**Bug 1: System calculates with negative input values**

Summary:

The application accepts and calculates VAT even when a negative value is entered, which contradicts the specified requirements.

Steps to Reproduce:

1. Navigate to http://www.calkoo.com/?lang=3&page=8

2. Enter a negative number (e.g., -10) into the NET field.

3. Select a VAT rate (e.g., 19%).

Expected Result:

An error message should be displayed indicating that negative inputs are not allowed.

Actual Result:

The system calculates VAT and Gross as if the input were positive, without any error message.

Environment:

- macOS Ventura (latest)

- Chrome 119.0.0.0, Safari 17.0, Firefox 119.0

Severity:

High

Additional Notes:

This issue violates the requirement that the system should provide a meaningful error message for negative inputs.

**Bug 2: System processes 10-digit input values injected via console**

Summary:

Although the UI prevents entering a 10-digit number directly, the system still calculates and processes values exceeding the allowed limit if injected via the browser console. According to the requirements, the system should return an error for values greater than 999,999,999.

Steps to Reproduce:

1. Open Developer Tools (F12) on http://www.calkoo.com/?lang=3&page=8

2. Set the NET field value to "1000000000" using JavaScript:

document.querySelector('input[name="net"]').value = '1000000000';

3. Manually trigger the calculation functions (vatCalc(); drawChart();) or dispatch the 'keyup' event.

4. Observe the results.

Expected Result:

The system should display an error message because the input exceeds the maximum allowed amount (999,999,999).

Actual Result:

The system calculates VAT and Gross without any error message or warning.

Environment:

- macOS Ventura (latest)

- Chrome 119.0.0.0, Safari 17.0, Firefox 119.0

Severity:

Low

Additional Notes:

This behaviour allows bypassing frontend validation and obtaining results for invalid inputs, contradicting the specified requirements.

**Bug 3: Pie chart tooltip flickers when hovering**

Summary:

The pie chart’s tooltip or legend flickers rapidly when the user hovers over it, making it difficult to read the displayed values and percentages.

Steps to Reproduce:

1. Navigate to http://www.calkoo.com/?lang=3&page=8

2. Perform a valid calculation (e.g., NET = 100, VAT rate = 19%, then "Calculate").

3. Hover the mouse over the pie chart segments or legend.

4. Observe the tooltip behaviour.

Expected Result:

The tooltip should appear smoothly and remain stable while hovered, displaying accurate information without flickering.

Actual Result:

The tooltip flickers rapidly, preventing the user from clearly seeing the displayed information.

Environment:

- macOS Ventura (latest)

- Chrome 119.0.0.0, Safari 17.0, Firefox 119.0

Severity:

Low

Additional Notes:

This issue affects user experience and readability, making it harder for users to interpret the calculated data.

**Bug 4: Input allows more than 2 decimal places**

Summary:

Despite the requirement to limit input to two decimal places, the application allows additional characters after the decimal point. For example, a single-digit number, followed by a decimal point, and then up to 8 more characters can be entered. The system then calculates using this input even though it exceeds the specified decimal precision limit.

Steps to Reproduce:

1. Navigate to http://www.calkoo.com/?lang=3&page=8

2. In the NET field, enter a single-digit number (e.g., "9").

3. Add a decimal point ("9.").

4. Continue adding numeric characters until you have exceeded two decimal places (e.g., "9.12345678").

5. Select a VAT rate (e.g., 19%) and click "Calculate".

Expected Result:

- The system should restrict the input to two decimal places.

- If the user attempts to enter more than two decimal digits, the input should be either blocked or trigger an error message.

Actual Result:

- The system accepts and processes the input with more than two decimal places.

- It performs the calculation as if the extra decimal digits were allowed.

Environment:

- macOS Ventura (latest)

- Chrome 119.0.0.0, Safari 17.0, Firefox 119.0

Severity:

Medium

Additional Notes:

This behaviour contradicts the specified requirement to limit decimal precision. Users might inadvertently enter invalid data, leading to unexpected calculations and potential confusion.