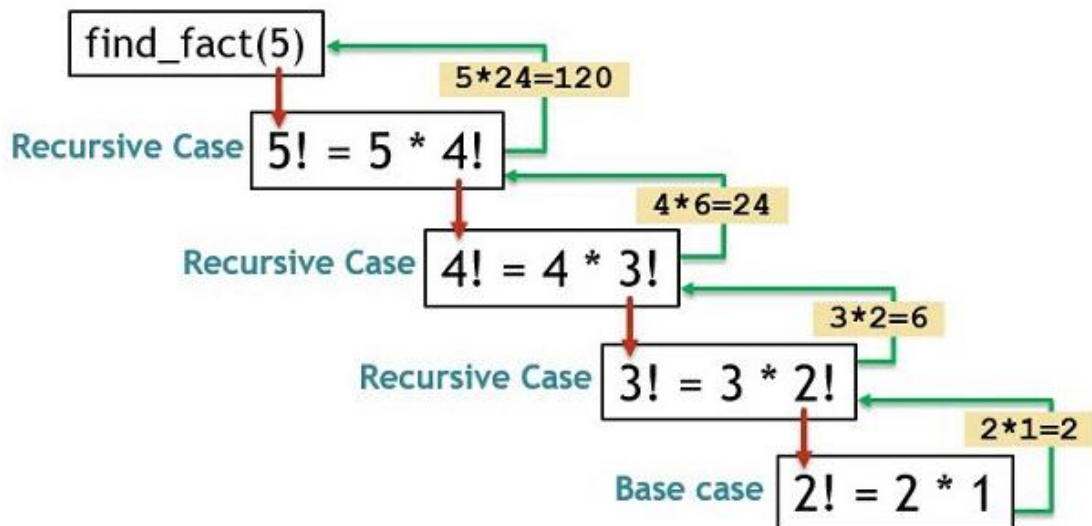


Recursive Functions in Python

```
def fact(n):  
    if n == 1:  
        return n  
    else:  
        return n * fact(n-1)  
  
print (fact(5))
```



```
def fibonacci (n):
    if n == 1 or n == 2:
        return 1
    else:
        return (fibonacci(n-1)) + (fibonacci(n -2 ))

print (fibonacci(7))
```

$$F(0) = 0$$

$$F(1) = 1$$

$$F(n) = F(n - 1) + F(n - 2)$$

$$\begin{aligned}
 F(5) &= F(4) + F(3) \\
 &= F(3) + F(2) + F(2) + F(1) \\
 &= F(2) + F(1) + F(1) + F(0) + F(1) + F(0) + 1 \\
 &= F(1) + F(0) + 1 + 1 + 0 + 1 + 0 + 1 \\
 &= 1 + 0 + 1 + 1 + 0 + 1 + 0 + 1 \\
 &= 5
 \end{aligned}$$

