



DATASETS TOPICS

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BASIC MATH OPERATIONS



- 1. CHECK EVEN OR ODD**
- 2. FIND FACTORIAL**
- 3. CHECK PRIME NUMBER**
- 4. FIND GREATEST OF TWO NUMBERS**
- 5. FIND SMALLEST OF THREE NUMBERS**
- 6. SQUARE OF A NUMBER**
- 7. CUBE OF A NUMBER**
- 8. SUM OF FIRST N NATURAL NUMBERS**
- 9. MULTIPLY TWO NUMBERS**
- 10. CHECK IF NUMBER IS POSITIVE, NEGATIVE, OR ZERO**

String Manipulation



11. REVERSE A STRING

12. CHECK PALINDROME STRING

13. COUNT VOWELS IN A STRING

14. COUNT CONSONANTS

15. REMOVE SPACES FROM A STRING

16. CONVERT STRING TO UPPERCASE

17. CONVERT STRING TO LOWERCASE

18. COUNT WORDS IN A SENTENCE

19. FIND LENGTH OF A STRING

20. REPLACE CHARACTER IN A STRING

list operations



21. FIND MAXIMUM ELEMENT

22. FIND MINIMUM ELEMENT

23. SUM OF ELEMENTS IN LIST

24. SORT LIST ASCENDING

25. SORT LIST DESCENDING

26. REMOVE DUPLICATES FROM LIST

27. COUNT FREQUENCY OF AN ELEMENT

28. REVERSE A LIST

29. FIND SECOND LARGEST ELEMENT

30. CHECK IF LIST IS EMPTY

31. FIND THE INDEX OF AN ELEMENT IN A LIST

32. CALCULATE THE AVERAGE OF NUMBERS IN A LIST.

loop based problems



- 33. PRINT NUMBERS FROM 1 TO N**
- 34. PRINT MULTIPLICATION TABLE**
- 35. PRINT EVEN NUMBERS IN A RANGE**
- 36. PRINT ODD NUMBERS IN A RANGE**
- 37. COUNT DIGITS IN A NUMBER**
- 38. SUM OF DIGITS**
- 39. PRODUCT OF DIGITS**
- 40. PRINT ALL CHARACTERS OF A STRING**
- 41. PRINT NUMBERS DIVISIBLE BY 3**
- 42. PRINT SQUARES OF NUMBERS**

Function-Based Tasks



43. CALCULATE THE AREA OF A CIRCLE

44. FIND THE AREA OF A RECTANGLE

45. FIND THE PERIMETER OF A RECTANGLE

46. FIND THE SQUARE ROOT OF A NUMBER

47. CALCULATE THE CIRCUMFERENCE OF A CIRCLE

48. CONVERT CELSIUS TO FAHRENHEIT

49. CONVERT FAHRENHEIT TO CELSIUS

50. CALCULATE SIMPLE INTEREST

51. CONVERT MINUTES TO HOURS AND MINUTES

Conditional Logic Problems



52. CHECK VOTER ELIGIBILITY

53. CHECK IF NUMBER DIVISIBLE BY 5 AND 11

54. GRADE SYSTEM (A, B, C, ETC.)

55. ELECTRICITY BILL CALCULATOR

56. SIMPLE CALCULATOR USING IF-ELSE

57. CHECK TRIANGLE TYPE

58. CHECK LEAP YEAR

59. CHECK IF CHARACTER IS VOWEL OR

CONSONANT

60. CHECK IF CHARACTER IS ALPHABET OR

NUMBER

61. CHECK LOGIN USERNAME/PASSWORD

Basic Algorithms



62. LINEAR SEARCH

63. BINARY SEARCH

64 BUBBLE SORT

65. SELECTION SORT

66. INSERTION SORT

67. MERGE TWO SORTED LISTS

68. FIND ALL DUPLICATES IN LIST

69. FIND INTERSECTION OF TWO LISTS

70. FIND UNION OF TWO LISTS

71. SHUFFLE LIST ELEMENTS

Dictionary Operations



72. COUNT OCCURRENCES OF CHARACTERS

73. MERGE TWO DICTIONARIES

74. CHECK IF KEY EXISTS

75. ADD KEY-VALUE PAIR

76. REMOVE KEY-VALUE PAIR

77. SORT DICTIONARY BY VALUES

78. CONVERT TWO LISTS INTO DICTIONARY

79. INVERT DICTIONARY (SWAP KEY → VALUE)

80. FREQUENCY COUNT OF WORDS

81. FIND HIGHEST VALUE IN DICTIONARY

File Handling Tasks



82. READ TEXT FILE

83. WRITE TO A FILE

84. COUNT LINES IN A FILE

85. COUNT WORDS IN A FILE

86. COUNT CHARACTERS IN A FILE

87. COPY CONTENTS OF ONE FILE TO ANOTHER

88. APPEND TEXT TO FILE

89. FIND LONGEST WORD IN A FILE

90. REMOVE BLANK LINES FROM FILE

91. CHECK IF FILE EXISTS

Miscellaneous Logic Problems



92. FIBONACCI SEQUENCE

93. ARMSTRONG NUMBER

94. STRONG NUMBER

95. PERFECT NUMBER

96. SUM OF SERIES 1 + 2 + 3...

97. FIND GCD OF TWO NUMBERS

98. FIND LCM OF TWO NUMBERS

99. CONVERT DECIMAL TO BINARY

100. CONVERT BINARY TO DECIMAL

101. RANDOM NUMBER GUESSING GAME