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;
```

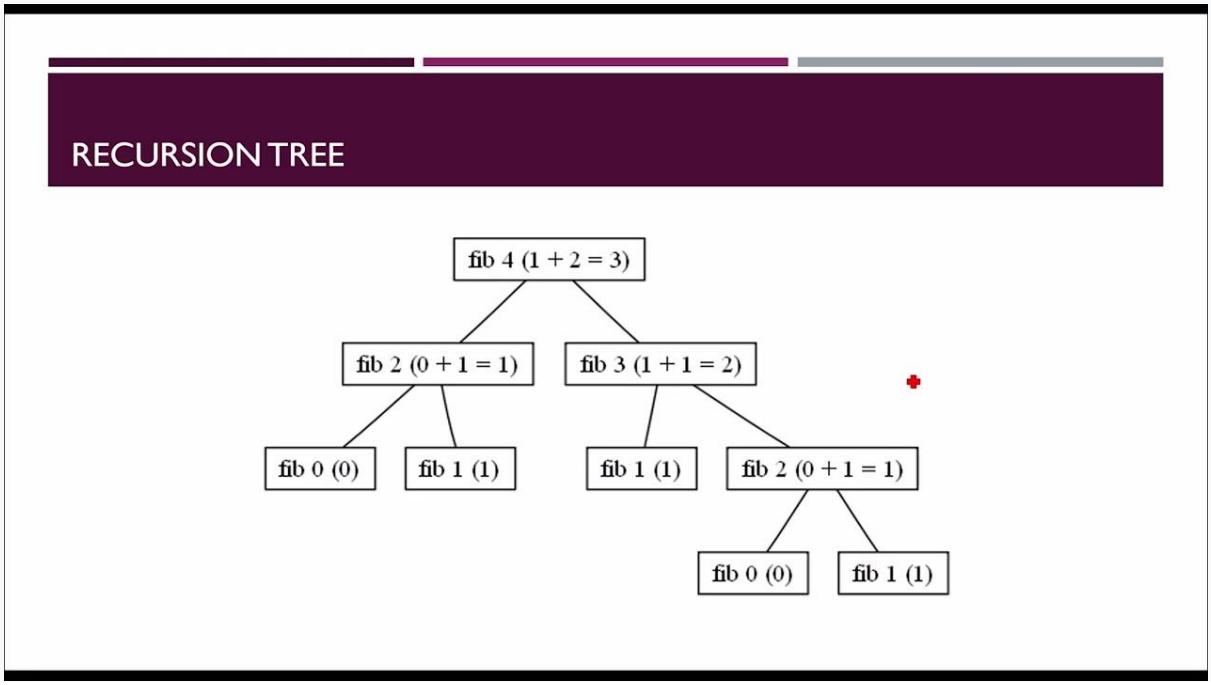
```
        }
        else
        {
                return number*factorial(number-1); //Recursion of
Function
        }
}

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

        return 0;
}
```

Why is Recursion not always good ?

Iterative approach takes less time as in case of Fibonacci Series it doesn't call same no. again and again but in Recursive approach it calls same no. again and again i.e. many times.



- Recursion is a good approach when it comes to problem solving.
- However, programmer needs to evaluate the need and impact of using recursive/iterative approach while solving a particular problem.
- In case of Factorial calculation, recursion saved a lot of lines of code.
- However in case of Fibonacci Series recursive approach called many functions again and again causing time waste.