R Program to Find the Factorial of a Number

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In this example, you'll learn to find the factorial of a number without using a recursive function.

To understand this example, you should have the knowledge of following R programming topics:

- R if...else Statement
- R for Loop

The factorial of a number is the product of all the integers from 1 to that number. For example, the factorial of 6 (denoted as 6!) is 1*2*3*4*5*6 = 720.

Factorial is not defined for negative numbers and the factorial of zero is one, `0! = 1`.

This example finds the factorial of a number normally. However, you can find it using recursion as well.

Example: Find the factorial of a number

```
# take input from the user
num = as.integer(readline(prompt="Enter a number: "))
factorial = 1
# check is the number is negative, positive or zero
if(num < 0) {
print("Sorry, factorial does not exist for negative numbers")
} else if(num == 0) {
print("The factorial of 0 is 1")
} else {
for(i in 1:num) {
factorial = factorial * i
}
print(paste("The factorial of", num ,"is",factorial))
}
```

Output

```
Enter a number: 8
[1] "The factorial of 8 is 40320"
```

Here, we take input from the user and check if the number is negative, zero or positive using `if...else` statement.

If the number is positive, we use `for` loop to calculate the factorial.

We can also use the built-in function `factorial()` for this.

```
> factorial(8)
[1] 40320
```