Recursion
(Background)

```
def fun1():
    print("fun1() called")

def fun2():
    print("Before fun1()")
    fun1()
    print("After fun1()")


print("Before fun2()")
fun2()
print("After fun2()")
```

output:- Before fun2()
          Before fun1()
          fun1() called
          After fun1()
          After fun2()

Recursion:- A function calls itself directly or indirectly.

```
def fun1():
    - - - - -
    fun1()
    - - - - -
```
Direct

```
def fun1():
    - - - :
    fun2()
    - - - -

def fun2():
    - - - -
    fun1()
    - - -
```
X

Indirect

```
def fun():
    print("GFG")
    fun()

fun()
```
output: GFG
         GFG
         GFG
         :
         :

RecursionError: Maximum Recursion depth exceeds

```
def fun(n):
    if n == 0:
        return
    print("GFG")
    fun(n-1)

fun(3)
```
output: GFG
         GFG
         GFG

Typical Structure of Recursive Functions

```
def fun(----):
    Base case
    - - - - - -.

    Recursive call (i.e., call to fun(---))
    with at least one change to
    parameter so that call approaches
    toward a base case
    --- --- ---.
    -. -- - ---.
```