Company Oriented

1. Given a number x find the square root of it. If x is not a perfect square, then print the floor value of square root of x. (Amazon, Microsoft, Accolite).

2. Given an integer, check whether it is a palindrome or not.(Oracle, Adobe)

3. Given a Binary Number, Print its decimal equivalent.(Adobe)

4. Given a binary number, write a program that prints 1 if given binary number is a multiple of 3.(Amazon)(Microsoft)

5. Calculate the angle between hour hand and minute hand. There can be two angles between hands, we need to print minimum of two. Also, we need to print floor of final result angle. For example, if the final angle is 10.61, we need to print 10. (Amazon, Sales Force, Paytm).

6. Print all pairs(sets) of prime numbers (p,q) such that p*q <= n, where n is given number. (amazon)

7. Given two numbers a and b, find kth digit from right of a^b. (Flipkart)

8. Given an array of integers check whether there are two numbers present with given product.(Amazon)

9. Given a number N, count the numbers from 1 to N which comprise of digits, only in set 1, 2, 3, 4 and 5.

10. Given a natural number n, print count of numbers from 1 to n that have odd number of divisors. For example, 4 has odd number of divisors (1, 2, 4), but 8 doesn't (1, 2, 4, 8)

11. Given an integer array, for each element in the array check whether there exist a smaller element on the next immediate position of the array. If it exist print the smaller element. If there is no smaller element on the immediate next to the element then print -1. Example: Input: 4 2 1 5 3 Output: 2 1 -1 3 -1 (Amazon)

12. Given an unsorted integer (positive values only) array of size 'n', we can form a group of two or three only, the group should be such that the sum of all elements in that group is a multiple of 3. Count all possible number of groups that can be generated in this way.(Amazon)

13. Given an unsorted array, find the minimum difference between any pair in given array.(Amazon)

14. Given an array of positive numbers, find the maximum sum of a subsequence with the constraint that no 2 numbers in the sequence should be adjacent in the array. So 3 2 7 10 should return 13 (sum of 3 and 10) or 3 2 5 10 7 should return 15 (sum of 3, 5 and 7).(Amazon, Oxygen-Wallet, Wallmart)

15. Given an array with all elements greater than or equal to zero. Return the maximum product of two numbers possible. (Amazon).

16. Given an array of size n-1 and given that there are numbers from 1 to n with one missing, the missing number is to be found. (Amazon, Microsoft).

17. Given an array of size n, rotate it by d elements. (Amazon, MAQ Software).

18. Given an array of size n, the array contains numbers in range from 0 to k-1where k is a positive integer and k <= n. Find the maximum repeating number in this array. For example, let k be 10 the given array be arr[] = {1, 2, 2, 2, 0, 2, 0, 2, 3, 8, 0, 9, 2, 3}, the maximum repeating number would be 2 if there are two or more maximum repeating numbers print the element having least value. (Amazon)

19. Given an unsorted array of non-negative integers, find a continuous subarray which adds to a given number. (Visa, Google, Amazon).

20. Given an array A[] of n numbers and another number x, determine whether or not there exist two elements in A whose sum is exactly x. (Carwale, Amazon).

21. Given an array of integers, replace every element with the next greatest element (greatest element on the right side) in the array. Since there is no element next to the last element, replace it with -1. (Amazon).

22. Given a positive number x, print all Jumping Numbers smaller than or equal to x. A number is called as a Jumping Number if all adjacent digits in it differ by 1. The difference between '9' and '0' is not considered as 1. All single digit numbers are considered as Jumping Numbers. For example 7, 8987 and 4343456 are Jumping numbers but 796 and 89098 are not.(Amazon - BankBazaar - Directi -Google - Microsoft - Moonfrog Labs - Opera - Oracle - Zycus)

23. Given an array and an integer k, find the maximum for each and every contiguous subarray of size k.(Flipkart, Amazon)

24. Given two strings s1 & s2, remove those characters from first string which are present in second string. Both the strings are different and contain only lowercase characters. (Amazon)

25. Given a string, remove spaces from it. (SAP)

26. Encrypt by using Caesar Cipher by rotating string by k
27. Check if the string is a Pangram – using every letter in alphabets

28. Check if two given strings are **isomorphic to each other**: Two strings str1 and str2 are called isomorphic if there is a one to one mapping possible for every character of str1 to every character of str2. And all occurrences of every character in 'str1' map to same character in 'str2'

29. Given a string, remove duplicates from it. Note that original order of characters must be kept same. Expected time complexity O(n) where n is length of input string and extra space O(1) under the assumption that there are total 256 possible characters in a string. (Microsoft)

30. Given a string, find length of the longest substring with all distinct characters. For example, for input "abca", the output is 3 as "abc" is the longest substring with all distinct characters.(Microsoft, Amazon)

31. Given a binary string, count number of substrings that start and end with 1. For example, if the input string is "00100101", then there are three substrings "1001", "100101" and "101".(Amazon)

32. Given a string s consisting of lowercase Latin Letters, find the first non repeating character in s.(Amazon, MakeMyTrip, Oia etc.)

33. Given a string, find the minimum number of characters to be inserted to convert it to palindrome.
    For Example:
    ab: Number of insertions required is 1. bab or aba
    aa: Number of insertions required is 0. aa
    abcd: Number of insertions required is 3. Dcbabcd (Google, Amazon)

34. Given a string S, find the longest palindromic substring in S. If more than one substring is found of same maximum length return the first found substring.(Microsoft, Amazon, Groupon)

35. Bastin once had trouble finding number in a string. The numbers are distributed in a string across various test cases.
    There are various numbers in each test case you need to find the number in each test case. Each test case has various numbers in sequence. You need to find only those numbers which do not contain 9.For eg if the string contain "hello this is alpha 5051 and 9475".You will extract 5051 and not 9475. You need only those numbers which are consecutive and you need to help him find the numbers. (TCS)

36. Given a positive integer, return its corresponding column title as appear in an Excel sheet.
    MS Excel columns has a pattern like A, B, C, ... ,Z, AA, AB, AC,.... ,AZ, BA, BB, ... ZZ, AAA, AAB ..... etc. In other words, column 1 is named as “A”, column 2 as “B”, column 27 as “AA”. (Microsoft, Samsung, Goldsman Sachs, Amazon)

37. Given a string, eliminate all “b” and “ac” in the string, replace them in-place and iterate over the string once. Ex: Input: acbac. Output: ;(Google)

38. Given a string, Your task is to complete the function encode that returns the run length encoded string for the given string. (Amazon, Microsoft)
    eg if the input string is “wwwwaaadexxxxxx”, then the function should return “w4a3d1e1x6″.
    You are required to complete the function encode that takes only one argument the string which is to be encoded and returns the encoded string.

39. You are given N strings of alphabet characters and the task is to find their matching decimal representation as on the shown keypad. (Amazon)

40. Output the decimal representation corresponding to the string. For ex: if you are given “amazon” then its corresponding decimal representation will be 262966.

41. Given a string, print all permutations of a given string. (Amazon)
the permutations of string ABC.
ABC ACB BAC BCA CBA CAB

42. Given a sequence of moves for a robot, check if the sequence is circular or not. A sequence of moves is circular if first and last positions of robot are same. A move can be one of the following. (Amazon)

G - Go one unit
L - Turn left
R - Turn right

Example: GLGLGLG - Output: **Circular**
GGGGL - Output: **Not Circular**

43. Given a sorted array **arr[]** of distinct integers. Sort the array into a wave-like array and return it (Amazon, Factsheet, Google etc)
In other words, arrange the elements into a sequence such that arr[1] >= arr[2] <= arr[3] >= arr[4] <= arr[5].....
Example: arr[] = {1,2,3,4,5}
Output: 2 1 4 3 5
Explanation: Array elements after sorting it in wave form are

2 1 4 3 5.

44. Given an array of length N consisting of only 0s and 1s in random order. Modify the array to segregate 0s on left side and 1s on the right side of the array. (Paytm)

45. Given an array **arr[]** of **size N** representing the size of candles which **reduce by 1 unit each day**. The room is illuminated using the given **N** candles. Find the maximum number of days the room is without darkness. (Snapdeal)
Input: N = 3, arr[] = {1,1,2}
Output: 2
Explanation: The candles' length reduce by 1 in 1 day. So, at the end of day 1: Sizes would be 0 0 1, So, at end of day 2: Sizes would be 0 0 0. This means the room was illuminated for 2 days.

46. Given an unsorted array **arr[]** of size **N**, rotate it by **D** elements (clockwise). (amazon)

47. Given an array **Arr** of **N** positive integers, find **K largest elements** from the array. The output elements should be printed in decreasing order.(amazon, Google, Microsoft, Walmart etc)

Expected Time Complexity: O(N)

48. Given an array **arr** of **n** elements which is first increasing and then may be decreasing, find the maximum element in the array. (Amazon, Microsoft)
Note: If the array is increasing then just print then **last element** will be the maximum value.
Expected Time Complexity: O(logn)

49. Given a sorted array **Arr** of size **N** and a number **X**, you need to find the number of occurrences of **X** in **Arr**. (Amazon, zoho)
Expected Time Complexity: O(logN)

50. Given an array **Arr** of **N** positive integers and a number **K** where **K** is used as a threshold value to divide each element of the array into sum of different numbers. Find the sum of count of the numbers in which array elements are divided. (Zoho)
    Input:
    N = 4, K = 3
    Arr[] = {5, 8, 10, 13}
    Output: 14
    Explanation: Each number can be expressed as sum
    of different numbers less than or equal to K as
    5 (3 + 2), 8 (3 + 3 + 2), 10 (3 + 3 + 3 + 1),
    13 (3 + 3 + 3 + 3 + 1). So, the sum of count
    of each element is (2+3+4+5)=14.

51. Given an array of size N containing only 0s, 1s, and 2s; sort the array in ascending order. (adobe, amazon, Microsoft, ola, oyo etc)
    Expected Time Complexity: O(N)