Day 8: Building a Simple CLI Tool

✅ Today's goal:

- Learn how Node.js reads **command-line arguments**.
- Build a simple **Calculator CLI** you can run in the terminal.

✅ What is a CLI Tool?

- CLI = **Command Line Interface**.
- Lets you run your script with **arguments** from the terminal.
- Example:

bash
CopyEdit
node calculator.js sum 5 3

✅ Your script reads:

- "sum"
- 5
- 3

✅ How does Node.js get command-line input?

✅ With the built-in **process.argv** array:

js
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console.log(process.argv);

✅ Example run:

bash
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node app.js hello world

✅ Output:

bash
CopyEdit
[

```
  '/path/to/node',
  '/path/to/app.js',
  'hello',
  'world'
]
```

✅ Useful parts:

- process.argv[2] → "hello"
- process.argv[3] → "world"

✅ 🧪 Example CLI Calculator

✅ Full Code:

```
js
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const method = process.argv[2];
const num1 = parseFloat(process.argv[3]);
const num2 = parseFloat(process.argv[4]);

function calculator(method, num1, num2) {
  if (method === "sum") {
    return sum(num1, num2);
  } else if (method === "subtract") {
    return subtract(num1, num2);
  } else if (method === "multiply") {
    return multiply(num1, num2);
  } else if (method === "divide") {
    return divide(num1, num2);
  } else {
    return 'Invalid operation. Use sum, subtract, multiply, divide.';
  }
}

function sum(num1, num2) {
  return num1 + num2;
}

function subtract(num1, num2) {
  return num1 - num2;
}

function multiply(num1, num2) {
  return num1 * num2;
}

function divide(num1, num2) {
```

```
  return num1 / num2;
}

console.log(calculator(method, num1, num2));
```

✅ How to Run It

✅ In the terminal:

```
bash
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node calculator.js sum 5 3
```

✅ Output:

```
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8
```

✅ More examples:

```
bash
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node calculator.js subtract 10 4
# 6

node calculator.js multiply 2 5
# 10

node calculator.js divide 20 4
# 5
```

✅ ✅ Key Learning Points

✅ Use **process.argv** to read command-line input.
✅ Convert strings to numbers with **parseFloat**.
✅ Decide behavior based on user input.
✅ Print results to the terminal.

✅ Challenge / Mini Task:

✨ Add a **modulus** operation:

bash
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node calculator.js mod 10 3
Output: 1

✅ Advanced Ideas:

- Add error checking:

js
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```
if (isNaN(num1) || isNaN(num2)) {
  console.log('Please provide valid numbers!');
  process.exit(1);
}
```

- Use **yargs** or **commander** for better CLI parsing.
- Add colors with **chalk**.
- Create help text and usage instructions.

✅ 🎯 Summary

✨ Today you built a **real CLI tool** in Node.js!
✨ You learned to:

- Read command-line arguments.
- Parse and use input.
- Print dynamic results.
- Handle multiple operations in code.