Solution Review: Factorial of a Number

This lesson will explain the solution to the factorial exercise in the previous chapter.

WE'LL COVER THE FOLLOWING ^ • Solution • Explanation

Solution

```
def factorial(n):
    # Cover base cases
    if n==0 or n==1:
        return 1
    if n < 1:
        return -1

    # multiply all postiive integers below n
    product = 1
    while(n > 1):
        product = product * n
        n = n-1

    return product

print(factorial(5))
```

Explanation

The function starts with handling the edge cases. We know that for n==0 and n==1, we need to return 1. Therefore, we write an if statement with an or in between the conditions in line 2, so that if any of these is True, we return 1. Then we handle the case if n is a negative number in line 4. We return -1 in line 5.

After handling the edge cases now comes the main part. We initialize a

variable product with value 1 in line 7. Our aim is to keep multiplying a

number to this product and decrease that number in every iteration of the loop. Therefore, we use a while loop in line 7. The while loop will keep running as long as n is greater than 1. In line 9, we multiply product with n, and store the answer in product. This means the value of product is being updated in every iteration of the loop. We decrease n by 1 in line 10 so that in every iteration product is multiplied with the updated n.

This brings the end of this chapter. Now you have the basic Python knowledge to move towards handling data in Python in the next chapter.