

LU07.S09 - Basic calculator with methods

Assignment

In LU06.S08 we were programming a basic calculator by manipulation the values directly when clicking the buttons. This is convenient, but limits the possibilities of the calculator significantly.

Therefore we need to do it, but this time by using a couple of methods

- to set values of diggit1, diggit2 and the operator
- to calculate the result
- to reset all values of the variables

Assignment A - 3'

- A01: Copy the solution of LU06.s07 and name it **LU07.s09.html**
- A02: Make sure to have
 - the assignment number in `<h1>` and
 - the description in `<h3>`-format
- A03: Save it.

Assignment B - Required methods - 16'

- B01: method **setDiggit1(number)**: It sets the value of the variable **diggit1** to the clicked number (diggit-block 1).
- B02: method **setDiggit2(number)**: It sets the value of the variable **diggit2** to the clicked number (diggit-block 2).
- B03: method **setOperator(op)**: It sets the value of the variable **operator** to the clicked operation, e.g. `+`. Hint: further operations are possible.
- B04: method **calcResult(op)**: Performs the calculation correspondingly to the chosen operation, e.g. `+`.
- B05: method **reset()**: Sets all variables to the initial values.

Assignment C - Variables - 1'

- C01: A basic calculation **3 + 3 = 6** comprises several variables and their initial values:
 - **diggit1**: 0
 - **operator**: `"`
 - **diggit2**: 0
 - **result**: 0

Assignment D - Button for diggit 1 - 10'

- D01: When clicking on one of them the content will be saved in the variable **diggit1**
- D02: But unlike in the previous task, this time the click triggers a method **setDiggit1(dig1)**

- D03: Continue with the other three buttons in the same fashion.
- D04: Check the result by displaying the content of the variable **diggit1** on the display.

Assignment E - Button the operation - 5'

- E01: When clicking the +-button the content will be saved in the variable **operator**
- E02: Check the result by displaying the content of the variable **operator** on the screen.

Assignment F - Button for diggit 2 - 5'

- F01: When clicking on the button in diggit2-block, the content will be saved in the variable **diggit2**
- F02: But unlike in the previous task, this time the click triggers a method **setDiggit2(dig2)**
- F03: Continue with the other three buttons in the same fashion.
- F04: Check the result by displaying the content of the variable **diggit2** on the display.

Assignment G: Implementation of the calculation - 10'

- G01: To execute our addition-operation we finally need a button **ENTER**. This triggers the method **calcResult(operator)**
- G02: If the variable operator is an + (plus operator), then the calculation is an addition. In that case the result is **this.result = diggit1 + diggit2**. Hint: subtraktion, multiplication and division are similiar to programm.
- G03: Display the result of the variable **result** on the screen.

Solution

VS Code Editor showing the HTML file content for the calculator application. The code includes a form for entering two digits and an operator, and a result display area.

```

<html lang="en"> Show component usages
<head>
  <meta charset="UTF-8">
  <title>Vue v-on Challenge</title>
  <script src="https://unpkg.com/vue@3/dist/vue.global.js"></script>
</head>
<body>
  <div id="app">
    <h1>LU07.S09 - Basic calculator with methods</h1>
    <h2>Little basic calculator using some methods</h2>
    <hr>
    <!-- ----- Diggit 1 Area ----->
    <b> Enter diggit 1:</b>
    <div>
      <button v-on:click="setDiggit1(1)">1</button>
      <button v-on:click="setDiggit1(2)">2</button><br>
      <button v-on:click="setDiggit1(3)">3</button>
      <button v-on:click="setDiggit1(4)">4</button>
    </div>
    <hr>
    <!-- ----- Operator Area ----->
    <b> Enter Operator:</b>
    <div>
      <button v-on:click="setOperator('+')">+</button>
    </div>
  </div>

```

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Little basic calculator using some methods

Enter diggit 1:
 1 2
 3 4

Enter Operator:
 +

Enter diggit 2:
 1 2
 3 4

Diggit1: 1
 Operator: +
 Diggit2: 2

ENTER Reset

Result: 3

VS Code Editor showing the JavaScript file content for the calculator application. The code defines a Vue.js application with methods for setting digits and operators, calculating the result, and resetting the state.

```

<script>
  const app = Vue.createApp({ rootComponent: {
    data() {
      return { // Initialwerte
        diggit1: 0,
        operator:'',
        diggit2: 0,
        result: 0
      };
    },
    methods: {
      setDiggit1(number) {
        this.diggit1 = number
      },
      setDiggit2(number) {
        this.diggit2 = number
      },
      setOperator(op) {
        this.operator = op
      },
      calcResult() {
        if (this.operator === '+')
          this.result = this.diggit1 + this.diggit2
      },
      reset() {
        this.diggit1 = 0,
        this.operator = '+',
        this.diggit2 = 0
        this.result = 0
      }
    }
  }})
</script>

```

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Enter diggit 1:
 1 2
 3 4

Enter Operator:
 +

Enter diggit 2:
 1 2
 3 4

Diggit1: 0
 Operator:
 Diggit2: 0

ENTER Reset

Result: 0

Source code as Zip

Vocabulary

English	German
diggit	Ziffer
initial values	Startwerte
to suffice	ausreichen
respectively	beziehungsweise
to comprise	umfassen
several	einige, etliche



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