**PROGRAMMING PRACTICES**

**ASSIGNMENT -1**

**1. In a given fragment of text, replace all parentheses () with box [] brackets. Sample Input:** (23 + 5)\*2

**Output:** [23 + 5]\*2 🡪 sed ‘s/(/[/g’ | sed ‘s/)/]/g’

**2. In a given fragment of text, delete all the lowercase characters a-z. Sample Input:** Hello

**Output:** H  🡪 sed ‘s/[a-z]//g’

**3. In a given fragment of text, replace all sequences of multiple spaces with just one space.**

**Sample Input:** He llo

**Output:** He llo 🡪 sed 's/ \+/ /g'

**4. Given a list of words order them in lexicographical order.(words will be in Lower case only)**

**Sample Input:** hello program how are you

**Output:** are hello how program you

**5. Write a programme to check if the number is palindrome or not. Return in “Yes” or “No”.**

**Sample Input:** 121

**Output:** Yes

**6. Reverse the string.**

**Sample Input:** ABCD

**Output:** DCBA

**7. Given an array. We define a running sum of an array as runningSum[i] = sum(nums[0]…nums[i]). Return the running sum of the array.**

**Sample Input:** 1 2 3 4

**Output:** 1 3 6 10

**8. Given an array containing *n* distinct numbers taken from 0, 1, 2, ..., n, find the one that is missing from the array.**

**Sample Input:** 3,0,1

**Output:** 2

**9. Given a string returns the same string in lowercase.**

**Sample Input:** Hello

**Output:** hello 🡪 sed ‘s/[A-Z]/\L&\g’

**10. Balanced strings are those who have equal quantity of 'L' and 'R' characters. Given a balanced string s split it in the maximum amount of balanced strings. Return the maximum amount of splitted balanced strings.**

**Sample Input:** RLRRLLRLRL

**Output:** 4

**11. Check whether given strings are palindrome.**

**Sample Input:** ABBA

**Output:** Yes

**12. Given an array, sort the array in ascending order using bubble sort. Sample Input:** 9 2 5 8 3

**Output:** 2 3 5 8 9

**13. Given a number, find the sum of digits of the number.**

**Sample Input:** 124

**Output:** 7

**14. Given two numbers num1 and num2, write a shell script to find num1 to the power num2.**

**Sample Input:** 5 2

**Output:** 25

**15. Write a program to check if a given year is leap year.**

**Sample Input:** 2000

**Output:** Yes

**16. Find whether the given number is prime or not.**

**Sample Input:** 5

**Output:** Yes

**17. You are given a list of cities, each on a new line. Your task is to read them into an  array and then transform them in the following way: The first capital letter (if  present) in each element of the array should be replaced with a dot ('.'). Then,  display the entire array with a space between each city name.**

**Sample Input:**

Patna

Raipur

Shimla

**Output:** .atna .aipur .himla

**18. You are given a list of cities, each on a new line. Your task is to read them into an  array. Then slice the array and display only the elements lying between positions 2  and 4, both inclusive. Indexing starts from 0.**

**Sample Input:**

Patna

Raipur

Shimla

Bhopal

Kolkata

Delhi

**Output:** Shimla Bhopal Kolkata

**19. Given a Roman numeral, the task is to find its corresponding decimal value (between 1 to 3999).**

**Sample Input:** IX

**Output:** 9

**20. Given a number, find its corresponding Roman numeral (decimal number lying between 1 to 3999).**

**Sample Input:** 9

**Output:** IX

**21. A *self-dividing number* is a number that is divisible by every digit it contains. Check  whether a given number is self dividing or not. Print “Yes” or “No”.**

**Sample Input:** 124

**Output:** Yes

**22. Given two binary strings, return their sum (also a binary string). Sample Input:** 11 1

**Output:** 100

**23. Sort an array of 0s, 1s and 2s.**

**Sample Input:** 0 2 1 2 0

**Output:** 0 0 1 2 2

**24. Remove Consecutive Repetitions from the input.**

**Sample Input:** 11123344

**Output:** 1234

**25. Print Prime numbers up to given number.**

**Sample Input:** 5

**Output:** 2 3 5

**26. Print first n numbers of Fibonacci series.**

**Sample Input:** 5

**Output:** 0 1 1 2 3

**27. Given a string of 10 numbers convert it to the US phone number format. Sample Input:** 9439415666

**Output:** (943) 941-5666

**28. Count the number of unique alphabets from the given string.**

**Sample Input:** cool dude

**Output:** 6

**29. Check if the given number is strong number or not (print yes or no). A number is  said to be strong number if sum of factorials of its digits is equal to the given  number.**

**Sample Input:** 145

**Output:** Yes

**30. Given an array of integers perform the pair wise swapping.4**

**Sample Input:** 4 5 2 6 6 3 7

**Output:** 5 4 6 2 3 6 7