

# C Language

Chapter # 12

Loop Constructs

Lecture: 43

# Today's Lecture

- ▶ while loop vs for loop
- ▶ Counter controlled & Sentinel control loop.

# while loop vs for loop

- ▶ The for loop is used when the number of iterations are known before the loop is entered. Suppose the user want to calculate the salary of 100 employees. In the situation for loop is the best option.
- ▶ The while loop is used when the number of iterations are not known at the beginning of the loop. Suppose a loop inputs a number from user and the displays it square. It then asks user whether he wants to repeat it or not. In this situation the number of iterations are decided by the user. So while loop is better.

# Counter controlled loop

- ▶ The counter controlled loop depends on the value of a variable known as counter variable.
- ▶ The value of counter variable is incremented or decremented each time the body of the loop is executed.
- ▶ The loop terminates when the value of counter variable reaches a particular value.

# Sentinel controlled loop

- ▶ The sentinel controlled loop depends on special value known as sentinel value.
- ▶ The loop terminates when the sentinel value is encountered.
- ▶ These types of loops are also known as conditional loops.
- ▶ For example, a loop may execute while the value of a variable is not -1
- ▶ Here -1 is sentinel value that is used to terminate the loop.



**The general form of sentinel loop is as follows.**

1. Get the data value.
2. Compare the data value with sentinel value.
3. Process the data value if it is different from sentinel value and get the next data value.
4. Terminate the loop if the data value is equal to sentinel value.

# Example

Write a program that uses a while loop to enter a number from the user and then display it. The loop is terminated when the user enters -1

```
#include<stdio.h>
#include<conio.h>
main()
{
    int n;
    n = 1;
    while(n!=-1)
    {
        printf("Enter a number: ");
        scanf("%d", &n);
        printf("You entered %d \n", n);
    }
    printf("End of program");
}
```



# The End

Read this topic from your books and ask question if any confusion.

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