3.

**Bug Report**

**Title**: Application does not handle negative numbers for factorial calculation correctly

**ID**: BR-001

**Date**: May 28, 2024

**Reported by**: Sello Magagula

**Environment**:

* **Application**: Flask Factorial Calculator
* **URL**: http://localhost:6464/factorial
* **Browser**: Google Chrome 92.0
* **Operating System**: Windows 10

**Description**: When a negative number is entered for the factorial calculation, the application does not handle it correctly. The factorial of a negative number is undefined, but the application produces an incorrect result.

**Steps to Reproduce**:

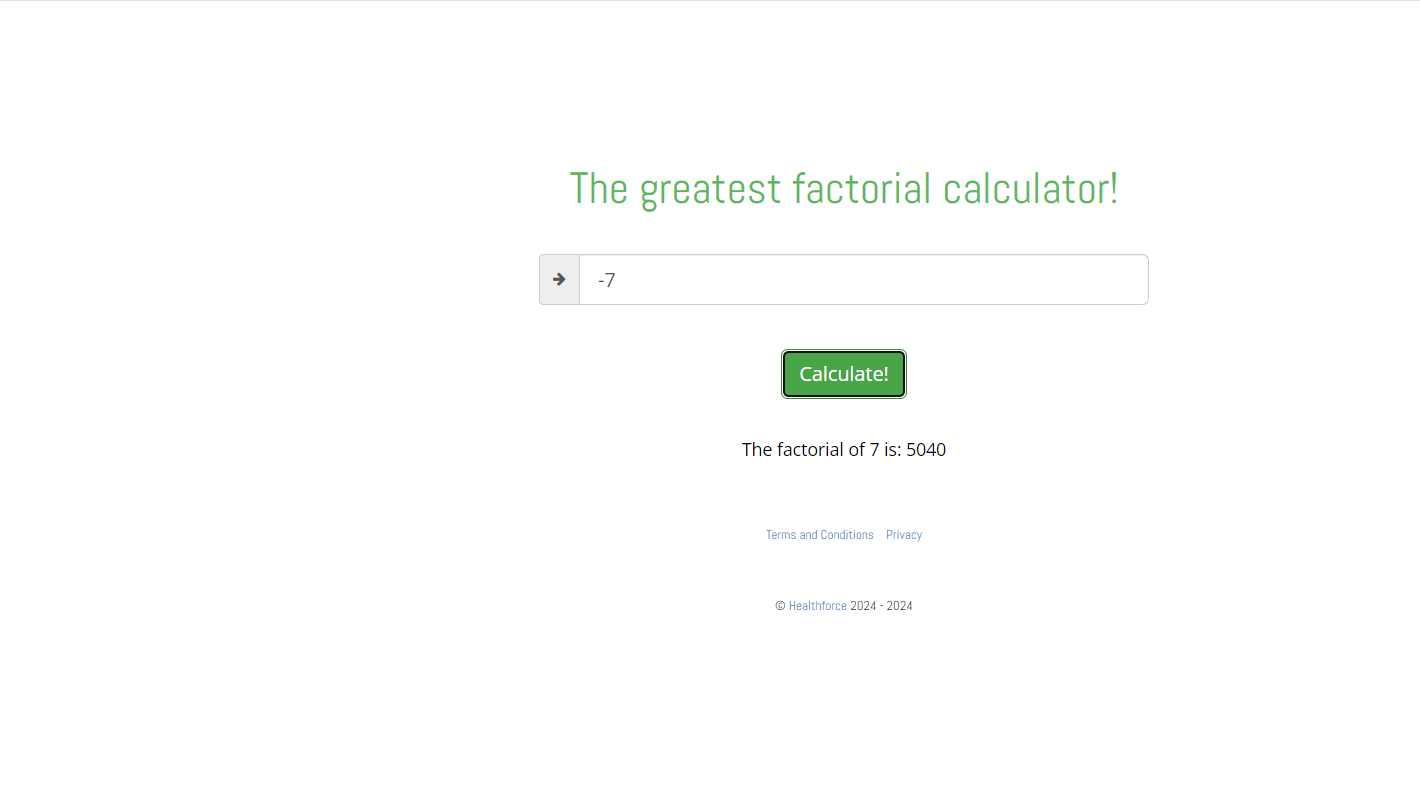
1. Open a web browser and navigate to the application URL: http://localhost:6464/factorial.
2. Enter a negative number (e.g., -5) in the input field with the placeholder "Enter an integer".
3. Click the "Calculate" button to submit the form.
4. Observe the application's behavior and the result displayed on the page.

**Expected Result**: The application should handle negative inputs gracefully by displaying a meaningful error message, such as "Factorial of a negative number is undefined".

**Actual Result**: The application doesn’t do anything.

**Attachments**:

* **Screenshot**



**Severity**: Medium

**Priority**: High

**Assigned To**: Sello Magagula

**Status**: Open

**Additional Information**:

* The issue seems to be due to the lack of validation for negative inputs in the factorial calculation logic.
* The frontend or backend should validate the input and handle negative numbers appropriately.

**Possible Root Cause**:

* The calculate\_factorial function does not check for negative inputs and proceeds to calculate the factorial, leading to unexpected behavior.

**Workaround**: There is no workaround available. Users are currently unable to use the application with negative inputs without encountering issues.

**Suggested Fix**: Add input validation to check for negative numbers and return an appropriate error message to the user.

**Code Reference**: Here is a suggested modification to the calculate\_factorial function to handle negative inputs:

def calculate\_factorial(n):

"Calculate the factorial of a number"

if n < 0:

return "Error: Factorial of a negative number is undefined"

elif n == 0:

return 1

else:

return n \* calculate\_factorial(n - 1)

**Notes**:

* Ensure thorough testing of the application after the fix is applied to validate the handling of negative inputs.
* Consider adding unit tests to cover edge cases and typical scenarios for the factorial function, including negative inputs.

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