

## Tip calculator

Here's the updated summary:

### Project Summary

I developed a tip calculator web application using HTML, CSS, and JavaScript. The app allows users to calculate tips based on a bill amount and tip percentage.

### Output

When the user enters a bill amount, tip percentage, and number of people, the app calculates the total amount and amount per person. For example:

- Bill Amount: \$100.00
- Tip Percentage: 15%
- Number of People: 4
- Round Tip: None

Output: Total Amount: \$115.00 | Amount per person: \$28.75

### Key Features

1. Input validation: The app includes input validation to ensure users enter valid numbers for bill amount and number of people.
2. Error handling: The app handles errors well, displaying informative error messages to users.
3. Customizable tip percentages: The app allows users to choose from different tip percentages or enter a custom percentage.
4. Responsive design: The app is designed to work well on different devices.

### Technical Details

1. Front-end development: The project uses front-end development technologies such as HTML, CSS, and JavaScript.
2. Client-side scripting: The app uses client-side scripting to handle user input and calculate tips.

### Program

```
<!DOCTYPE html>
<html>
<head>
  <title>Tip Calculator</title>
  <style>
    body {
      font-family: Arial, sans-serif;
    }

    form {
      width: 50%;
      margin: 40px auto;
      padding: 20px;
      border: 1px solid #ccc;
```

```
border-radius: 10px;
box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
}
```

```
label {
  display: block;
  margin-bottom: 10px;
}
```

```
input[type="number"] {
  width: 100%;
  height: 40px;
  margin-bottom: 20px;
  padding: 10px;
  border: 1px solid #ccc;
}
```

```
select {
  width: 100%;
  height: 40px;
  margin-bottom: 20px;
  padding: 10px;
  border: 1px solid #ccc;
}
```

```
button {
  width: 100%;
  height: 40px;
  background-color: #4CAF50;
  color: #fff;
  padding: 10px;
  border: none;
  border-radius: 5px;
  cursor: pointer;
}
```

```
button:hover {
  background-color: #3e8e41;
}
```

```
#result {
  font-size: 24px;
  font-weight: bold;
  margin-top: 20px;
}
```

```
.error {
  color: red;
}
```

```

        font-size: 12px;
        margin-bottom: 10px;
    }
</style>
</head>
<body>
    <h1>Tip Calculator</h1>
    <form>
        <label>Bill Amount:</label>
        <input type="number" id="bill-amount" step="0.01" min="0.01">
        <span id="bill-error" class="error"></span>
        <label>Tip Percentage:</label>
        <select id="tip-percentage">
            <option value="0.10">10%</option>
            <option value="0.15">15%</option>
            <option value="0.20">20%</option>
            <option value="custom">Custom</option>
        </select>
        <input type="number" id="custom-tip" style="display: none;" step="0.01" min="0">
        <span id="custom-tip-error" class="error"></span>
        <label>Round Tip:</label>
        <select id="round-tip">
            <option value="none">None</option>
            <option value="dollar">To nearest dollar</option>
            <option value="cent">To nearest cent</option>
        </select>
        <label>Number of People:</label>
        <input type="number" id="num-people" min="1">
        <span id="people-error" class="error"></span>
        <button id="calculate">Calculate</button>
        <button id="clear" type="reset">Clear</button>
    </form>
    <p id="result"></p>

    <script>
        document.getElementById('calculate').addEventListener('click', function(event) {
            event.preventDefault();
            calculateTip();
        });

        document.getElementById('clear').addEventListener('click', function(event) {
            event.preventDefault();
            clearForm();
        });

        document.getElementById('tip-percentage').addEventListener('change', function() {
            if (this.value === 'custom') {
                document.getElementById('custom-tip').style.display = 'block';
            }
        });
    </script>

```

```

    } else {
        document.getElementById('custom-tip').style.display = 'none';
    }
});

function calculateTip() {
    const billAmount = parseFloat(document.getElementById('bill-amount').value);
    const numPeople = parseInt(document.getElementById('num-people').value);
    let tipPercentage;

    if (isNaN(billAmount) || billAmount <= 0) {
        document.getElementById('bill-error').innerText = 'Please enter a valid bill
amount.';
        return;
    } else {
        document.getElementById('bill-error').innerText = "";
    }

    if (isNaN(numPeople) || numPeople <= 0) {
        document.getElementById('people-error').innerText = 'Please enter a valid number
of people.';
        return;
    } else {
        document.getElementById('people-error').innerText = "";
    }

    if (document.getElementById('tip-percentage').value === 'custom') {
        tipPercentage = parseFloat(document.getElementById('custom-tip').value)/100
    if (isNaN(tipPercentage) || tipPercentage < 0) {
        document.getElementById('custom-tip-error').innerText = 'Please enter a valid
custom tip percentage.';
        return;
    } else {
        document.getElementById('custom-tip-error').innerText = "";
    }
    } else {
        tipPercentage = parseFloat(document.getElementById('tip-percentage').value);
    }

    const roundTip = document.getElementById('round-tip').value;
    const tip = billAmount * tipPercentage;
    let totalAmount;

    if (roundTip === 'dollar') {
        totalAmount = billAmount + Math.round(tip);
    } else if (roundTip === 'cent') {
        totalAmount = billAmount + Math.round(tip * 100) / 100;
    } else {

```

```

        totalAmount = billAmount + tip;
    }

    const amountPerPerson = totalAmount / numPeople;
    document.getElementById('result').innerText = `Total Amount:
    ${totalAmount.toFixed(2)} | Amount per person: ${amountPerPerson.toFixed(2)}`;
}

function clearForm() {
    document.getElementById('bill-amount').value = "";
    document.getElementById('custom-tip').value = "";
    document.getElementById('num-people').value = "";
    document.getElementById('tip-percentage').value = '0.10';
    document.getElementById('round-tip').value = 'none';
    document.getElementById('result').innerText = "";
    document.getElementById('bill-error').innerText = "";
    document.getElementById('people-error').innerText = "";
    document.getElementById('custom-tip-error').innerText = "";
}
</script>
</body>
</html>

```

### Sample output

Bill Amount:

4000

Tip Percentage:

20%

Round Tip:

To nearest cent

Number of People:

2

Calculate

Total Amount: \$4800.00 | Amount per person: \$2400.00

### Project Outcome

1. Functional tip calculator: The app is a functional tip calculator that accurately calculates tips based on user input.

2. User-friendly interface: The app has a user-friendly interface that makes it easy for users to enter information and calculate tips.
3. Error handling: The app handles errors well, displaying informative error messages to users.
4. Customizable tip percentages: The app allows users to choose from different tip percentages or enter a custom percentage.