

## **LIST OF PROGRAMS (LAB WORK)**

### **COMPUTER SCIENCE (083)**

#### **CLASS - XI (NEW SYLLABUS)**

#### **Programs from Python Programming & SQL queries**

1. Write a Python program to accepts two integers and print their sum.
2. (a)Write a Python program that accepts radius of a circle and prints its area.  
  
(b)Write a Python program to accept length and width of a rectangle and compute its perimeter and area.
3. Write a Python program to compute simple interest for given Principal amount, time and rate of interest.
4. Write a Python program to find whether a given number is even or odd?
5. Write a Python program to find largest among three numbers.
6. Write a Python program to perform arithmetic calculation. This program accepts two operands and an operator then displays the calculated result.
7. Write a Python program to check whether a given year is leap year or not.
8. Write a Python program to print table of a given number.
9. Write a Python Program to print first n Natural numbers and their sum.
10. Create a program that takes a list of numbers and finds the largest and smallest numbers in the list.
11. Write a Python Program to calculate factorial of given number using while loop.
12. Write a program to print Fibonacci series.
13. Write a Python program to check whether a given number is equal to the sum of the cubes of its digits.

14. Write a Python program that generates a simple pattern using nested loops, such as a triangle or a square

```
A          *          1
B B        * *        2 1
C C C      * * *      3 2 1
D D D D    * * * *    4 3 2 1
E E E E E  * * * * *  5 4 3 2 1
```

- 15.(a) Program to add the odd numbers up to (and including) a given value N and print the result.  
(b) Program to add the even numbers up to (and including) a given value N and print the result.
16. Compute the greatest common divisor and the least common multiple of two integers.
17. Write a Python program to generate prime numbers for given range.
18. Write a Python Program to check whether the given string is palindrome or not.
19. Write a Python program to sort a list of 10 numbers using Bubble Sort method.
20. Write a Python program to sort a list of 10 numbers using Insertion Sort method.
21. SQL Commands (At least 15 SQL queries related to create, insert, delete, select, group by, order by, aggregate functions , like , where, in, between, Alter , update)
22. Develop a program that simulates a dice roll and displays the result.
23. Write a Python program to print all the even numbers from 1 to 20 using a `for` loop.
24. Create a program that takes a user-input string and counts the number of vowels (a, e, i, o, u) in it.
25. Write a Python program to print the first 10 natural numbers in reverse order (from 10 to 1) using a `while` loop.
26. Develop a program that takes a string and reverses it, then prints the reversed string.

27. Write a Python program to find the sum of all even numbers from 1 to 50 using a `for` loop.
28. Create a program that takes a sentence as input and counts the number of words in it.
29. Develop a program that calculates the factorial of a number using a `while` loop.
30. Implement a program that takes a string and checks if it contains only alphabetic characters (no numbers or special characters).
31. Develop a program that takes a list of words and returns a new list containing only the words that start with a vowel.
32. Create a program that takes a string and replaces all occurrences of a specific character with another character (e.g., replace all 'a' with 'x').
33. Create a program that takes a string and counts the number of uppercase letters in it.
34. Implement a program that checks if a given string is a valid email address based on basic criteria (e.g., contains "@" and "." characters).
35. Write a Python program to find and print the LCM (Least Common Multiple) of two numbers.
36. Create a program that takes a list of numbers and returns a new list containing only the even numbers.
37. Implement a program that calculates the average of a list of numbers taken from the user.
38. Write a Python program to find and print the largest and smallest elements in a list.
39. Create a program that generates a random number between 1 and 100 and asks the user to guess it. Provide hints if the guess is too high or too low.
40. Develop a program that takes a string and removes all spaces from it.
41. Write a Python program to find and print the largest prime number less than a given number.
42. Develop a program that counts the number of vowels and consonants in a given string.
43. Implement a program that takes a list of strings and sorts them by their length (shortest to longest).

44. Write a Python program to check if a given number is a perfect number (the sum of its divisors equals the number itself).
45. Write a Python program to find and print the median of a list of numbers.
46. Write a Python program to find and print the number of occurrences of a specific character in a string.
47. Create a program that generates a random list of numbers and finds the largest and smallest numbers without using built-in functions like `max()` and `min()`.
48. Implement a program that takes a list of numbers and returns a new list containing only the numbers in the Fibonacci sequence.
49. Write a Python program to find and print the sum of the digits of a user-input number.
50. Write a Python program to create the game hangman using nested loops.