Calculations App

Final Project

Additions

Unit Test

I have updated the Calculations App to handle two more operations, the **modulus** (Python % operation) and **integer division** (Python // operation) operations. The operations were first added to APP/OPERATIONS/__INIT__.PY and tests were added to TESTS/UNIT/TEST_CALCULATOR.PY.

PYTEST TESTS/UNIT/TEST_CALCULATOR.PY::TEST_MODULUS
PYTEST TESTS/UNIT/TEST_CALCULATOR.PY::TEST_MODULUS_DIVIDE_BY_ZERO
PYTEST TESTS/UNIT/TEST_CALCULATOR.PY::TEST_INTDIV
PYTEST TESTS/UNIT/TEST_CALCULATOR.PY::TEST_INTDIV_DIVIDE_BY_ZERO
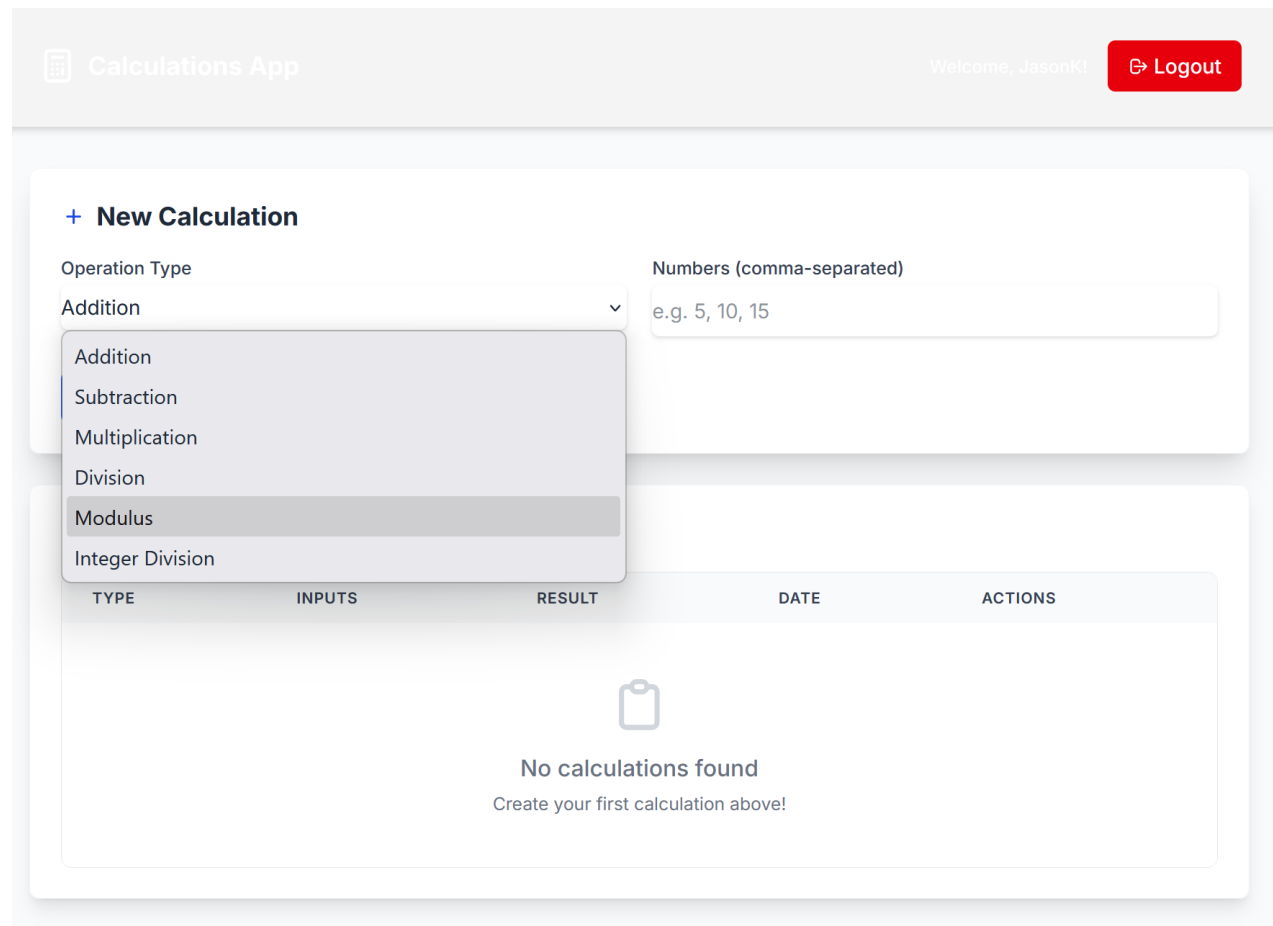
Integration Test

Next, I updated the Calculation factory class to allow the creation of two new calculation objects, Modulus and IntDivision, with appropriate validation rules in APP/MODULES/CALCULATION.PY and schema rules were updated to allow the new operations in APP/SCHEMAS/CALCULATION.PY. Tests were added to TESTS/INTEGRATION/TEST_CALCULATION.PY.to test the code, and schemas were tested using HTTP://LOCALHOST:8000/DOCS with an authorized user.

PYTEST TESTS/INTEGRATION/TEST_CALCULATION.PY::TEST_MODULUS_GET_RESULT
PYTEST TESTS/INTEGRATION/TEST_CALCULATION.PY::TEST_MODULUS_BY_ZERO
PYTEST TESTS/INTEGRATION/TEST_CALCULATION.PY::TEST_INTDIVISION_GET_RESULT
PYTEST TESTS/INTEGRATION/TEST_CALCULATION.PY::TEST_INTDIVISION_BY_ZERO
PYTEST TESTS/INTEGRATION/TEST_CALCULATION.PY::TEST_CALCULATION_FACTORY_MODULUS
PYTEST TESTS/INTEGRATION/TEST_CALCULATION.PY::TEST_CALCULATION_FACTORY_INTDIVISION
PYTEST TESTS/INTEGRATION/TEST_CALCULATION.PY::TEST_INVALID_INPUTS_FOR_MODULUS
PYTEST TESTS/INTEGRATION/TEST_CALCULATION.PY::TEST_INVALID_INPUTS_FOR_INTDIVISION

End-to-end Test

I then updated TEMPLATES/DASHBOARD.HTML, TEMPLATES/EDIT_CALCULATION.HTML and TEMPLATES/VIEW_CALCULATION.HTML to allow the new calculation operations and added new tests to TESTS/E2E/TEST_FASTAPI.PY.

PYTEST TESTS/E2E/TEST_CALCULATION.PY::TEST_MODEL_MODULUS

PYTEST TESTS/E2E/TEST_CALCULATION.PY::TEST_MODEL_INTDIVISION

PYTEST TESTS/E2E/TEST_CALCULATION.PY::TEST_CREATE_CALCULATION_MODULUS

PYTEST TESTS/E2E/TEST_CALCULATION.PY::TEST_CREATE_CALCULATION_INTDIVISION

Screenshots

✓ Calculation complete: 4

+ New Calculation

Operation Type

Addition ▾

Numbers (comma-separated)

e.g. 5, 10, 15 ✕

🖩 Calculate

📋 Calculation History

TYPE	INPUTS	RESULT	DATE	ACTIONS
Modulus	100, 27, 5	4	Aug 9, 2025 09:03 PM	👁 View ✏ Edit 🗑 Delete

+ New Calculation

Operation Type

Addition ▾

Numbers (comma-separated)

e.g. 5, 10, 15 ✕

🖩 Calculate

📋 Calculation History

TYPE	INPUTS	RESULT	DATE	ACTIONS
Modulus	100, 27, 5	4	Aug 9, 2025 09:03 PM	👁 View ✏ Edit 🗑 Delete
Integer Division	100, 7, 5	2	Aug 9, 2025 09:03 PM	👁 View ✏ Edit 🗑 Delete

🏠 Dashboard > View Calculation

🧮 Calculation Details

Result
4

OPERATION TYPE
Modulus

INPUT VALUES
100, 27, 5

CREATED
August 9, 2025 at 9:03 PM

LAST UPDATED
August 9, 2025 at 9:03 PM

CALCULATION ID
fa4b1225-6e38-4f77-9ca9-f7853c740b12

Modulus Operation

100 %
27 %
5

4

✎ Edit Calculation   **← Back to Dashboard**   **🗑 Delete**

🏠 Dashboard > View Calculation > Edit Calculation

✎ Update Calculation

Operation Type

🧮 modulus

ⓘ Operation type cannot be changed once created.

Input Values (comma-separated)

\# 10000, 2763, 35, 4

Enter two or more numbers separated by commas.

👁 Result Preview

10000 %
2763 %
35 %
4

3

✓ Save Changes   **👁 View Details**   **← Cancel**

🏠 Dashboard   >   View Calculation

📑 Calculation Details

Result
2

OPERATION TYPE
Integer Division

INPUT VALUES
100, 7, 5

CREATED
August 9, 2025 at 9:03 PM

LAST UPDATED
August 9, 2025 at 9:03 PM

CALCULATION ID
8f0a977d-dbff-47f8-bd49-c8f82f300f5e

Integer Division Operation

100 **/**
7 **/**
5
_____
2

[✎ Edit Calculation] [← Back to Dashboard] [🗑 Delete]

🏠 Dashboard   >   View Calculation   >   Edit Calculation

✎ Update Calculation

Operation Type

📑 intdivision

ⓘ Operation type cannot be changed once created.

Input Values (comma-separated)

10000, 2763, 35, 4

Enter two or more numbers separated by commas.

👁 **Result Preview**

10000 **/**
2763 **/**
35 **/**
4
_____
0

[✓ Save Changes] [👁 View Details] [← Cancel]

Welcome, JasonK!

Logout

+ **New Calculation**

Operation Type

Addition

Numbers (comma-separated)

e.g. 5, 10, 15

Calculate

Calculation History

TYPE	INPUTS	RESULT	DATE	ACTIONS
Modulus	10000, 2763, 35, 4	3	Aug 9, 2025 09:03 PM	View Edit Delete
Integer Division	10000, 2763, 35, 4	0	Aug 9, 2025 09:03 PM	View Edit Delete