String Problems

1. Reverse a String
2. Check if a String is Palindrome
3. Count Vowels and Consonants
4. Remove Duplicate Characters
5. Find the First Non-Repeating Character
6. Count the Number of Words in a String
7. Find the Longest Word in a String
8. Convert String to Title Case
9. Replace All Occurrences of a Substring
10. Check if Two Strings Are Anagrams
11. Capitalize First Letter of Each Word
12. Remove All Spaces
13. Count the Frequency of Each Character
14. Find All Unique Characters
15. Swap Case of Each Character
16. Find the Most Frequent Character
17. String Compression
18. Find Substring Index
19. Split a String by Delimiter
20. Check if String Contains Only Digits
21. Repeat a String N Times
22. Interleave Two Strings
23. Remove All Non-Alphanumeric Characters
24. Find All Occurrences of a Substring
25. Reverse Words in a Sentence
26. Remove Leading and Trailing Spaces
27. Check if a String is a Substring of Another
28. Generate All Permutations of a String
29. Convert a String to Lowercase
30. Convert a String to Uppercase
31. Remove All Vowels
32. Count Specific Character in a String
33. Remove Punctuation
34. Check if a String is a Valid Email
35. Rotate a String
36. Find Common Characters in Two Strings
37. Count the Number of Digits
38. Check if a String Starts with a Given Prefix
39. Check if a String Ends with a Given Suffix
40. Remove All Digits from a String
41. Count the Number of Lines in a String
42. Get the Last N Characters of a String
43. Repeat Each Character N Times
44. Swap First and Last Characters
45. Remove Consecutive Duplicates
46. Generate a String of Random Characters
47. Count the Number of Sentences
48. Remove All Whitespace Characters
49. Check if Two Strings are Case-Insensitive Equal
50. Remove All Spaces Except Single Spaces
51. Extract Email Addresses from a String
52. Replace Each Character with its ASCII Value
53. Get the Length of Each Word in a String
54. Generate a String from a List of Words
55. Count the Number of Uppercase Letters
56. Capitalize Every Other Word
57. Convert a String to a Dictionary of Character Frequencies
58. Find the Most Common Word
59. Remove All Special Characters
60. Count the Number of Occurrences of a Word
61. Convert a String to Hexadecimal
62. Convert Hexadecimal to String
63. Capitalize the First Letter of Each Sentence
64. Sort Characters in a String
65. Find the Longest Common Prefix of a List of Strings
66. Check if a String is Numeric
67. Remove All Characters from a String Except Vowels
68. Check if a String is a Valid URL
69. Count the Number of Paragraphs
70. Find the Position of the First Digit in a String
71. Extract the File Name from a File Path
72. Count the Number of Words Starting with a Specific Letter
73. Check if a String is a Numeric Palindrome
74. Get the Last N Words from a String
75. Remove HTML Tags from a String
76. Reverse Each Word in a String
77. Find the Index of the First Non-Repeating Character
78. Check if a String is a Perfect Square
79. Count the Number of Palindromic Words
80. Get a Substring Between Two Delimiters
81. Create a String with Incrementing Numbers
82. Generate a Random Alphanumeric String
83. Convert a String to a List of Tuples (Character, Frequency)
84. Reverse the Order of Characters in Each Word

Advanced Algorithms & String Matching:

1. Rabin Karp Algorithm for Pattern Matching
2. Z-function Algorithm
3. KMP Algorithm (Knuth-Morris-Pratt) / LPS Pi Array
4. Shortest Palindrome
5. Longest Happy Prefix
6. Count Palindromic Subsequences in a String