

Recursive Functions: Recursion In C: C Tutorial In Hindi #21



Course: C Language Tutorials For Beginners (+)

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Recursive Functions :

Recursive functions or Recursion is a process when a function calls a copy of itself to work on smaller problems.

Recursion is the process in which a function calls itself directly or indirectly. And the corresponding function or function which calls itself is called as recursive function.

- Any function which calls itself is called recursive function.
- This makes life of programmer easy by dividing complex problem into simple or easier problems.
- A termination condition is imposed on such functions to stop them executing copies of themselves forever or infinitely.
- Any problem which can be solved recursively can also be solved iteratively.

Recursions are used to solve tower of Hanoi, Fibonacci series, factorial finding etc.

Base condition in recursion :

- The case at which the function doesn't recur is called the base case.

Recursive Case :

- The instances where the function keeps calling itself to perform a subtask i.e. solving problem by dividing it in small parts, is called the recursive case.

Now let me summarize whole recursions. So Recursion is a process in which any function keeps calling itself till any termination condition is satisfied and in simple words you can think Recursions as same like iteration because in both of them repetition occurs till any condition is satisfied or becomes false.

And the most important thing during using recursions is it's termination condition because most of time the condition given in recursive function is wrong and because of that the function is executed infinitely or for forever.

```
#include<stdio.h>
int factorial(int number)
{
    if (number ==1 || number == 0)
```

```
{
    return 1;
}
else
{
    return number*factorial(number-1); //Recursion of Function
}

}

int main()
{
    int num;
    printf("Enter a no. :");
    scanf("%d", &num);
    printf("\nThe factorial of %d is %d", num, factorial(num));

    return 0;
}
```

So, that's all about Recursions in C.

Code as described/written in the video

```
#include <stdio.h>

int factorial(int number)
{
    if (number == 1 || number == 0)
    {
        return 1;
    }
    else
    {
        return (number * factorial(number - 1));
    }
}

int main()
{
    int num;
    printf("Enter the number you want the factorial of\n");
    scanf("%d", &num);
    printf("The factorial of %d is %d\n", num, factorial(num));

    return 0;
}
```

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