

Task 4.1P – Documentation

This project is a basic calculator microservice built using Node.js and Express. It includes four API endpoints to perform arithmetic operations: addition, subtraction, multiplication, and division. Additionally, the microservice uses the Winston logging library to track incoming requests and errors, which is useful for development and troubleshooting.

Step-by-Step Instructions

Microservice Development

1. Initialize a Node.js Project

- Open the terminal and create a new project folder. Then run the following commands:
`npm init -y`
`npm install express`

2. Create the Express Application

Create a file called `index.js` and set up a basic Express server that listens on port 3040.

3. Design and Implement API Endpoints

Four GET endpoints were created: `/addition`, `/subtraction`, `/multiplication`, `/division`

4. Add Input Validation and Error Handling

The service checks for valid number inputs and handles division by zero errors with appropriate messages.

Adding Winston Logging

1. Install Winston

Run `npm install winston`

2. Configure Winston Logger

Logs errors to `error.log`, all info-level logs to `combined.log`, and console logs during development.

3. Log Request Information

Logs operation type, input values, and errors.

Run the Application

Start the server with node index.js

Test the Endpoints

ex: Use browser to test the end points;

<http://localhost:3040/addition?n1=10&n2=5>

<http://localhost:3040/substraction?n1=10&n2=3>

<http://localhost:3040/division?n1=10&n2=5>

<http://localhost:3040/multiplication?n1=100&n2=4>