

# 100 Common Algorithms for Competitive Job Exams

## Basic Number Algorithms (Easy)

1. Reverse a Number
2. Check Even or Odd
3. Find Largest of Three Numbers
4. Swap Two Numbers
5. Sum of Digits of a Number
6. Count Digits in a Number
7. Check Positive or Negative
8. Check if Number is Prime
9. Find Prime Numbers in a Range
10. Check Armstrong Number
11. Check Perfect Number
12. Check Palindrome Number
13. Sum of First N Natural Numbers
14. Sum of Even/Odd Numbers
15. Factorial of a Number (using loop)
16. Find Factors of a Number
17. Find GCD of Two Numbers
18. Find LCM of Two Numbers
19. Power of a Number (using loop)
20. Print N Prime Numbers

## Intermediate Number Problems

1. Armstrong Numbers in a Range
2. Perfect Numbers in a Range
3. Palindrome Numbers in a Range
4. Convert Decimal to Binary
5. Convert Binary to Decimal
6. Count Prime Digits
7. Find First and Last Digit
8. Remove Last Digit
9. Find Middle Digit
10. Replace a Digit
11. Check Automorphic Number
12. Check Strong Number
13. Sum of Series ( $1 + 2 + 3 \dots$ )
14. Print All Divisors of a Number
15. Check Harshad (Niven) Number
16. Check Magic Number
17. Find HCF using Euclidean Algorithm
18. Reverse Bits of a Number
19. Sum of Alternate Digits
20. Count Even and Odd Digits

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## Loop and Logic-Based Programs

1. Multiplication Table
2. Fibonacci Series (Iterative)
3. Fibonacci Series (Recursive)
4. Count Frequency of a Digit
5. Print Digits in Reverse Order
6. Sum of Series ( $1 + 1/2 + 1/3...$ )
7. Calculate Power (using loop)
8. Check Number is Power of 2
9. Count Number of Set Bits
10. Generate a Random Number

## Pattern Programs

1. Star Pattern - Right Triangle
2. Star Pattern - Inverted Triangle
3. Number Pyramid
4. Floyds Triangle
5. Pascals Triangle
6. Diamond Star Pattern
7. Hollow Square Pattern
8. Zigzag Pattern
9. Left-Right Aligned Number Triangle
10. Butterfly Pattern

## Math & Conversion

1. Square Root of a Number
2. Cube Root of a Number
3. Round-off a Floating Number
4. Calculate Area of Circle
5. Calculate Area of Triangle
6. Convert Celsius to Fahrenheit
7. Convert Fahrenheit to Celsius
8. Convert Minutes to Hours
9. Convert Time to Seconds
10. Calculate Simple Interest

## Searching Algorithms

1. Linear Search
2. Binary Search (Iterative)
3. Binary Search (Recursive)
4. Ternary Search
5. Jump Search

## Sorting Algorithms

1. Bubble Sort

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2. Selection Sort
3. Insertion Sort
4. Merge Sort
5. Quick Sort
6. Counting Sort
7. Radix Sort
8. Heap Sort

### **Dynamic Programming (Easy to Medium)**

1. Fibonacci using DP
2. Factorial using Memoization
3. Longest Common Subsequence
4. Longest Increasing Subsequence
5. 0/1 Knapsack Problem
6. Coin Change Problem
7. Subset Sum Problem

### **Graph Algorithms**

1. BFS (Breadth First Search)
2. DFS (Depth First Search)
3. Dijkstras Algorithm
4. Topological Sort
5. Union-Find (Disjoint Set Union)

### **Divide and Conquer**

1. Merge Sort (repeat)
2. Quick Sort (repeat)
3. Closest Pair of Points
4. Binary Search (repeat)
5. Strassen Matrix Multiplication