7th, KM Haridwar, National Highway Vardhmanpuram,
Roorkee, Rehmadpur, Uttarakhand 247667

Lab Sheet-05

Control Structures in C++

BCA I Semester (Session 2025-2026)

Objective:

- To be familiar with the syntax and structure of C++ programming.
- To learn problem-solving techniques using C++

Requirements:

- C++ programming environment
- Text editor or IDE

Program List:

1. Write a program to print numbers from 1 to 10, but skip 5 using continue.
2. Write a program to print numbers from 1 to 10, but stop at 7 using break.
3. Write a program to search for a number in a sequence; stop searching if found (break).
4. Write a program to display even numbers between 1 and 20, skipping multiples of 4 (continue).
5. Write a program to simulate a menu-driven calculator with default in switch.
6. Write a program to check if a number is prime, terminate loop early using break.
7. Write a program to read numbers until -1 is entered, skip negative numbers using continue.
8. Write a program to print multiplication table for a given number, but stop when the product exceeds 50.
9. Write a program to demonstrate default case when no matching switch case exists.
10. Write a program to count positive numbers entered by the user until 0 is entered (break).
11. Write a program to calculate factorial of a number using while loop.
12. Write a program to generate Fibonacci series using while loop.
13. Write a program to find and print all prime numbers between 1 and N.

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14. Write a program to check whether a given number is Armstrong or not.
15. Write a program to display Armstrong numbers between 1 and 500.
16. Write a program to check whether a number is perfect number.
17. Write a program to display all perfect numbers between 1 and 1000.
18. Write a program to check whether a number is strong number.
19. Write a program to display all strong numbers between 1 and 500.
20. Write a program to print reverse of a number and check if it's palindrome.
21. Write a program to find the sum of all even and odd digits in a given number.
22. Write a program to check whether a given number is Harshad number.
23. Write a program to display all Harshad numbers between 1 and 100.
24. Write a program to display the multiplication tables from 1 to 10.
25. Write a program to print prime factors of a given number.
26. Write a program to find LCM of two numbers using loops.
27. Write a program to find GCD of two numbers using loops.
28. Write a program to display the sum of series: $1 + 2 + 3 + ... + N$.
29. Write a program to display the sum of series: $1^2 + 2^2 + 3^2 + ... + N^2$.
30. Write a program to display the sum of series: $1^3 + 2^3 + 3^3 + ... + N^3$.

Instructions:

- Write comment to make your programs readable.
- Use descriptive variables in your programs (Name of the variables should show their purposes)

Guidelines:

- Use Clear and Consistent Syntax
- Manage Variables and Data Types Correctly
- Handle Input/Output Effectively

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Submission:

- Submit the source code files (.cpp) for each task along with a brief report documenting the implementation details and the results of the executions.