://leetcode.com/problems/first-unique-character-in-a-string/	Microsoft, Amazon
4	Ransom Note	https://leetcode.com/problems/ransom-note/	Facebook, Amazon

4. Stack-Based String Processing

Where to use: Remove adjacent duplicates, parse nested patterns, validate brackets/parentheses.

#	Question	Link	Company tags
1	Valid Parentheses	https://leetcode.com/problems/valid-parentheses/	Amazon, Google
2	Remove All Adjacent Duplicates In String	https://leetcode.com/problems/remove-all-adjacent-duplicates-in-string/	Facebook, Google
3	Decode String	https://leetcode.com/problems/decode-string/	Amazon, Microsoft
4	Remove Duplicate Letters	https://leetcode.com/problems/remove-duplicate-letters/	Google, Facebook

5. Palindrome Expansion (Center Expansion)

Where to use: Longest palindromic substring, count palindromes, palindrome partitioning base.

#	Question	Link	Company tags
1	Longest Palindromic Substring	https://leetcode.com/problems/longest-palindromic-substring/	Amazon, Microsoft
2	Palindromic Substrings	https://leetcode.com/problems/palindromic-substrings/	Google, Amazon
3	Palindrome Partitioning	https://leetcode.com/problems/palindrome-partitioning/	Facebook, Amazon
4	Palindrome Partitioning II	https://leetcode.com/problems/palindrome-partitioning-ii/	Amazon, Facebook

6. Greedy + Lexicographic Build

Where to use: Build smallest/largest string under constraints, remove minimal chars for optimal order.

#	Question	Link	Company tags
1	Remove Duplicate Letters	https://leetcode.com/problems/remove-duplicate-letters/	Google, Facebook
2	Partition Labels	https://leetcode.com/problems/partition-labels/	Amazon, Facebook

3	Remove K Digits	https://leetcode.com/problems/remove-k-digits/	Google, Amazon
4	Minimum Add to Make Parentheses Valid	https://leetcode.com/problems/minimum-add-to-make-parentheses-valid/	Amazon, Microsoft

7. Backtracking on Strings

Where to use: Generate all partitions/combinations (IP, parentheses, string splits).

#	Question	Link	Company tags
1	Generate Parentheses	https://leetcode.com/problems/generate-parentheses/	Google, Amazon
2	Letter Combinations of a Phone Number	https://leetcode.com/problems/letter-combinations-of-a-phone-number/	Facebook, Amazon
3	Restore IP Addresses	https://leetcode.com/problems/restore-ip-addresses/	Google, Amazon
4	Palindrome Partitioning	https://leetcode.com/problems/palindrome-partitioning/	Amazon, Facebook

8. Trie (Prefix Tree)

Where to use: Prefix queries, word dictionary operations, multi-word matching.

#	Question	Link	Company tags
1	Implement Trie (Prefix Tree)	https://leetcode.com/problems/implement-trie-prefix-tree/	Google, Amazon
2	Word Search II	https://leetcode.com/problems/word-search-ii/	Amazon, Microsoft
3	Replace Words	https://leetcode.com/problems/replace-words/	Google, Amazon
4	Longest Word in Dictionary	https://leetcode.com/problems/longest-word-in-dictionary/	Amazon, Facebook

9. DP on Strings

Where to use: Subsequence / transformation problems (LCS, edit distance), segmentation (word break).

#	Question	Link	Company tags
1	Word Break	https://leetcode.com/problems/word-break/	Amazon, Google
2	Edit Distance	https://leetcode.com/problems/edit-distance/	Google, Facebook

3	Longest Common Subsequence	https://leetcode.com/problems/longest-common-subsequence/	Amazon, Microsoft
4	Distinct Subsequences	https://leetcode.com/problems/distinct-subsequences/	Google, Amazon

10. String Parsing / Simulation

Where to use: Conversions, tokenization, version compare, numeric validation, expression parsing.

#	Question	Link	Company tags
1	String to Integer (atoi)	https://leetcode.com/problems/string-to-integer-atoi/	Amazon, Microsoft
2	Compare Version Numbers	https://leetcode.com/problems/compare-version-numbers/	Google, Amazon
3	Valid Number	https://leetcode.com/problems/valid-number/	Facebook, Google
4	Basic Calculator II	https://leetcode.com/problems/basic-calculator-ii/	Amazon, Microsoft

11. KMP / Prefix Function (High ROI)

Where to use: Fast pattern matching; prefix-suffix repetition; repeated substring structure.

#	Question	Link	Company tags
1	Find the Index of the First Occurrence in a String	https://leetcode.com/problems/find-the-index-of-the-first-occurrence-in-a-string/	Amazon, Microsoft, Google
2	Repeated Substring Pattern	https://leetcode.com/problems/repeated-substring-pattern/	Google, Amazon
3	Shortest Palindrome	https://leetcode.com/problems/shortest-palindrome/	Amazon, Facebook
4	Longest Happy Prefix	https://leetcode.com/problems/longest-happy-prefix/	Google, Facebook

12. Rolling Hash (Rabin–Karp)

Where to use: Duplicate substring detection, quick substring equality checks.

#	Question	Link	Company tags
1	Repeated DNA Sequences	https://leetcode.com/problems/repeated-dna-sequences/	Amazon, Google
2	Longest Duplicate Substring	https://leetcode.com/problems/longest-duplicate-substring/	Google, Facebook

3	Substrings of Size Three with Distinct Characters	https://leetcode.com/problems/substrings-of-size-three-with-distinct-characters/	Amazon
4	Longest Happy Prefix (hash approach)	https://leetcode.com/problems/longest-happy-prefix/	Google, Amazon