

Experiment No-04: Looping in C Programming.

Objectives

- Write C programs using For Loop.
- Write C programs Using While and do While Loop.
- Solve different problems using Loop .

Example 1: Program to demonstrate the use of For Loop.

Write a C program to print the first 10 numbers using For Loop.

```
// Print numbers from 1 to 10

#include <stdio.h>

int main() {
    int i;

    for (i = 1; i < 11; ++i)
    {
        printf("%d ", i);
    }
    return 0;
}
```

Write a C Program to calculate the sum of first n natural numbers.

```
// Positive integers 1,2,3...n are known as natural numbers

#include <stdio.h>
int main()
{
    int num, count, sum = 0;

    printf("Enter a positive integer: ");
    scanf("%d", &num);
    // for loop terminates when num is less than count
    for(count = 1; count <= num; ++count)
    {
        sum += count;
    }
    printf("Sum = %d", sum);

    return 0;
}
```

Lab Task 1:

Example 2: Program to demonstrate the use While Loop.

Write a C program to print the five numbers.

```
// Print numbers from 1 to 5

#include <stdio.h>
int main() {
    int i = 1;

    while (i <= 5) {
        printf("%d\n", i);
        ++i;
    }

    return 0;
}
```

Lab Task 2:

Example 3: Program to demonstrate the use of do-While Loop.

Write a C Program to add numbers until the user enters zero .

```
#include <stdio.h>

int main() {
    double number, sum = 0;

    // the body of the loop is executed at least once
    do {
        printf("Enter a number: ");
        scanf("%lf", &number);
        sum += number;
    }
    while(number != 0.0);

    printf("Sum = %.2lf",sum);

    return 0;
}
```

Lab Task 3:

*** Please use your reference book of C programming for better understanding the basic syntax of each conditional statements and also include them in your lab report. ***

Practice Exercise

1. Write a C program to print all natural numbers in reverse (from n to 1). - using while loop
2. Write a C program to print all alphabets from a to z.-using while loop.
3. Write a C program to print all even numbers between 1 to 100.- using while loop
4. Write a C program to find sum of all natural numbers between 1 to n.
5. Write a C program to count number of digits in any number.
6. Write a C program to find first and last digit of any number.
7. Write a C program to calculate sum of digits of any number.
8. Write a C program to enter any number and print its reverse.
9. Write a C program to enter any number and print all factors of the number.
10. Write a C program to enter any number and calculate its factorial.

Resources (Link)

[\[For Loop\]](#) [\[While Loop\]](#)