Vue.js Basics

In this Vue 3 tutorial you'll learn how to quickly setup Vue.js in a web application (using the CDN) and use it to implement some basic functionality such as using data properties & reacting to click events.

Also we'll talk about mouse events, using v-for to output lists, attribute binding & computed properties.

Installation

Vue.js is built by design to be incrementally adoptable. This means that it can be integrated into a project multiple ways depending on the requirements.

There are four primary ways of adding Vue.js to a project:

1. Import it as a CDN package on the page

2. Download the JavaScript files and host them yourself

3. Install it using npm

4. Use the official CLI to scaffold a project, which provides batteries-included build setups for a modern frontend workflow (e.g., hot-reload, lint-on-save, and much more)

For prototyping or learning purposes, you can use the latest version with:

```
<script src="https://unpkg.com/vue@next"></script>
```

For production, we recommend linking to a specific version number and build to avoid unexpected breakage from newer versions
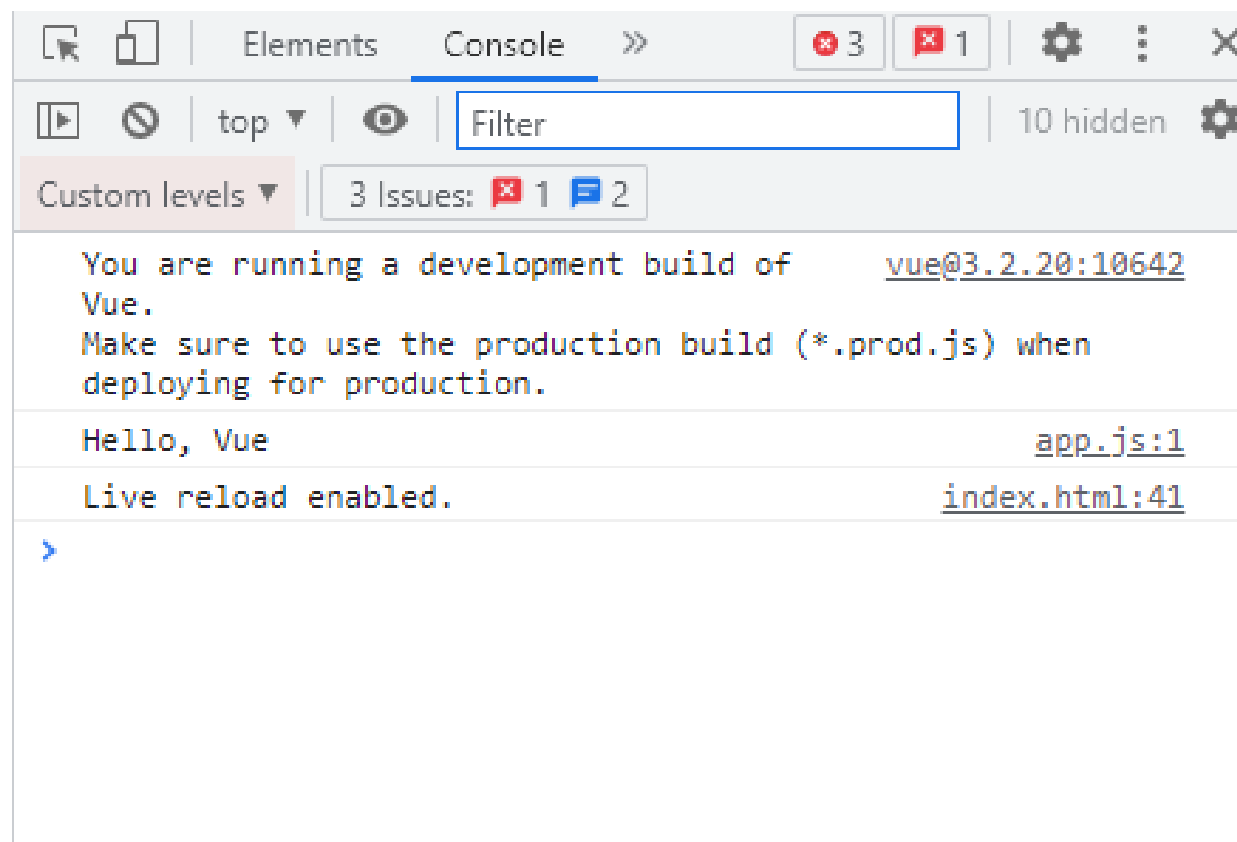
Create file app.js

app.js

```js
console.log('Hello, Vue');
```

Edit file index.html

```html
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Lerning Vue</title>

    <script src="https://unpkg.com/vue@3.2.20"></script>

</head>
<body>
    <h1>Hello Vue :) </h1>

    <script src="app.js"></script>

</body>
</html>
```

Add code

Hello Vue :)

Edit file app.js

app.js

```javascript
const app = Vue.createApp({
    // data, functions etc
    template: '<h2>I am the template</h2>',
})

app.mount('#app')
```

Edit file index.html

```html
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width,
initial-scale=1.0">
  <title>Learning Vue</title>
  <script src="https://unpkg.com/vue@3.2.20"></script>
</head>
<body>
  <h1>Hello, Vue :)</h1>

  <div id="app">

  </div>

  <script src="app.js"></script>
</body>
</html>
```

Add code

Hello Vue :)

I am the template now

```html
<html lang="en">
  ▶ <head>…</head>
  ▼ <body>
      <h1>Hello Vue :) </h1>
    ▼ <div id="app"> == $0
        <h2>I am the template now</h2>
      </div>
      <script src="app.js"></script>
      <!-- Code injected by live-server -->
    ▶ <script type="text/javascript">…</script>
  </body>
</html>
```
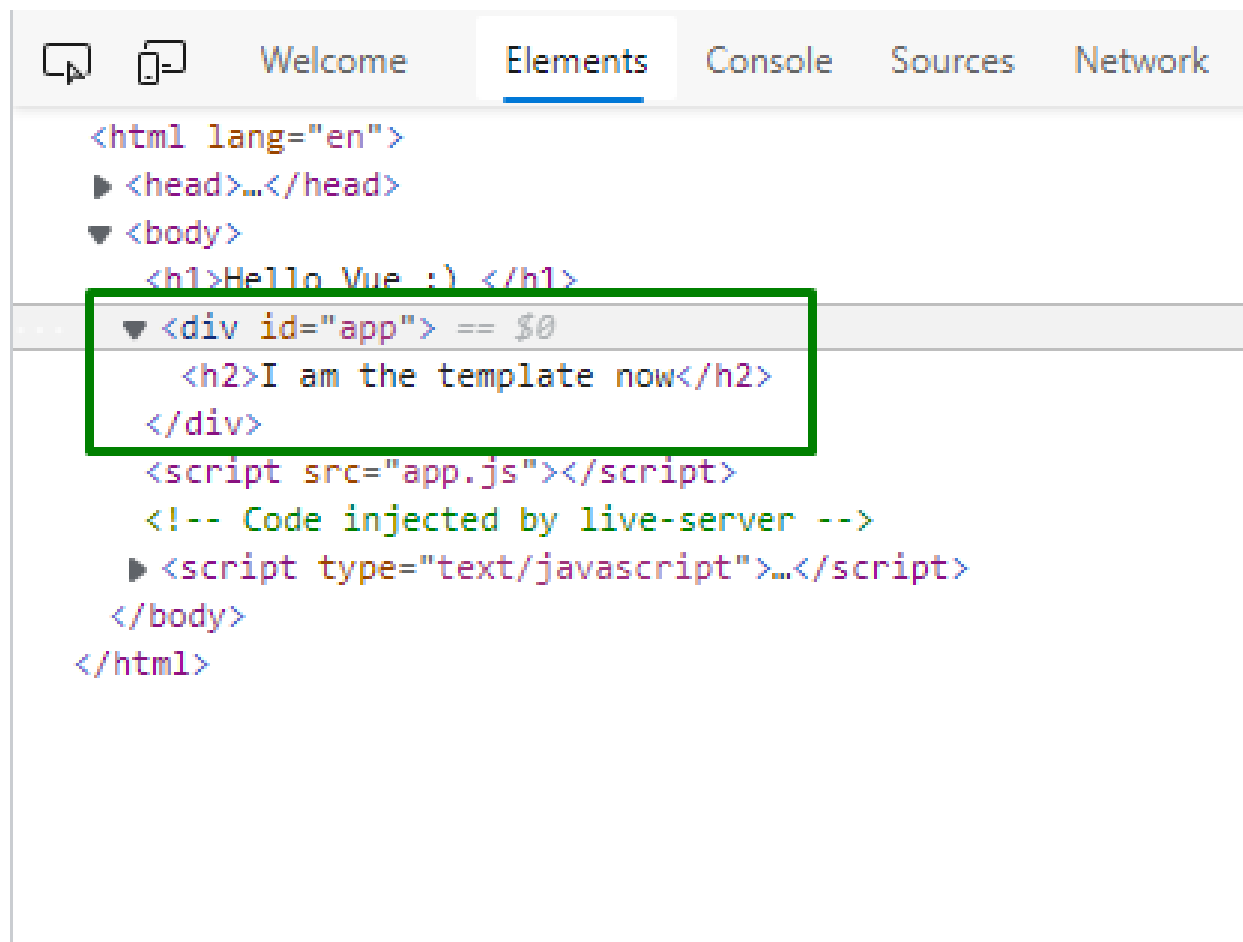
Data & Templates

Edit file app.js

app.js

Add code

```
const app = Vue.createApp({
  data() {
    return {
      title: 'The Way of Kings',
      author: 'Brandon Sanderson',
      age: 45
    }
  }
})

app.mount('#app')
```

Edit file index.html

Add code

```html
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Learning Vue</title>
  <script src="https://unpkg.com/vue@3.0.0"></script>
</head>
<body>
  <h1>Hello, Vue :)</h1>

  <div id="app">
    <p>{{ title }} - by {{ author }}, {{ age }} years old</p>
  </div>

  <!-- does not work -->
  {{ title }}

  <script src="app.js"></script>
</body>
</html>
```

Click Events

Edit file app.js

app.js

Add code

```javascript
const app = Vue.createApp({
    data() {
        return {
            title: 'The Way of Kings',
            author: 'Brandon Sanderson',
            age: 45
        }
    },

    methods: {
        changeTitle(title) {
            // this.title = 'Words of Radiance'
            this.title = title
        }
    }

})

app.mount('#app')
```

Edit file index.html

index.html

Add code

```html
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Learning Vue</title>
  <script src="https://unpkg.com/vue@3.0.0"></script>
</head>
<body>
  <h1>Hello, Vue :)</h1>

  <div id="app">
    <p>{{ title }} - by {{ author }}, {{ age }} years old</p>

    <button v-on:click="age++">Increase age</button>
    <button @click="age--">Decrease age</button>
    <div @click="changeTitle('Oathbringer')">Change book title</div>

  </div>

  <script src="app.js"></script>
</body>
</html>
```
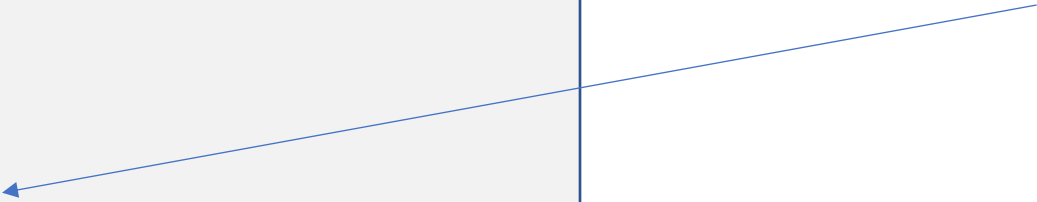
Conditional Rendering

Edit file app.js

app.js

Add code

```javascript
const app = Vue.createApp({
    data() {
        return {

            showBooks: true,

            title: 'The Way of Kings',
            author: 'Brandon Sanderson',
            age: 45
        }
    }
})

app.mount('#app')
```

Edit file index.html

index.html

Add code

```html
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Learning Vue</title>
  <script src="https://unpkg.com/vue@3.0.0"></script>
</head>
<body>
  <h1>Hello, Vue :)</h1>

  <div id="app">

      <div v-if="showBooks">

        <p>{{ title }} - by {{ author }}, {{ age }} years old</p>

      </div>

  </div>

  <script src="app.js"></script>
</body>
</html>
```

Edit file app.js

app.js

Edit
code

```javascript
const app = Vue.createApp({
    data() {
        return {

            showBooks: false,

            title: 'The Way of Kings',
            author: 'Brandon Sanderson',
            age: 45
        }
    }
})

app.mount('#app')
```

Before

Hello, Vue :)

The Way of Kings - by Brandon Sanderson, 45 years old

After

Hello, Vue :)
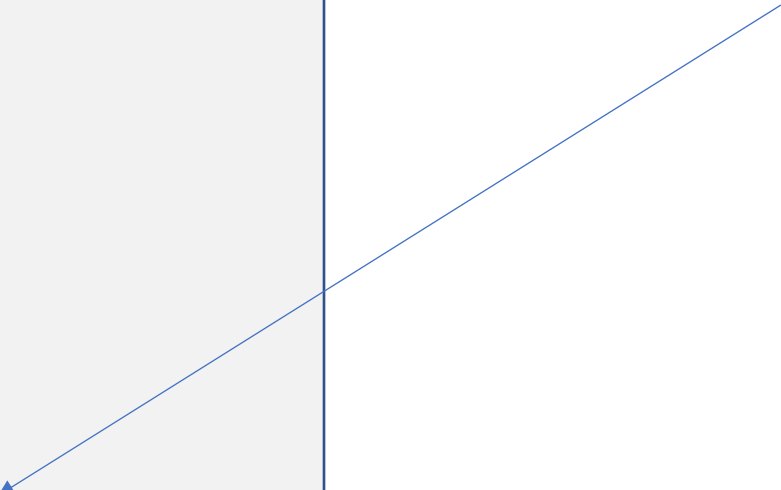
Edit file app.js

app.js

Add code

```javascript
const app = Vue.createApp({
    data() {
      return {
        showBooks: true,
        title: 'The Way of Kings',
        author: 'Brandon Sanderson',
        age: 45
      }
    },

    methods: {
      toggleShowBooks() {
        this.showBooks =  !this.showBooks
      }
    }

})

app.mount('#app')
```

Edit file index.html

index.html

```html
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Learning Vue</title>
  <script src="https://unpkg.com/vue@3.0.0"></script>
</head>
<body>
  <h1>Hello, Vue :)</h1>

  <div id="app">

    <div v-if="showBooks">
      <p>{{ title }} - by {{ author }}, {{ age }} years old</p>
    </div>

    <button @click="toggleShowBooks">
      <!-- Toggle books -->
      <span v-if="showBooks">Hide books</span>
      <span v-else>Show books</span>
    </button>

  </div>

  <script src="app.js"></script>
</body>
</html>
```

Add code

Edit file index.html

index.html

```html
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Learning Vue</title>
  <script src="https://unpkg.com/vue@3.0.0"></script>
</head>
<body>
  <h1>Hello, Vue :)</h1>

  <div id="app">
      <div v-if="showBooks">
        <p>{{ title }} - by {{ author }}, {{ age }} years old</p>
      </div>

      <div v-else>
        <p>Click the button below to show books</p>
      </div>

      <button @click="toggleShowBooks">
        <!-- Toggle books -->
        <span v-if="showBooks">Hide books</span>
        <span v-else>Show books</span>
      </button>

      <div v-show="showBooks">currently showing books</div>
  </div>

  <script src="app.js"></script>
</body>
</html>
```

Add code

Other Mouse Events

Edit file index.html

index.html

```html
<html lang="en">
<head>
...
  <style>
    .box {
      padding: 100px 0;
      width: 400px;
      text-align: center;
      background: #ddd;
      margin: 20px;
      display: inline-block;
    }
  </style>
</head>
<body>
  <h1>Hello, Vue :)</h1>

  <div id="app">

      ...
      <div v-show="showBooks">currently showing books</div>

      <br>
      <!-- mouse events -->
      <div class="box" @mouseover="handleEvent($event, 5)">mouseover (enter)</div>
      <div class="box" @mouseleave="handleEvent">mouseleave</div>
      <div class="box" @dblclick="handleEvent">double click me</div>
      <div class="box" @mousemove="handleMousemove">position {{ x }} {{ y }}</div>

  </div>

  <script src="app.js"></script>
</body>
</html>
```

Add code

Edit file app.js

app.js

Add code

```javascript
const app = Vue.createApp({
    data() {
      return {
        showBooks: true,
        title: 'The Way of Kings',
        author: 'Brandon Sanderson',
        age: 45,

        x: 0,
        y: 0,

      }
    },

    methods: {
      toggleShowBooks() {
        this.showBooks =  !this.showBooks
      },
        handleEvent(e, data) {
        console.log(e.type, e)
        if (data) {
            console.log(data)
        }
      },
        handleMousemove(e) {
        this.x = e.offsetX
        this.y = e.offsetY
        }
      }

})

app.mount('#app')
```

Hello, Vue :)

Click the button below to show books

Show books

mouseover (enter)	mouseleave
double click me	position 227 124

Outputting Lists

Edit file app.js

app.js

Add code
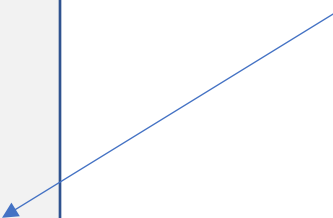
```javascript
const app = Vue.createApp({
    data() {
        return {
            showBooks: true,
            books: [
                { title: 'Name of the wind', author: 'Patrick rothfuss' },
                { title: 'The way of kings', author: 'Brandon sanderson' },
                { title: 'The final empire', author: 'Brandon sanderson' },
            ],
        }
    },
    methods: {
        toggleShowBooks() {
            this.showBooks =  !this.showBooks
        },
    }
})

app.mount('#app')
```

Edit file index.html

index.html

Add code

```html
<html lang="en">
<head>
...
</head>
<body>
  <h1>Hello, Vue :)</h1>

  <div id="app">
      <div v-if="showBooks">

        <ul>
            <li v-for="book in books">
              <h3>{{ book.title }}</h3>
              <p>{{ book.author }}</p>
            </li>
          </ul>

      </div>

      <div v-else>
        <p>Click the button below to show books</p>
      </div>
      <button @click="toggleShowBooks">
        <!-- Toggle books -->
        <span v-if="showBooks">Hide books</span>
        <span v-else>Show books</span>
      </button>
      <div v-show="showBooks">currently showing books</div>
  </div>

  <script src="app.js"></script>
</body>
</html>
```
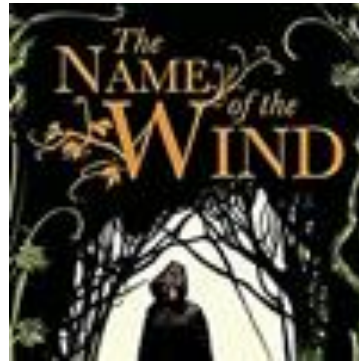
Attribute Binding

Create new folder 'assets'
Upload next images into the folder 'assets'

1.jpg

2.jpg

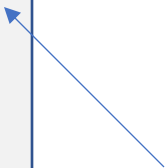

3.jpg

Edit file app.js

app.js

```js
const app = Vue.createApp({
    data() {
      return {
        showBooks: true,
        books: [
            { title: 'Name of the wind', author: 'Patrick Rothfuss',  img: 'assets/1.jpg' },
            { title: 'The way of kings', author: 'Brandon Sanderson', img: 'assets/2.jpg' },
            { title: 'The final empire', author: 'Brandon Sanderson', img: 'assets/3.jpg' },
        ],
      }
    },
    methods: {
      toggleShowBooks() {
        this.showBooks =  !this.showBooks
      },
    }
})

app.mount('#app')
```

Add code

Edit file index.html

index.html

Add code

```html
<html lang="en">
<head>
...
</head>
<body>
  <h1>Hello, Vue :)</h1>

  <div id="app">
      <div v-if="showBooks">
        <ul>
            <li v-for="book in books">

              <img :src="book.img" :alt="book.title">

                <h3>{{ book.title }}</h3>
                <p>{{ book.author }}</p>
              </li>
            </ul>

      </div>
      <div v-else>
        <p>Click the button below to show books</p>
      </div>
      <button @click="toggleShowBooks">
        <!-- Toggle books -->
        <span v-if="showBooks">Hide books</span>
        <span v-else>Show books</span>
      </button>
      <div v-show="showBooks">currently showing books</div>
  </div>

  <script src="app.js"></script>
</body>
</html>
```

Dynamic Classes

Create file style.css

style.html

```css
body{
    background: #eee;
    max-width: 960px;
    margin: 20px auto;
}
p, h3, ul{
    margin: 0;
    padding: 0;
}
li{
    list-style-type: none;
    background: #fff;
    margin: 20px auto;
    padding: 10px 20px;
    border-radius: 10px;
    display: flex;
    align-items: center;
    justify-content: space-between;
}
```
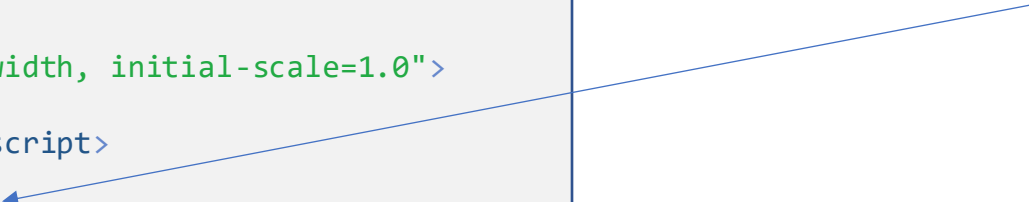
Edit file index.html

index.html

```html
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Learning Vue</title>
  <script src="https://unpkg.com/vue@3.0.0"></script>

  <link rel="stylesheet" href="style.css">

</head>
<body>

  <div id="app">
  ...
  </div>

  <script src="app.js"></script>
</body>
</html>
```

Add code

Edit file app.js

app.js

```javascript
const app = Vue.createApp({
    data() {
      return {
        showBooks: true,
        books: [
            { title: 'Name of the wind', author: 'Patrick Rothfuss ', img: 'assets/1.jpg', isFav: true },
            { title: 'The way of kings', author: 'Brandon Sanderson', img: 'assets/2.jpg', isFav: false },
            { title: 'The final empire', author: 'Brandon Sanderson', img: 'assets/3.jpg', isFav: true },
        ],
      }
    },
    methods: {
      toggleShowBooks() {
        this.showBooks =  !this.showBooks
      },
    }
})

app.mount('#app')
```

Add code

Edit file index.html

index.html

Add code

```html
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Learning Vue</title>
  <script src="https://unpkg.com/vue@3.0.0"></script>
  <link rel="stylesheet" href="style.css">
</head>
<body>

  <div id="app">
      <div v-if="showBooks">
        <ul>
            <li v-for="book in books" :class="{ fav: book.isFav }">
              <img :src="book.img" :alt="book.title">
              <h3>{{ book.title }}</h3>
              <p>{{ book.author }}</p>
            </li>
        </ul>
      </div>
      <div v-else>
        <p>Click the button below to show books</p>
      </div>
      <button @click="toggleShowBooks">
        <span v-if="showBooks">Hide books</span>
        <span v-else>Show books</span>
      </button>
      <div v-show="showBooks">currently showing books</div>
  </div>

  <script src="app.js"></script>
</body>
</html>
```
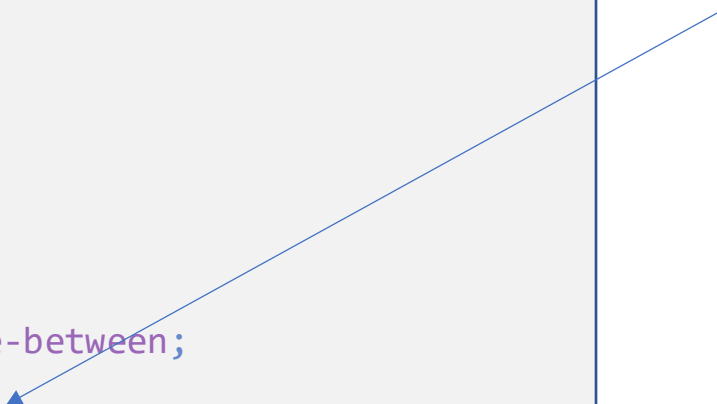
Edit file style.css

style.html

```css
body{
    background: #eee;
    max-width: 960px;
    margin: 20px auto;
}
p, h3, ul{
    margin: 0;
    padding: 0;
}
li{
    list-style-type: none;
    background: #fff;
    margin: 20px auto;
    padding: 10px 20px;
    border-radius: 10px;
    display: flex;
    align-items: center;
    justify-content: space-between;
}
li.fav{
    background: #ff9ed2;
    color: white;
}
```
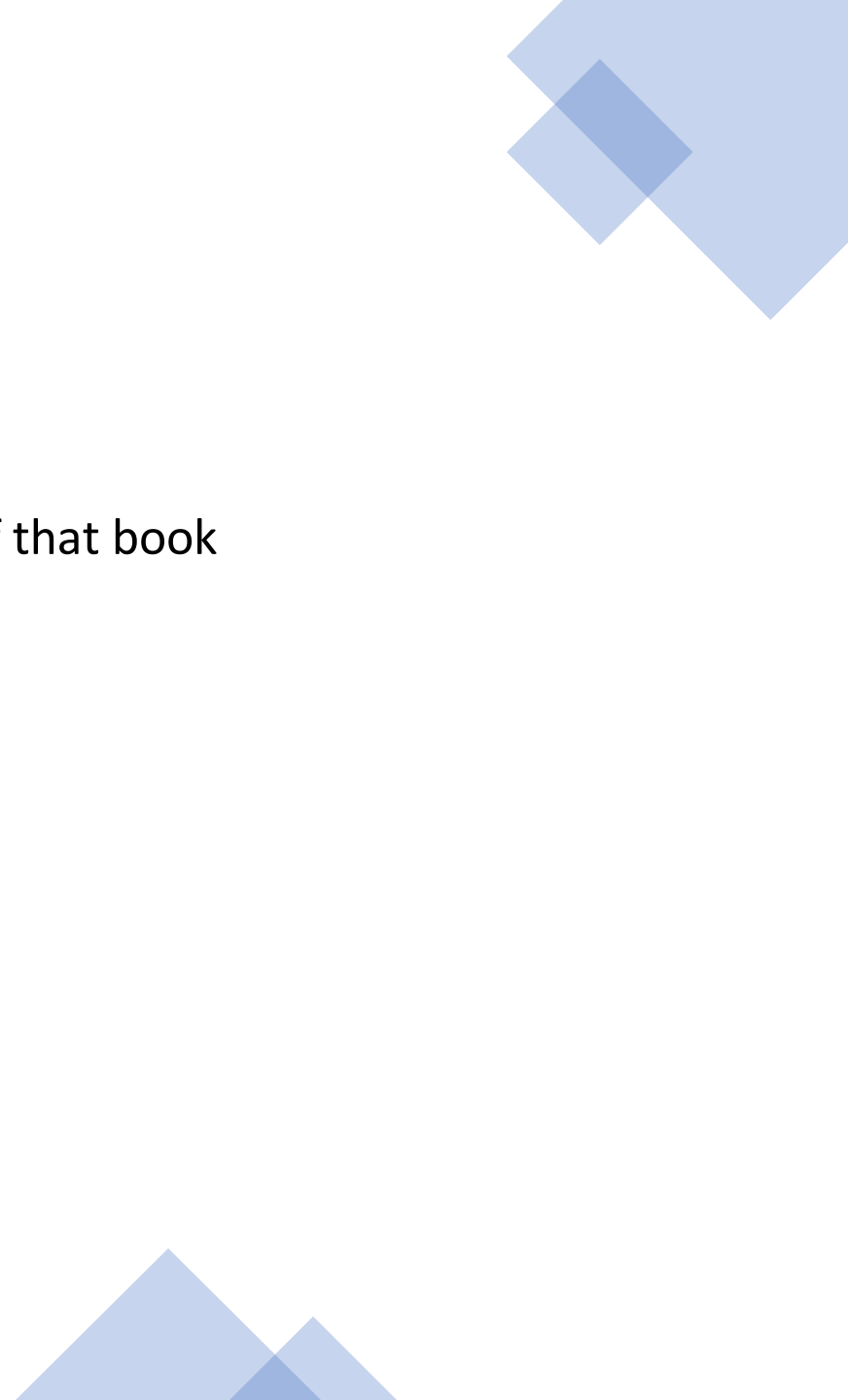
Add
code

Challenge

Toggling Favs

Challenge - Add to Favs

- attach a click event to each li tag (for each book)
- when a user clicks an li, toggle the 'isFav' property of that book

Edit file app.js

app.js

```javascript
const app = Vue.createApp({
    data() {
      return {
        showBooks: true,
        books: [
            { title: 'Name of the wind', author: 'Patrick Rothfuss', img: 'assets/1.jpg', isFav: true },
            { title: 'The way of kings', author: 'Brandon Sanderson', img: 'assets/2.jpg', isFav: false },
            { title: 'The final empire', author: 'Brandon Sanderson', img: 'assets/3.jpg', isFav: true },
        ],
      }
    },
    methods: {
      toggleShowBooks() {
        this.showBooks =  !this.showBooks
      },

      toggleFav(book) {
        book.isFav = !book.isFav
      }

    }
})

app.mount('#app')
```

Add code

Edit file index.html

index.html

Add code

```html
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Learning Vue</title>
  <script src="https://unpkg.com/vue@3.0.0"></script>
  <link rel="stylesheet" href="style.css">
</head>
<body>

  <div id="app">
    <div v-if="showBooks">
      <ul>
        <li v-for="book in books" :class="{ fav: book.isFav }" @click ="toggleFav(book)">
          <img :src="book.img" :alt="book.title">
          <h3>{{ book.title }}</h3>
          <p>{{ book.author }}</p>
        </li>
      </ul>
    </div>
    <div v-else>
      <p>Click the button below to show books</p>
    </div>
    <button @click="toggleShowBooks">
      <span v-if="showBooks">Hide books</span>
      <span v-else>Show books</span>
    </button>
  </div>

  <script src="app.js"></script>
</body>
</html>
```
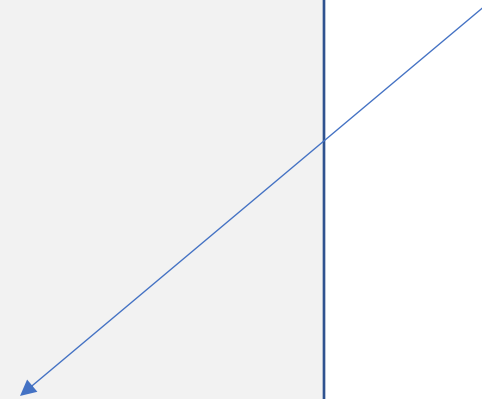
Computed Properties

Edit file app.js

app.js

```javascript
const app = Vue.createApp({
    data() {
      return {
        showBooks: true,
        books: [
            { title: 'Name of the wind', author: 'Patrick Rothfuss', img: 'assets/1.jpg', isFav: true },
            { title: 'The way of kings', author: 'Brandon Sanderson', img: 'assets/2.jpg', isFav: false },
            { title: 'The final empire', author: 'Brandon Sanderson', img: 'assets/3.jpg', isFav: true },
        ],
      }
    },
    methods: {
      toggleShowBooks() {
        this.showBooks =  !this.showBooks
      },
      toggleFav(book) {
        book.isFav = !book.isFav
      }
    },

      computed: {
        filteredBooks() {
          return this.books.filter(book => book.isFav)
        }
      }

})

app.mount('#app')
```

Add code

Edit file index.html

index.html

Add code

```html
<html lang="en">
<head>
...
</head>
<body>

  <div id="app">
      <div v-if="showBooks">
        <ul>
            <li v-for="book in books" :class="{ fav: book.isFav }" @click ="toggleFav(book)">
              <img :src="book.img" :alt="book.title">
              <h3>{{ book.title }}</h3>
              <p>{{ book.author }}</p>
            </li>
        </ul>

          <p>Your favorits books:</p>
          <ul>
            <li v-for="book in filteredBooks">{{ book.title }} by {{ book.author }}</li>
          </ul>

      </div>
      <div v-else>
        <p>Click the button below to show books</p>
      </div>
      <button @click="toggleShowBooks">
        <span v-if="showBooks">Hide books</span>
        <span v-else>Show books</span>
      </button>
  </div>

  <script src="app.js"></script>
</body>
</html>
```