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Top 100 Codes

PrepInsta Top 100 Codes

Below You will find some of the most important codes in languages like C, C++ and Java. These codes are of prime importance for college semester exams and also for various online tests and interviews of the companies offering placements within varying range in LPA.

These codes are very important since these will help you clear your basic concepts in various languages.
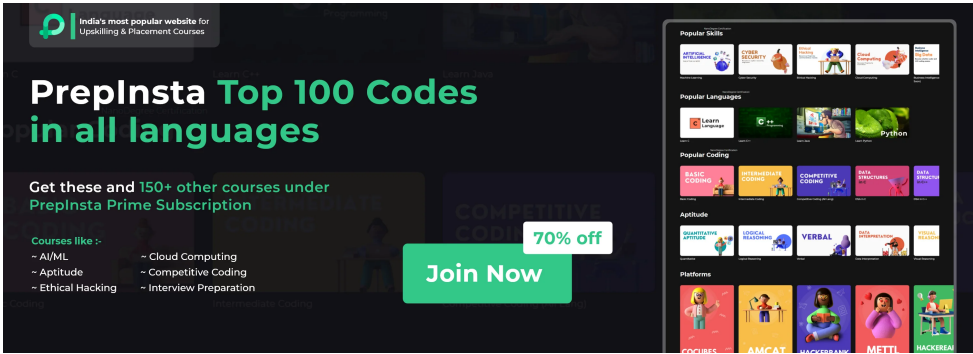
Getting Started

- ASCII Table
- **Positive or Negative number:**   C | C++ | Java | Python
- **Even or Odd number:**   C | C++ | Java | Python
- **Sum of First N Natural numbers:**   C | C++ | Java | Python
- **Sum of N natural numbers:**   C | C++ | Java | Python
- **Sum of numbers in a given range:**   C | C++ | Java | Python
- **Greatest of two numbers:**   C | C++ | Java | Python
- **Greatest of the Three numbers:**   C | C++ | Java | Python
- **Leap year or not:**   C | C++ | Java | Python
- **Prime number:**   C | C++ | Java | Python
- **Prime number within a given range:**   C | C++ | Java | Python
- **Sum of digits of a number:**   C | C++ | Java | Python
- **Reverse of a number :**   C | C++ | Java | Python
- **Palindrome number:**   C | C++ | Java | Python

- **Armstrong number in a given range :**   C | C++ | Java | Python
- **Fibonacci Series upto *nth* term :**   C | C++ | Java | Python
- **Find the *Nth* Term of the Fibonacci Series :**   C | C++ | Java |
     Python
- **Factorial of a number :**   C | C++ | Java | Python
- **Power of a number :**   C | C++ | Java | Python
- **Factor of a number :**   C | C++ | Java | Python
- **Finding Prime Factors of a number :**   C | C++ | Java | Python
- **Strong number :**   C | C++ | Java | Python
- **Perfect number :**   C | C++ | Java | Python
- **Perfect Square :**   C | C++ | Java | Python
- **Automorphic number :**   C | C++ | Java | Python
- **Harshad number :**   C | C++ | Java | Python
- **Abundant number :**   C | C++ | Java | Python
- **Friendly pair :**   C | C++ | Java | Python
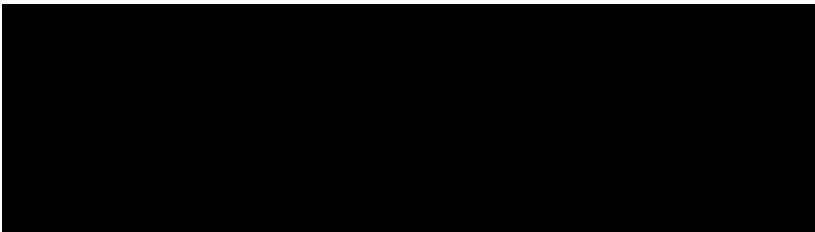
Working with Numbers

- **Highest Common Factor(HCF):**   C | C++ | Java | Python
- **Lowest Common Multiple (LCM) :**   C | C++ | Java | Python
- **Greatest Common Divisor :**   C | C++ | Java | Python
- **Binary to Decimal to conversion :**   C | C++ | Java | Python
- **Octal to Decimal conversion :**   C | C++ | Java | Python
- **Hexadecimal to Decimal conversion:**   C | C++ | Java | Python
- **Decimal to Binary conversion:**   C | C++ | Java | Python
- **Decimal to Octal Conversion:**   C | C++ | Java | Python
- **Decimal to Hexadecimal Conversion:**   C | C++ | Java | Python
- **Binary to Octal conversion :**   C | C++ | Java | Python
- **Octal to Binary conversion :**   C | C++ | Java | Python
- **Quadrants in which a given coordinate lies :**   C | C++ | Java |
     Python
- **Permutations in which n people can occupy r seats in a classroom :**   C |
     C++ | Java | Python
- **Maximum number of handshakes:**   C | C++ | Java | Python

- **Replace all 0's with 1 in a given integer :**   C | C++ | Java | Python
- **Can a number be expressed as a sum of two prime numbers :**   C | C++ | Java | Python
- **Count possible decoding of a given digit sequence :**   C | C++ | Java | Python
- **Calculate the area of a circle :**   C | C++ | Java | Python
- **Find the prime numbers between 1 to 100 :**   C | C++ | Java | Python
- **Calculate the number of digits in an integer :**   C | C++ | Java | Python
- **Convert digit/number to words :**   C | C++ | Java | Python
- **Counting number of days in a given month of a year:**   C | C++ | Java | Python
- **Finding Number of times x digit occurs in a given input :**   C | C++ | Java | Python
- **Finding number of integers which has exactly x divisors:**   C | C++ | Java | Python
- **Finding Roots of a quadratic equation :**   C | C++ | Java | Python

Codes for Recursion

- **Power of a Number** –   C | C++ | Java | Python
- **Prime Number** –   C | C++ | Java | Python
- **Largest element in an array** –   C | C++ | Java | Python
- **Smallest element in an array** –   C | C++ | Java | Python
- **Reversing a Number** –   C | C++ | Java | Python
- **HCF of two numbers** –   C | C++ | Java | Python
- **LCM of two numbers** –   C | C++ | Java | Python
- **Program to calculate length of the string using recursion-**   C | C++ | Java | Python
- **Print All Permutations of a String- C** | C++ | Java | **Python**

- **Given an integer N the task is to print the F(N)th term.-**   C | C++ | Java | **Python**
- **Given a list arr of N integers, print sums of all subsets in it-**   C | C++ | Java | **Python**
- **Last non-zero digit in factorial-**   C | C++ | Java | **Python**
- **Given a positive integer N, return the Nth row of pascal's triangle –**   C | C++ | Java | Python
- **Given an integer N representing the number of pairs of parentheses, the task is to generate all combinations of well-formed(balanced) parentheses –**   C | C++ | Java | Python
- **Find the Factorial of a number using recursion –**   C | C++ | Java | Python
- **Find all possible Palindromic partitions of the given String – C** | C++ | Java | Python
- **Find all the N bit binary numbers having more than or equal 1's than 0's – C** | C++ | Java | Python
- **Given a set of positive integers, find all its subsets – C** | C++ | Java | Python
- **Given a string s, remove all its adjacent duplicate characters recursively – C** | C++ | Java | Python
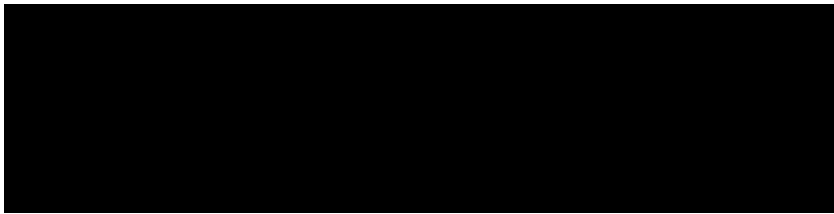
Important Codes related to Arrays

- **Find Largest element in an array :**   C | C++ | Java | Python
- **Find Smallest Element in an Array :**   C | C++ | Java | Python
- **Find the Smallest and largest element in an array :**   C | C++ | Java | Python
- **Find Second Smallest Element in an Array :**   C | C++ | Java | Python
- **Calculate the sum of elements in an array :**   C | C++ | Java | Python
- **Reverse an Array :**   C | C++ | Java | Python
- **Sort first half in ascending order and second half in descending :**   C | C++

- **Finding the frequency of elements in an array :**   C | C++ | Java | Python

- **Sorting elements of an array by frequency :**   C | C++ | Java | Python

- **Finding the Longest Palindrome in an Array :**   C | C++ | Java | Python

- **Counting Distinct Elements in an Array :**   C | C++ | Java | Python

- **Finding Repeating elements in an Array :**   C | C++ | Java | Python

- **Finding Non Repeating elements in an Array :**   C | C++ | Java | Python

- **Removing Duplicate elements from an array :**   C | C++ | Java | Python

- **Finding Minimum scalar product of two vectors :**   C | C++ | Java | Python

- **Finding Maximum scalar product of two vectors in an array :**   C | C++ | Java | Python

- **Counting the number of even and odd elements in an array :**   C | C++ | Java | Python

- **Find all Symmetric pairs in an array :**   C | C++ | Java | Python

- **Find maximum product sub-array in a given array :**   C | C++ | Java | Python

- **Finding Arrays are disjoint or not :**   C | C++ | Java | Python

- **Determine Array is a subset of another array or not :**   C | C++ | Java | Python

- **Determine can all numbers of an array be made equal :**   C | C++ | Java | Python

- **Finding Minimum sum of absolute difference of given array :**   C | C++ | Java | Python

- **Sort an array according to the order defined by another array :**   C | C++ | Java | Python

- **Replace each element of the array by its rank in the array :**   C | C++ | Java | Python

- **Finding equilibrium index of an array :**   C | C++ | Java | Python

- **Rotation of elements of array- left and right :**   C | C++ | Java | Python

- **Block swap algorithm for array rotation :**   C | C++ | Java | Python

- **Juggling algorithm for array rotation :**   C | C++ | Java | Python

- **Finding Circular rotation of an array by K positions :**   C | C++ | Java | Python

- **Balanced Parenthesis Problem :**   C | C++ | Java | Python

Operations on Strings

- **Check whether a character is a vowel or consonant :**   C | C++ | Java | Python

- **Check whether a character is a alphabet or not :**   C | C++ | Java | Python

- **Find the ASCII value of a character :**   C | C++ | Java | Python

- **Length of the string without using strlen() function :**   C | C++ | Java | Python

- **Toggle each character in a string :**   C | C++ | Java | Python

- **Count the number of vowels :**   C | C++ | Java | Python

- **Remove the vowels from a String :**   C | C++ | Java | Python

- **Check if the given string is Palindrome or not :**   C | C++ | Java | Python

- **Print the given string in reverse order :**   C | C++ | Java | Python

- **Remove all characters from string except alphabets :**   C | C++ | Java | Python

- **Remove spaces from a string :**   C | C++ | Java | Python

- **Remove brackets from an algebraic expression :**   C | C++ | Java | Python

- **Count the sum of numbers in a string :**   C | C++ | Java | Python

- **Capitalize the first and last character of each word of a string :**   C | C++ | Java | Python

- **Calculate frequency of characters in a string :**   C | C++ | Java | Python

- **Find non-repeating characters in a string :**   C | C++ | JAVA | Python

- **Check if two strings are Anagram or not :**   C | C++ | Java | Python

- **Replace a sub-string in a string:**   C | C++ | Java | Python

- **Replacing a particular word with another word in a string –**   C | C++ | Java | **Python**

- **Count common sub-sequence in two strings :**   C | C++ | **Java** | Python

- **Check if two strings match where one string contains wildcard characters :**   C | C++ | **Java** | Python
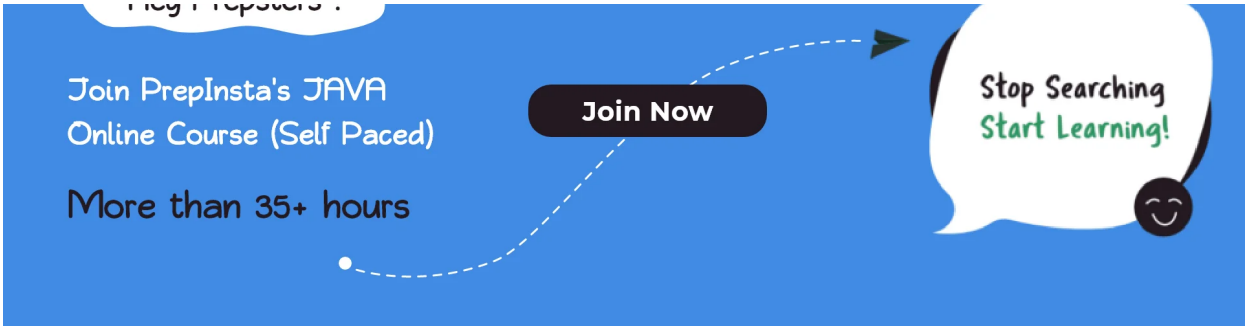
Advanced Codes related to Arrays

- Given an array which consists of only 0, 1 and 2. Sort the array without using any algorithm –
  C | C++ | Java | Python
- Find the "Kth" max and min element of an array – C | C++ | Java | Python
- Move all the negative elements to one side of the array – C | C++ | Java |
  Python
- Find the Union and Intersection of the two sorted arrays. – C | C++ | Java |
  Python
- Find Largest sum contiguous Subarray – C | C++ | Java | Python
- Minimize the maximum difference between heights – C | C++ | Java |
  Python
- Minimum no. of Jumps to reach the end of an array – C | C++ | Java |
  Python
- Find duplicate in an array of N+1 Integers – C | C++ | Java | Python
- Merge 2 sorted arrays without using extra space. – C | C++ | Java | Python
- Kadane's Algorithm – C | C++ | Java | Python
- Merge Intervals – C | C++ | Java | Python
- Count Inversion – C | C++ | Java | Python
- Best time to buy and Sell stock – C | C++ | Java | **Python**
- Find all pairs on integer array whose sum is equal to given number – C | C++ |
  Java | Python
- Find if there is any subarray with sum equal to 0 – C | C++ | Java |
  Python
- Find factorial of a Large Number – C | C++ | Java | Python
- Find common elements In 3 sorted arrays – C | C++ | Java | Python
- Rearrange the array in alternating positive and negative items with O(1) extra space – C |
  C++ | Java | Python
- Given an array of size n and a number k, find all elements that appear more than " n/k " times.
  – C | C++ | Java | Python
- Maximum profit by buying and selling a share atmost twice – C | C++ | Java |
  Python

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- **Trapping Rain water problem** – 	C	|	C++	|	Java	|	Python
- **Chocolate Distribution problem – C** |	C++	|	Java	|	Python
- **Smallest Subarray with sum greater than a given value** – 	C	|	C++	|	Java	|
	Python
- **Three way partitioning of an array around a given value** – 	C	|	C++	|	Java	|
	Python
- **Minimum no. of operations required to make an array palindrome** – 	C	|	C++	|
	Java	|	Python
- **Median of 2 sorted arrays of equal size** – 	C	|	C++	|	Java	|	Python
- **Median of 2 sorted arrays of different size** – 	C	|	C++	|	Java	|	Python

Codes related to Matrix

- **Spiral traversal on a Matrix** – 	C	|	C++	|	Java	|**Python**
- **Search an element in a matrix** – 	C	|	C++	|	Java	|	Python
- **Find median in a row wise sorted matrix** – 	C	|	C++	|	Java	|	Python
- **Find row with maximum no. of 1's** – 	C	|	C++	|	Java	|	Python
- **Print elements in sorted order using row-column wise sorted matrix** – 	C	|	C++	|
	Java	|	Python
- **Find a specific pair in matrix** – 	C	|**C++**|	Java	|	Python
- **Rotate matrix by 90 degrees** – 	C	|	C++	|	Java	|	Python
- **Kth smallest element in a row-column wise sorted matrix – C** |	C++	|	Java	|**Python**
- **Common elements in all rows of a given matrix** – 	C	|	C++	|	Java	|	Python

Pattern Printing

```
****
****
****
****
```

Square Star Pattern

Difficulty – ★

Checkout code for this program –

- C | Java | Python

```
****
*  *
*  *
****
```

Hollow Square Star Pattern

Difficulty – ★ and 1/2

Checkout code for this program –

- C | Java | Python

```
****
****
****
****
```

Rhombus Star Pattern

Difficulty – ★★

Checkout code for this program –

- C | Java | Python

```
******
******
******
******
```

Rectangle Star Pattern

Difficulty – ★

Checkout code for this program –

- C | Java | Python

```
******
*    *
*    *
******
```

Hollow Rectangle Star Pattern

Difficulty – ★ and 1/2

Checkout code for this program –

- C | Java | Python

```
******
******
******
******
```

Parallelogram Star Pattern

Difficulty – ★★

Checkout code for this program –

- C | Java | Python

```
****
 ****
  ****
   ****
```

Mirrored Rhombus Star Pattern

Difficulty – ★★ and 1/2

Checkout code for this program –

- C | Java | Python

```
*
**
***
****
```

Triangle Star Pattern

Difficulty – ★ and 1/2

- C | Java | Python

```
   *
  ***
 *****
*******
```

Pyramid Star Pattern

Difficulty – ★★

- C | Java | Python

```
   *
  * *
 *   *
*******
```

Hollow Pyramid Star Pattern

Difficulty – ★★

- C | Java | Python

```
*******
 *****
  ***
   *
```

Inverted Pyramid Star Pattern

Difficulty – ★★

- C | Java | Python

```
*******
 *   *
  * *
   *
```

Inverted Hollow Pyramid Star Pattern

Difficulty – ★★ and 1/2

- C | Java | Python

```
  *
 **
***
****
 ***
```

```
  *
 **
***
****
 ***
```

```
  *
 ***
*****
*******
 *****
```

Half Diamond Star Pattern

- C | Java | Python

Half Diamond Star Pattern Inverted

- C | Java | Python

Diamond Star Pattern

- C | Java | Python

Number Pattern Printing Programs

```
1111
1111
1111
1111
```

Basic Square 1 Pattern

Checkout code for this program –

- C | Java | Python

```
1111
2222
3333
4444
```

Basic Square incrementing Pattern

Checkout code for this program –

- C | Java | Python

```
333
313
323
333
```

Internal varsity square Pattern

Checkout code for this program –

- C | Java | Python

```
1
23
456
78910
```

Basic Right Triangle Number Pattern

Checkout code for this program –

- C | Java | Python

```
10987
456
32
1
```

Basic Right Triangle Number Pattern
(Inverted)

Checkout code for this program –

- C | Java | Python

```
6666
555
44
3
```

Basic incrementing Triangle Pattern
initialised = 3

Checkout code for this program –

- C | Java | Python

```
3
44
555
6666
```

Basic incrementing Triangle
Pattern(Inverted) initialised = 3
Checkout code for this program –

- C | Java | Python

```
3
4 5
6 7 8
9 10 11 12
```

Basic double incrementing Triangle
Pattern initialised = 3 Checkout code for
this program –

- C | Java | Python

```
3
44
555
6666
555
44
3
```

Basic incrementing Diamond
Pattern(Inverted) initialised = 3

Checkout code for this program –

- C | Java | Python

```
3
45
678
9101112
678
45
3
```

Basic double incrementing Triangle

Pattern initialised = 3

```
3
54
876
1211109
876
54
3
```

Basic incrementing Triangle

Pattern(Inverted) initialised Mirrored = 3

```
2
33
444
5555
5555
444
33
2
```

Basic incrementing Diamond

Pattern(Inverted Sandwich) initialised =

- C | Java | Python
- C | Java | Python

Checkout code for this program –

- C | Java | Python

```
      2
     34
    567
  891011
  891011
    567
     34
      2
```

```
      2
     43
    765
  1110198
  1110198
    765
     43
      2
```

Basic double incrementing Triangle Pattern initialised Sandwich= 3

Checkout code for this program –

- C | Java | Python

Basic incrementing Triangle Pattern(Inverted) initialised Mirrored Sandwich = 3

Checkout code for this program –

- C | Java | Python

Number Star Mix Pattern

```
1*2*3*4
5*6*7*8
9*10*11*12
13*14*15*16
```

```
13*14*15*16
9*10*11*12
5*6*7*8
1*2*3*4
```

```
1*2*3*4
9*10*11*12
5*6*7*8
13*14*15*16
```

Basic incrementing Squared Number-Star Pattern

Checkout code for this program

C | Java | Python

Basic incrementing inverted Squared Number-Star Pattern

Checkout code for this program

C | Java | Python

Basic incrementing Squared Number-Star Pattern + Basic incrementing inverted Squared Number-Star Pattern (alternate)

Checkout code for this program

C | Java | Python

```
1*2*3*4
9*10*11*12
13*14*15*16
5*6*7*8
```

```
1*2*3*4
9*10*11*12
17*18*19*20
13*14*15*16
5*6*7*8
```

```
4*3*2*1
12*11*10*9
8*7*6*5
16*15*14*13
```

Basic incrementing Squared Number-Star Pattern + Basic incrementing inverted Squared Number-Star Pattern (alternate)

Type 2

Checkout code for this program

C | Java | Python

Basic incrementing Squared Number-Star Pattern + Basic incrementing inverted Squared Number-Star Pattern (alternate)

Type 3

Checkout code for this program

C | Java | Python

Basic incrementing Squared Number-Star Pattern Mirrored + Basic incrementing inverted Squared Number-Star Pattern Mirrored (alternate)

Checkout code for this program

C | Java | Python

```
4*5*6
7*8*9*10
```

Basic incrementing Triangle Pattern

Checkout code for this program

   C | Java | Python

```
2*3
1
```

Basic incrementing Triangle Pattern

Checkout code for this program

   C | Java | Python

```
2*3
7*8*9*10
```

Basic incrementing Triangle Pattern + Inverted (Mix)

Checkout code for this program

   C | Java | Python

```
1
3*2
6*5*4
10*9*8*7
```

Basic incrementing mirrored Triangle Pattern

Checkout code for this program

   C | Java | Python

```
10*9*8*7
6*5*4
3*2
1
```

Basic incrementing inverted mirrored Triangle Pattern

Checkout code for this program

   C | Java | Python

```
1
4*5*6
2*3
7*8*9*10
```

Basic incrementing Triangle Pattern + Inverted (Mix)

Checkout code for this program

   C | Java | Python

```
1
2*2
3*3*3
4*4*4*4
3*3*3
2*2
1
```

Basic Diamond Number Star Pattern

Checkout code for this program

   C | Java | Python

```
1
2*2
3*3*3
4*4*4*4
4*4*4*4
3*3*3
2*2
1
```

Basic Diamond Number Star Pattern (Sandwich)

Checkout code for this program

   C | Java | Python

```
4*4*4*4
3*3*3
2*2
1
1
2*2
3*3*3
4*4*4*4
```

Basic Diamond Number Star Pattern (Sandwich Inverted)

Checkout code for this program

   C | Java | Python

```
2
3*3
4*4*4
3*3
2
```

Basic Diamond Number Star Pattern initialised

Checkout code for this program

   C | Java | Python

```
2
3*3
4*4*4
4*4*4
3*3
2
```

Basic Diamond Number Star Pattern (Sandwich)

Checkout code for this program

   C | Java | Python

```
6*6*6*6
5*5*5
4*4
3
3
4*4
5*5*5
6*6*6*6
```

Basic Diamond Number Star Pattern (Sandwich Inverted)

Checkout code for this program

   C | Java | Python

Few more pattern programs

- **Program for**   Pyramid star pattern
- **Program for**   Pyramid number pattern
- **Program for Palindromic Pyramid Pattern –**   Java | Python

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- **Program for**   Diamond number pattern
- **Program for Floyd's Trianlge –**   Java | Python
- **Program for Pascal triangle –**   Java | Python
- **Program to**   Check array similarity
- **Program for**   Square sum
- **Program for**   Longest palindrome in the array

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Ramya Civil war 1 code

1
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