Exercise: The Factorial!

Let's create a function that calculates the factorial of a number.

We'll cover the following

Problem Statement

In this challenge, you must implement the `factorial()` function. It takes an integer as a parameter and calculates its factorial. Python does have a built-in factorial function but you'll be creating your own for practice.

> The factorial of a number, *n*, is its product with all the integers between *0* and *n*.

$$factorial(n) = n * (n - 1) * (n - 2) * .... * 1$$

The factorial for `0` and `1` is always `1`.

Sample Input

```
n = 5
```

Sample Output

```
120
```

Coding Challenge

Take some time to understand the logic behind this problem before moving to the

implementation. Think about the different concepts we've learned so far and write an algorithm that handles all cases.

The input will always be an integer, so you don't need to worry about that. If the integer is negative, the function always returns `-1`.

If you feel stuck, feel free to check out the solution review in the next lesson.

Good luck!

```
def factorial(n):
    pass  # Replace with your own code
```