Solution Review: The Factorial of a Number (Loops)

This lesson explains the solution for the factorial of a number exercise.

WE'LL COVER THE FOLLOWING

Solution

```
let fact = (n: int) => {
  /* Check if n is 0 or 1 */
  if (n == 0 || n == 1) {
    1;
  }
  else {
    let i = ref(n);
    let prod = ref(1); /* Give the product a default value of 1 */

    while (i^ > 1) {
      prod := prod^ * i^; /* Multiple prod with i in each iteration */
      i := i^ - 1; /* Decrement i until it reaches 1 */
    };
    prod^;
  };
};

Js.log(fact(3));
```

Explanation

Initially, we handle the simplest values for `n`, `0` and `1`. In both cases, the function should return `1`.

Now comes the real crux of the code. We use a `while` loop to solve this problem.

The `i` wrapper begins from `n` and moves down through all integers until `1`. This allows us to multiply each value of `i` with the total product called `prod`.

The `while` loop runs as long as `i^` is greater than `1`, hence, all the positive integers we need for the factorial are covered.