

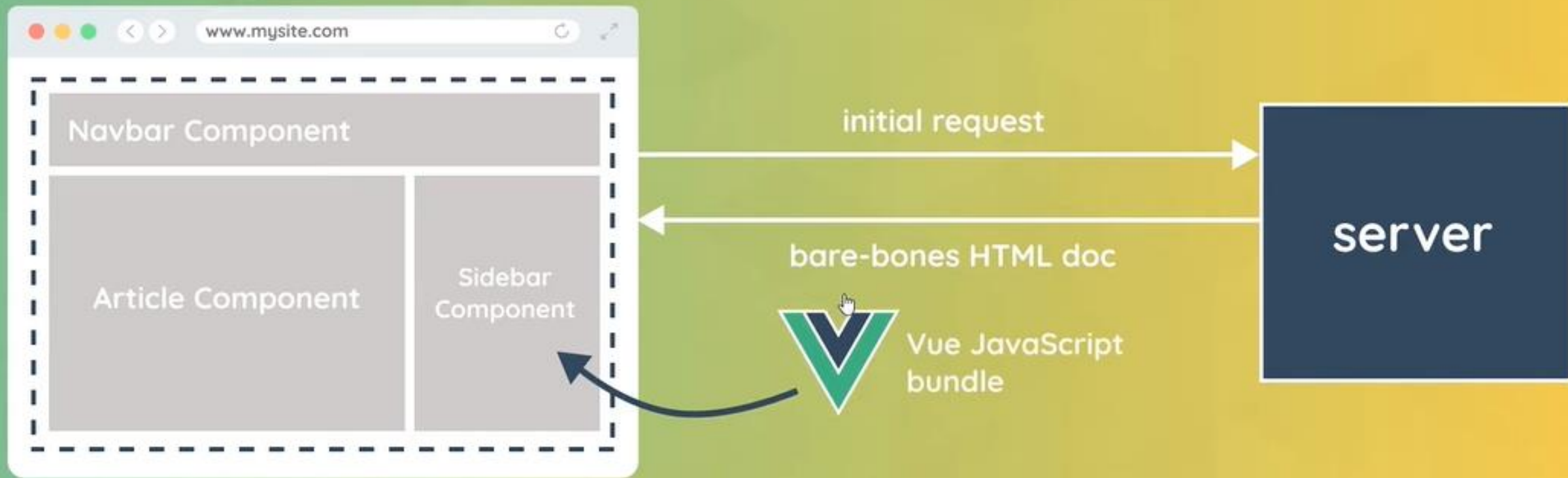


# The Vue CLI

In this Vue 3 tutorial we'll use the Vue CLI to boilerplate a larger Vue project for us, which will ultimately contain multiple components & pages. We'll talk about vue files, templates & template refs too.

Also we'll dive deeper into making larger Vue.js projects with the Vue CLI - including how to pass data (props) between components, how to emit custom events, how to work with slots & how to use Teleport - a brand new Vue 3 feature.

# Vue Websites



# Vue Websites



Use modern JavaScript features



Provides us with a live-reload dev server



Optimize our code for production

# Using the Vue CLI

# Install NodeJS



Node.js® is a JavaScript runtime built on Chrome's V8 JavaScript engine.

#BlackLivesMatter

Download for Windows (x64)

**12.19.0 LTS**

Recommended For Most Users

**15.0.1 Current**

Latest Features

[Other Downloads](#) | [Changelog](#) | [API Docs](#)

[Other Downloads](#) | [Changelog](#) | [API Docs](#)

Or have a look at the Long Term Support (LTS) schedule.


Open cmd and write next commands:

- `node -v`
- `npm install -g @vue/cli`
- `cd Documents`
- `cd TutsVue`
- `vue create modal-project`

Choose row  
'Manually select  
features'  
and click 'Enter'

cmd Command Prompt - vue create modal-project

```
Vue CLI v4.5.15
Failed to check for updates
? Please pick a preset:
  Default ([Vue 2] babel, eslint)
  Default (Vue 3) ([Vue 3] babel, eslint)
> Manually select features
```



Select

- Choose Vue version
- Babel

Click 'Enter'

Command Prompt - vue create modal-project

```
Vue CLI v4.5.15
Failed to check for updates
? Please pick a preset: Manually select features
? Check the features needed for your project:
>(*) Choose Vue version
  (*) Babel
  ( ) TypeScript
  ( ) Progressive Web App (PWA) Support
  ( ) Router
  ( ) Vuex
  ( ) CSS Pre-processors
  ( ) Linter / Formatter
  ( ) Unit Testing
  ( ) E2E Testing
```



Select 3.x

Click 'Enter'

Command Prompt - vue create modal-project

```
Vue CLI v4.5.15
Failed to check for updates
? Please pick a preset: Manually select features
? Check the features needed for your project: Choose Vue version, Babel
? Choose a version of Vue.js that you want to start the project with
  2.x
> 3.x
```

Select row  
'In dedicated config  
files'

Click 'Enter'

Command Prompt - vue create modal-project

Vue CLI v4.5.15

Failed to check for updates

? Please pick a preset: Manually select features

? Check the features needed for your project: Choose Vue version, Babel

? Choose a version of Vue.js that you want to start the project with 3.x

? Where do you prefer placing config for Babel, ESLint, etc.? (Use arrow keys)

> In dedicated config files

In package.json

Write 'n'

Click 'Enter'

```
Command Prompt - vue create modal-project

Vue CLI v4.5.15
Failed to check for updates
? Please pick a preset: Manually select features
? Check the features needed for your project: Choose Vue version, Babel
? Choose a version of Vue.js that you want to start the project with 3.x
? Where do you prefer placing config for Babel, ESLint, etc.? In dedicated config files
? Save this as a preset for future projects? (y/N) n
```

Select row  
'Use NPM'

Click 'Enter'

Command Prompt - vue create modal-project

Vue CLI v4.5.15

Failed to check for updates

? Please pick a preset: Manually select features

? Check the features needed for your project: Choose Vue version, Babel

? Choose a version of Vue.js that you want to start the project with 3.x

? Where do you prefer placing config for Babel, ESLint, etc.? In dedicated config files

? Save this as a preset for future projects? No

? Pick the package manager to use when installing dependencies:

Use Yarn

> Use NPM

write next commands in cmd:

- `cd modal-project`
- `code .`

write in the Terminal and go to <http://localhost:8081/>

- `npm run serve`



## Welcome to Your Vue.js App

For a guide and recipes on how to configure / customize this project,  
check out the [vue-cli documentation](#).

### Installed CLI Plugins

[babel](#)

### Essential Links

[Core Docs](#) [Forum](#) [Community Chat](#) [Twitter](#) [News](#)

### Ecosystem

[vue-router](#) [vuex](#) [vue-devtools](#) [vue-loader](#) [awesome-vue](#)

# Vue Files & Templates

## Edit file App.vue

## App.vue

```
<template>
  <!-- <h1>My First Vue App!</h1> -->
  <h1>{{ title }}</h1>
</template>
```

```
<script>
import HelloWorld from './components/HelloWorld.vue'

export default {
  name: 'App',
  data() {
    return {
      title: 'My First Vue App!'
    }
  }
}
</script>
```

```
<style>
#app {
  font-family: Avenir, Helvetica, Arial, sans-serif;
  -webkit-font-smoothing: antialiased;
  -moz-osx-font-smoothing: grayscale;
  text-align: center;
  color: #2c3e50;
  margin-top: 60px;
}
```

```
h1 {
  border-bottom: 1px solid #ddd;
  display: inline-block;
  padding-bottom: 10px;
}
```

```
</style>
```

Change  
code

Add  
code





localhost:8081



# My First Vue App!

---

# Template Refs

```
<template>
  <h1>{{ title }}</h1>

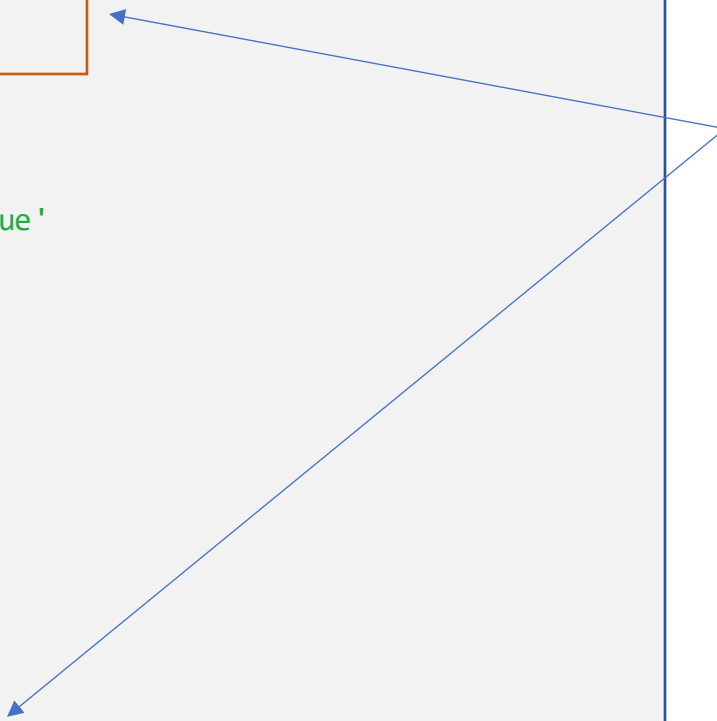
  <input type="text" ref="name">
  <button @click="handleClick">Click me</button>
</template>

<script>
import HelloWorld from './components/HelloWorld.vue'

export default {
  name: 'App',
  data() {
    return {
      title: 'My First Vue App!'
    }
  },
  methods: {
    handleClick(){
      console.log(this.$refs.name)
      this.$refs.name.classList.add('active')
      this.$refs.name.focus()
    }
  }
}
</script>

<style>
...
</style>
```

Add  
code



modal-project

localhost:8081

# My First Vue App!

Click me

Welcome

Elements

Console

Sources

Network

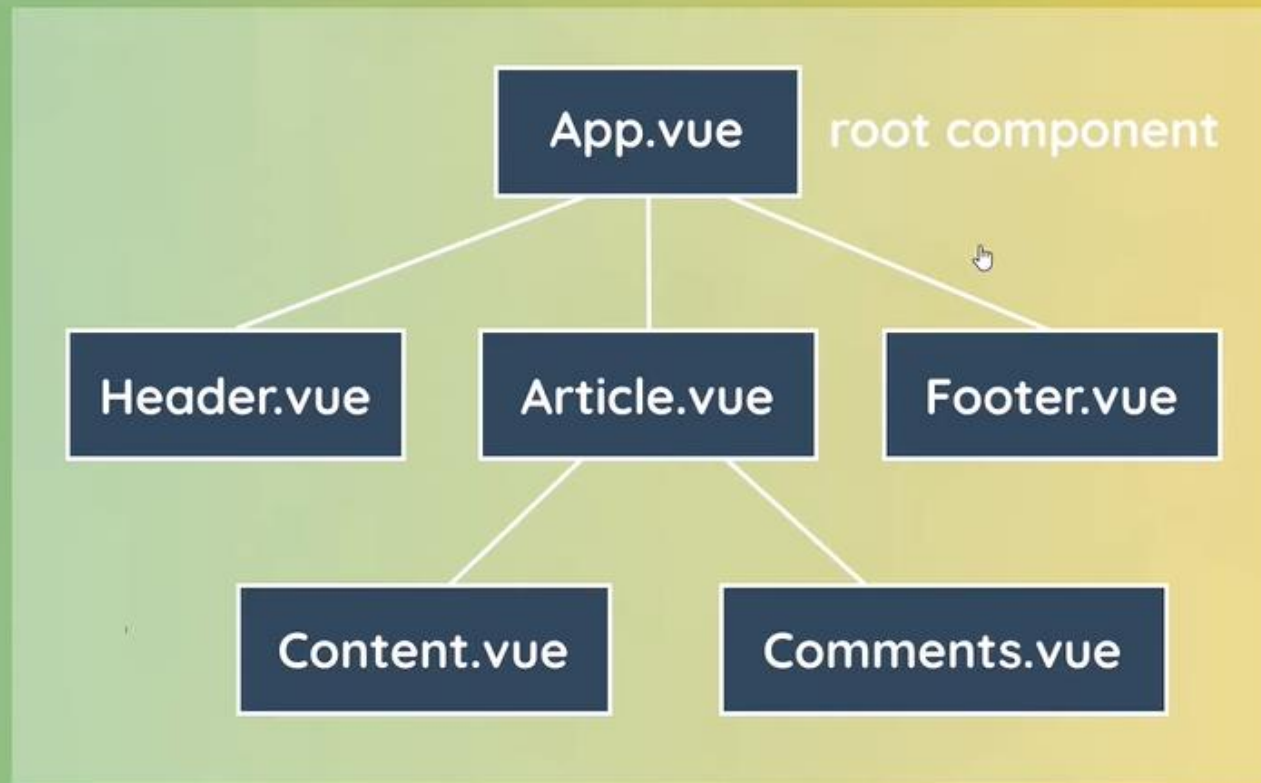
Performance

```
<!DOCTYPE html>
<html lang>
  <head>...</head>
  <body>
    ... <noscript>...</noscript> == $0
    <div id="app" data-v-app>
      <h1>My First Vue App!</h1>
      <input type="text" class="active">
      <button>Click me</button>
    </div>
    <!-- built files will be auto injected -->
    <script type="text/javascript" src="/js/chunk-vendors.js"></script>
    <script type="text/javascript" src="/js/app.js"></script>
  </body>
</html>
```

# Multiple Components

# Terminology

## Component Tree



Remove file **HelloWorld.vue** from folder **components**

Create file **Modal.vue** in the folder **components**

**Modal.vue**

```
<template>
  <div class="backdrop">
    <div class="modal">
      <p>modal content</p>
    </div>
  </div>
</template>

<style>
  .modal {
    width: 400px;
    padding: 20px;
    margin: 100px auto;
    background: white;
    border-radius: 10px;
  }
  .backdrop {
    top: 0;
    position: fixed;
    background: rgba(0,0,0,0.5);
    width: 100%;
    height: 100%;
  }
</style>
```

Modify file App.vue

App.vue

```
<template>
  <h1>{{ title }}</h1>
```

```
  <Modal />
```

```
</template>
```

```
<script>
```

```
import Modal from './components/Modal.vue'
```

```
export default {
  name: 'App',
```

```
  components: { Modal },
```

```
  data() {
    return {
      title: 'My First Vue App!'
    }
  }
}
```

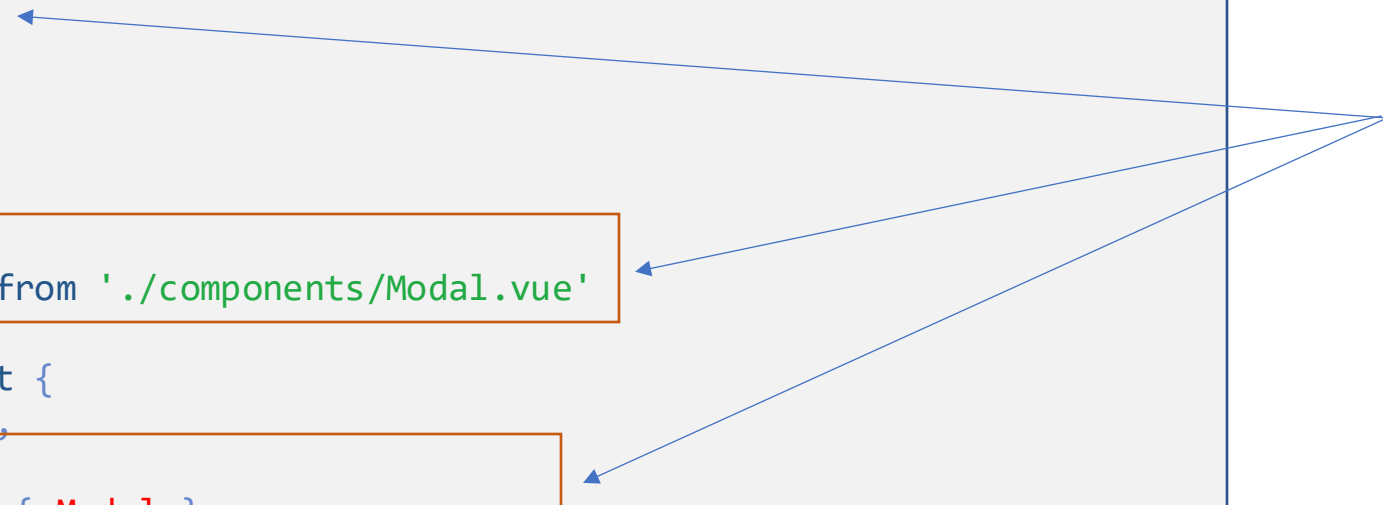
```
</script>
```

```
<style>
```

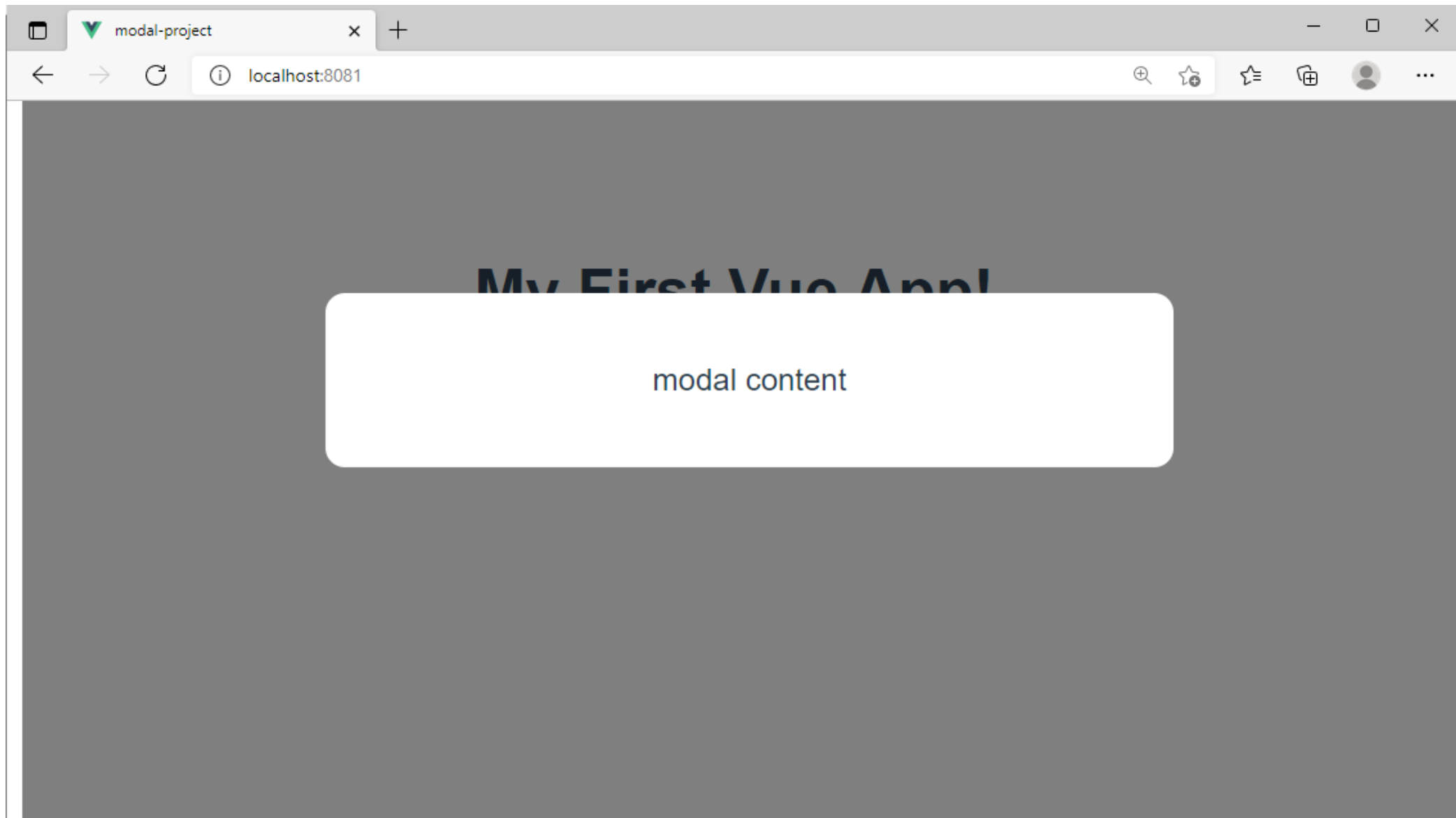
```
...
```

```
</style>
```

Add  
code







# Scoped & global CSS

## Modify file **Modal.vue** in the folder **components**

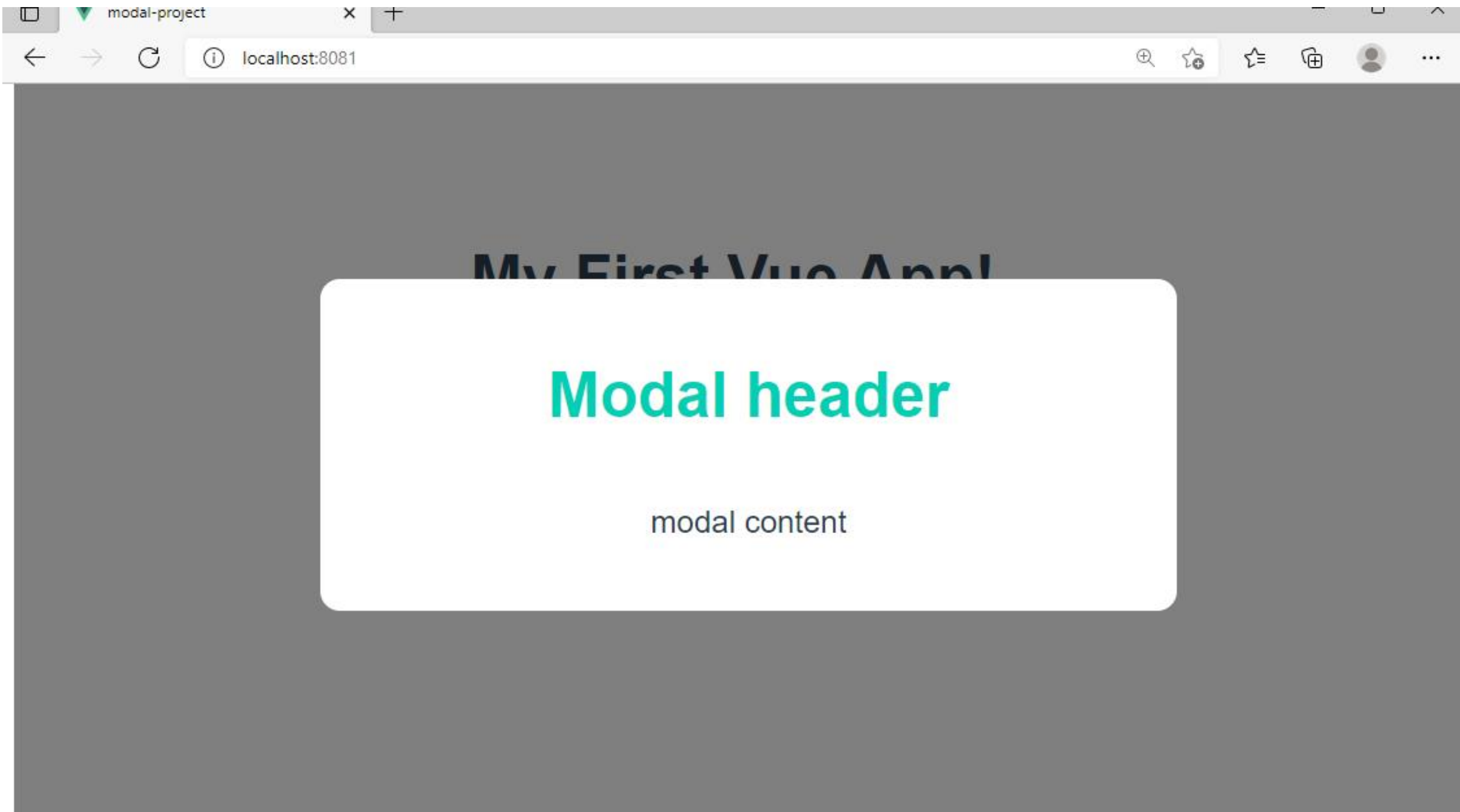
**Modal.vue**

```
<template>
  <div class="backdrop">
    <div class="modal">
      <h1>Modal header</h1>
      <p>modal content</p>
    </div>
  </div>
</template>
```

```
<style>
  .modal {
    width: 400px;
    padding: 20px;
    margin: 100px auto;
    background: white;
    border-radius: 10px;
  }
  .backdrop {
    top: 0;
    position: fixed;
    background: rgba(0,0,0,0.5);
    width: 100%;
    height: 100%;
  }
</style>
```

```
.modal h1 {
  color: #03cfb4;
  border: none;
  padding: 0;
}
```

Add  
code



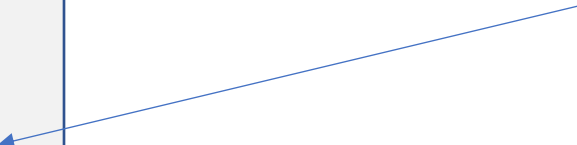
Create file **global.css** in the folder **assets**

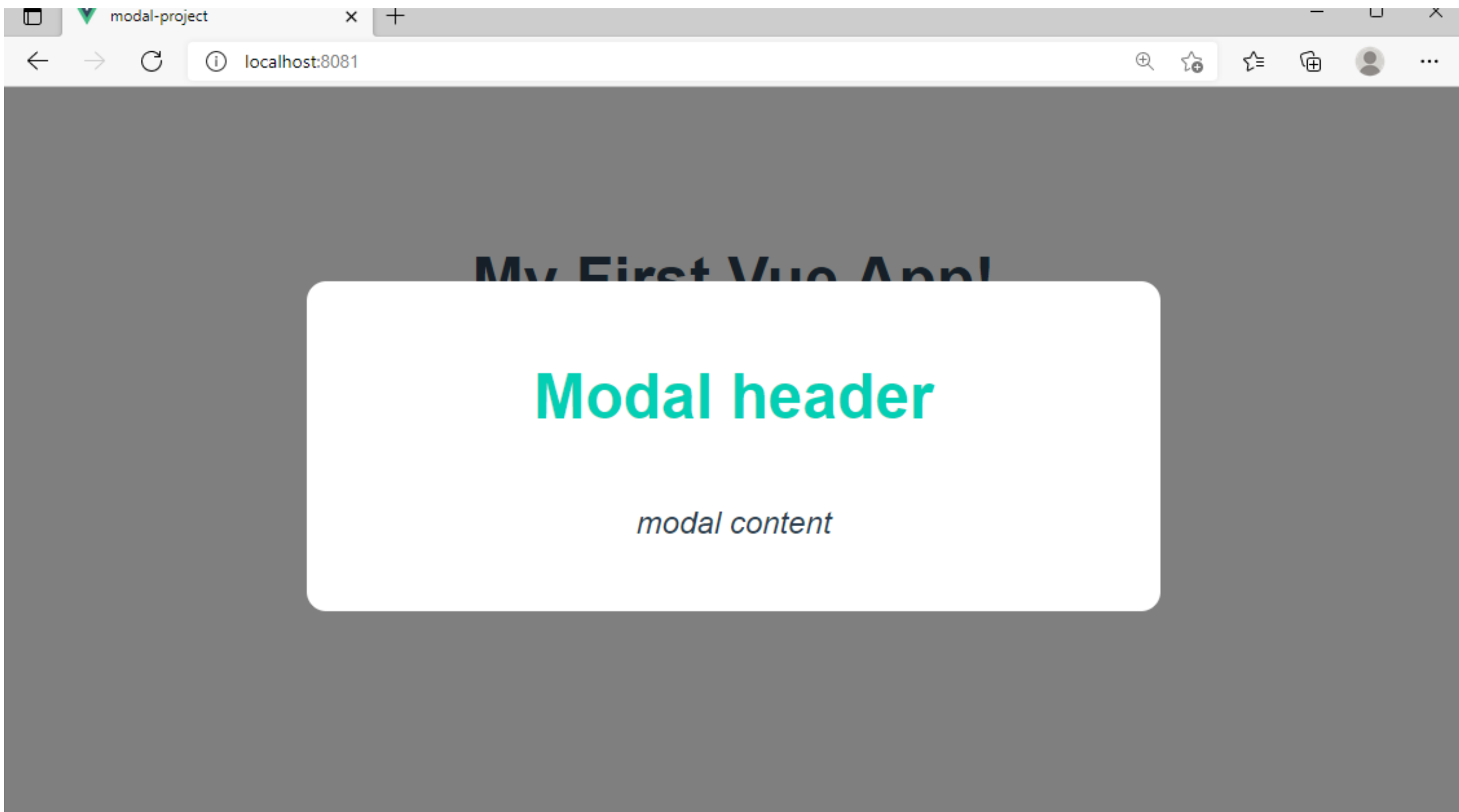
```
body {  
  margin: 0;  
}  
p {  
  font-style: italic;  
}
```

Modify file **main.js** in the folder **assets**

```
import { createApp } from 'vue'  
import App from './App.vue'  
  
// global styles  
import './assets/global.css'  
  
createApp(App).mount('#app')
```

Add  
code





## Modify file **Modal.vue** in the folder **components**

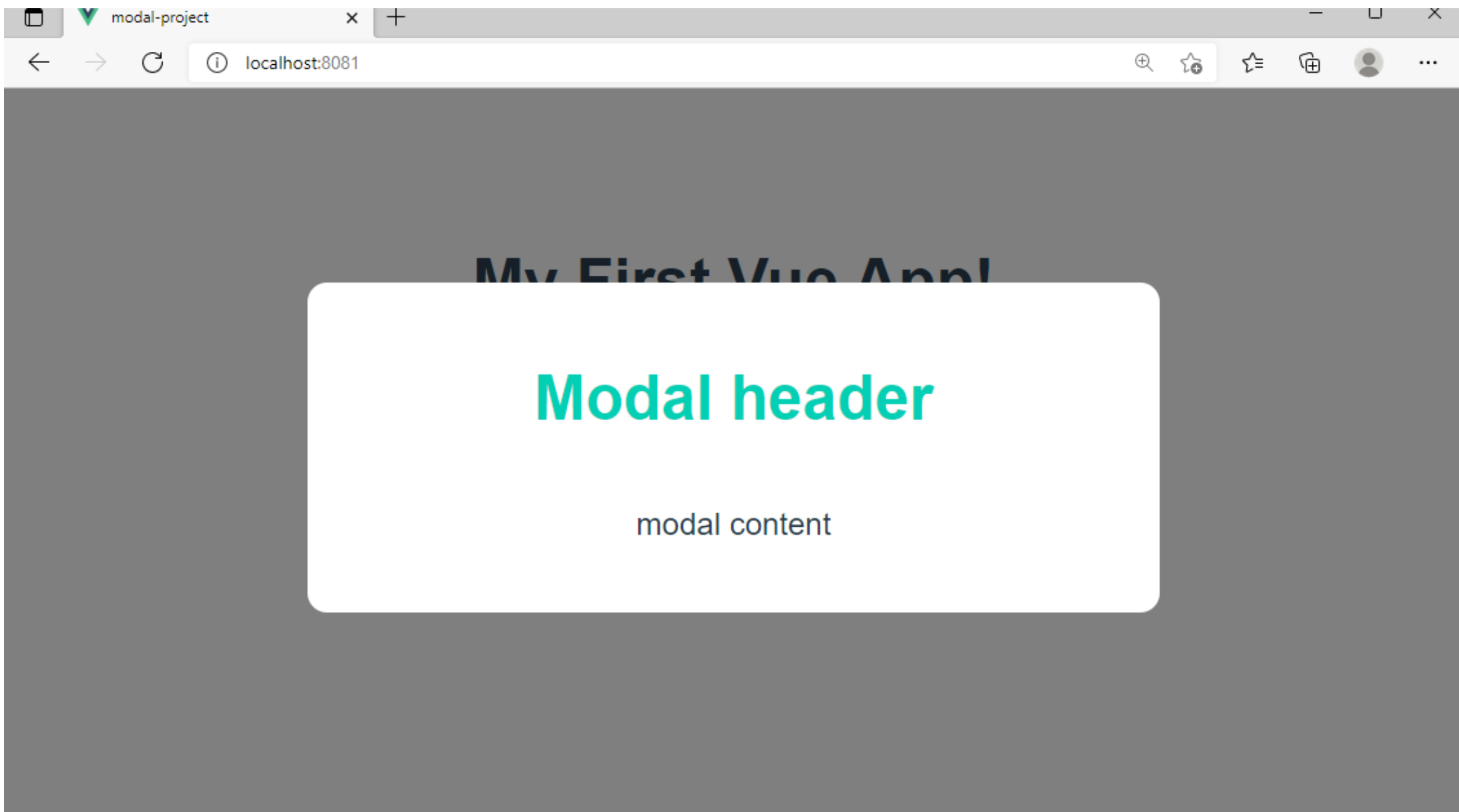
### Modal.vue

```
<template>
  <div class="backdrop">
    <div class="modal">
      <h1>Modal header</h1>
      <p>modal content</p>
    </div>
  </div>
</template>

<style>
  .modal {
    width: 400px;
    padding: 20px;
    margin: 100px auto;
    background: white;
    border-radius: 10px;
  }
  .backdrop {
    top: 0;
    position: fixed;
    background: rgba(0,0,0,0.5);
    width: 100%;
    height: 100%;
  }
  .modal h1 {
    color: #03cfb4;
    border: none;
    padding: 0;
  }
  .modal p {
    font-style: normal;
  }
</style>
```

Add  
code









**Props**

## Modify file **App.vue**

**App.vue**

```
<template>
  <h1>{{ title }}</h1>

  <p>Welcome...</p>
  <!-- <Modal heading="Sign up for the Giveaway!" text="Grab your ninja swag for half price!" /> -->
  <Modal :heading="heading" :text="text" theme="sale" />

</template>

<script>

import Modal from './components/Modal.vue'

export default {
  name: 'App',

  components: { Modal },

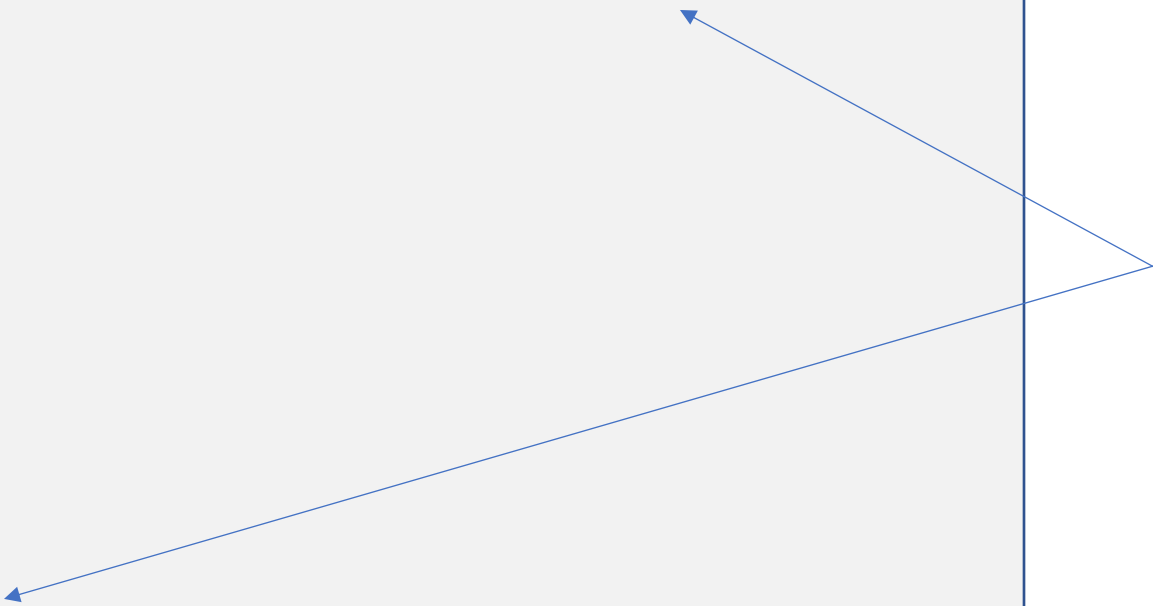
  data() {
    return {
      title: 'My First Vue App!',

      heading: 'Sign up for the Giveaway!',
      text: 'Grab your swag for half price!'

    }
  }
}
</script>

<style>...</style>
```

Add  
code

Two blue arrows originate from the text 'Add code'. One arrow points to the top of the orange-bordered box in the template section, and the other points to the bottom of the orange-bordered box in the data section.

Modify file **Modal.vue**

**Modal.vue**

```
<template>
  <div class="backdrop">

    <div class="modal" :class="{ sale: theme === 'sale' }">
      <h1>{{ heading }}</h1>
      <p>{{ text }}</p>
    </div>

  </div>
</template>

<script>
export default {
  props: ['heading', 'text', 'theme']
}
</script>

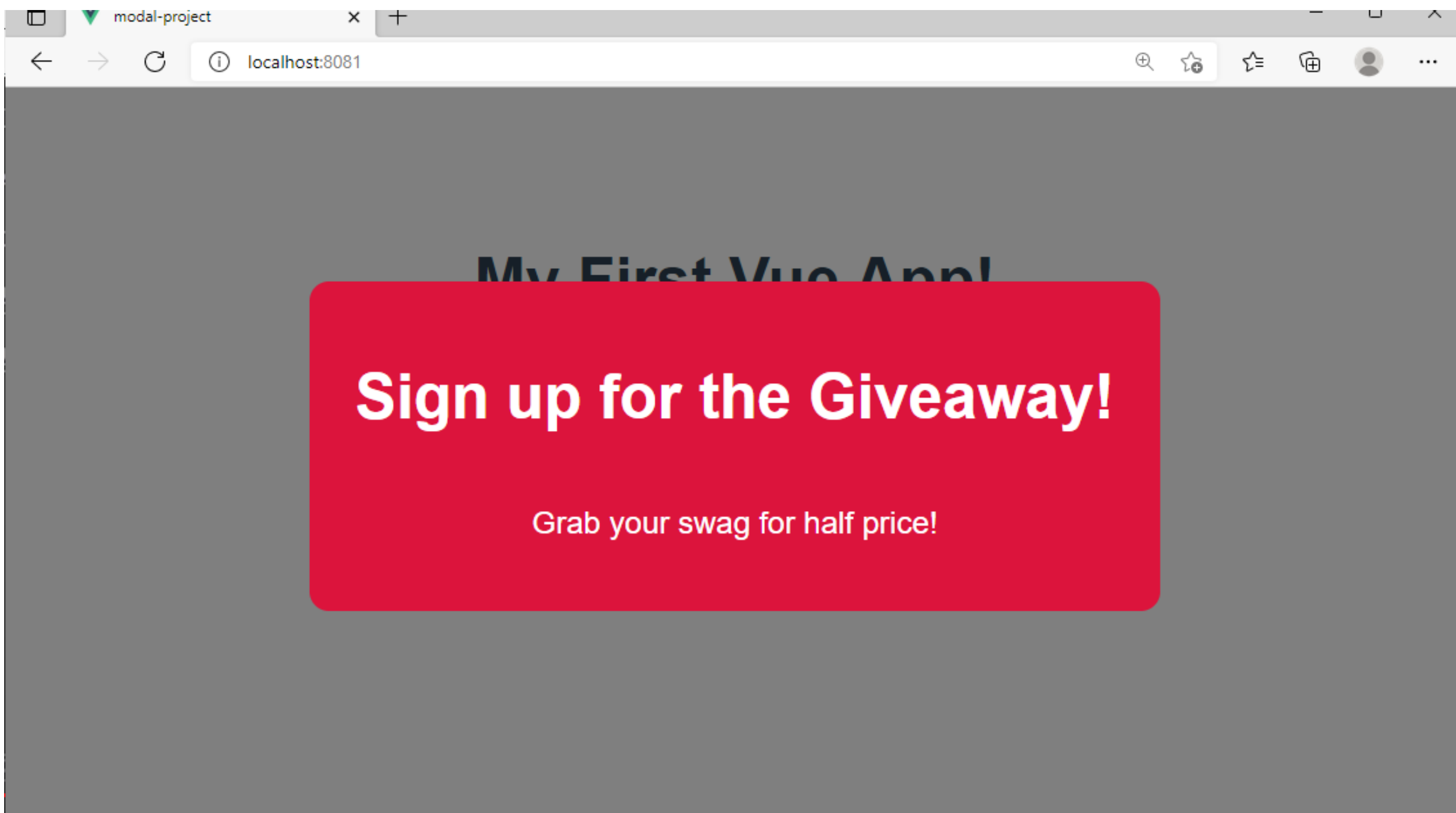
<style>
.modal {...}
.backdrop {...}
.modal h1 {...}
.modal p {...}

/* sale styles */
.modal.sale {
  background: crimson;
  color: white;
}
.modal.sale h1 {
  color: white;
}

</style>
```

Modify  
code

Add  
code



# **Emitting Custom Events**

## Modify file App.vue

## App.vue

```
<template>
  <h1>{{ title }}</h1>
  <p>Welcome...</p>

  <div v-if="showModal">
    <Modal :heading="heading" :text="text" theme="sale" @close="toggleModal" />
  </div>
  <button @click="toggleModal">open modal</button>
</template>

<script>

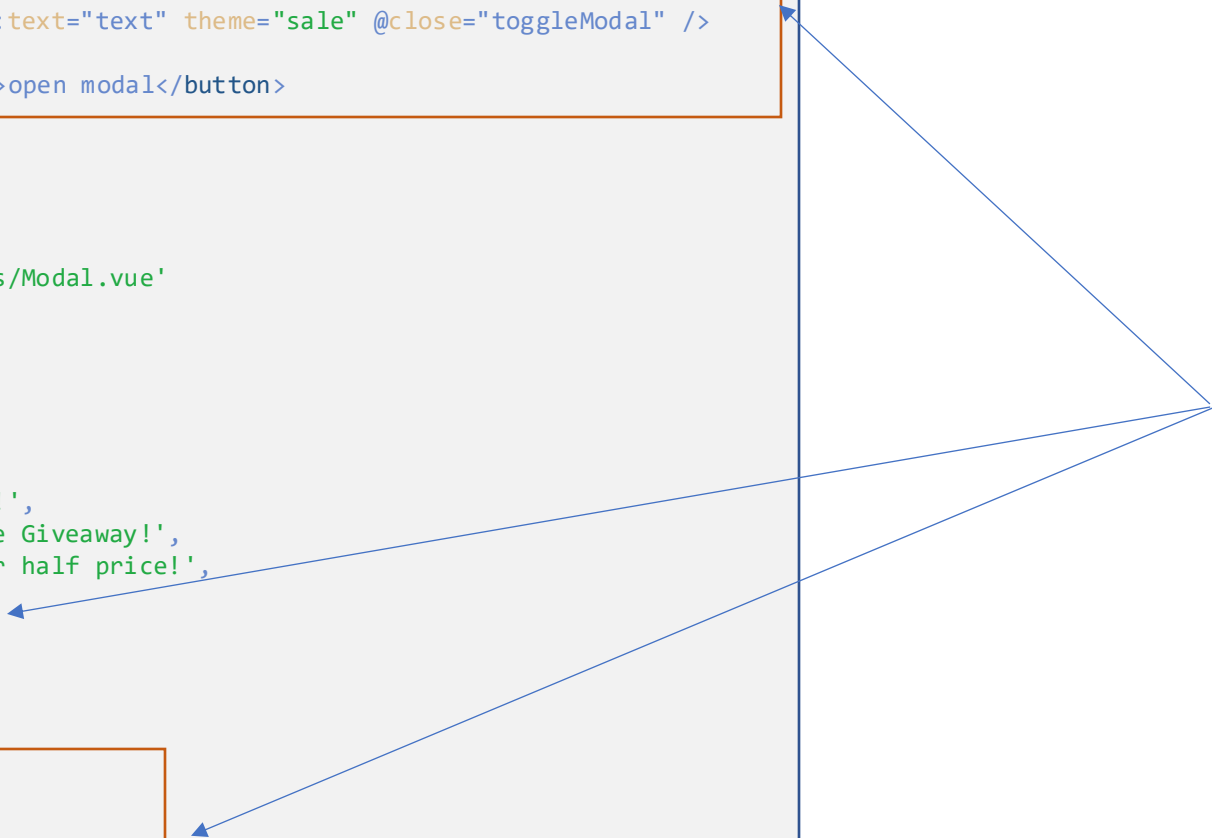
import Modal from './components/Modal.vue'

export default {
  name: 'App',
  components: { Modal },
  data() {
    return {
      title: 'My First Vue App!',
      heading: 'Sign up for the Giveaway!',
      text: 'Grab your swag for half price!',
      showModal: false,

      methods: {
        toggleModal() {
          this.showModal = !this.showModal
        }
      }
    }
  },
}
</script>

<style>...</style>
```

Add  
code



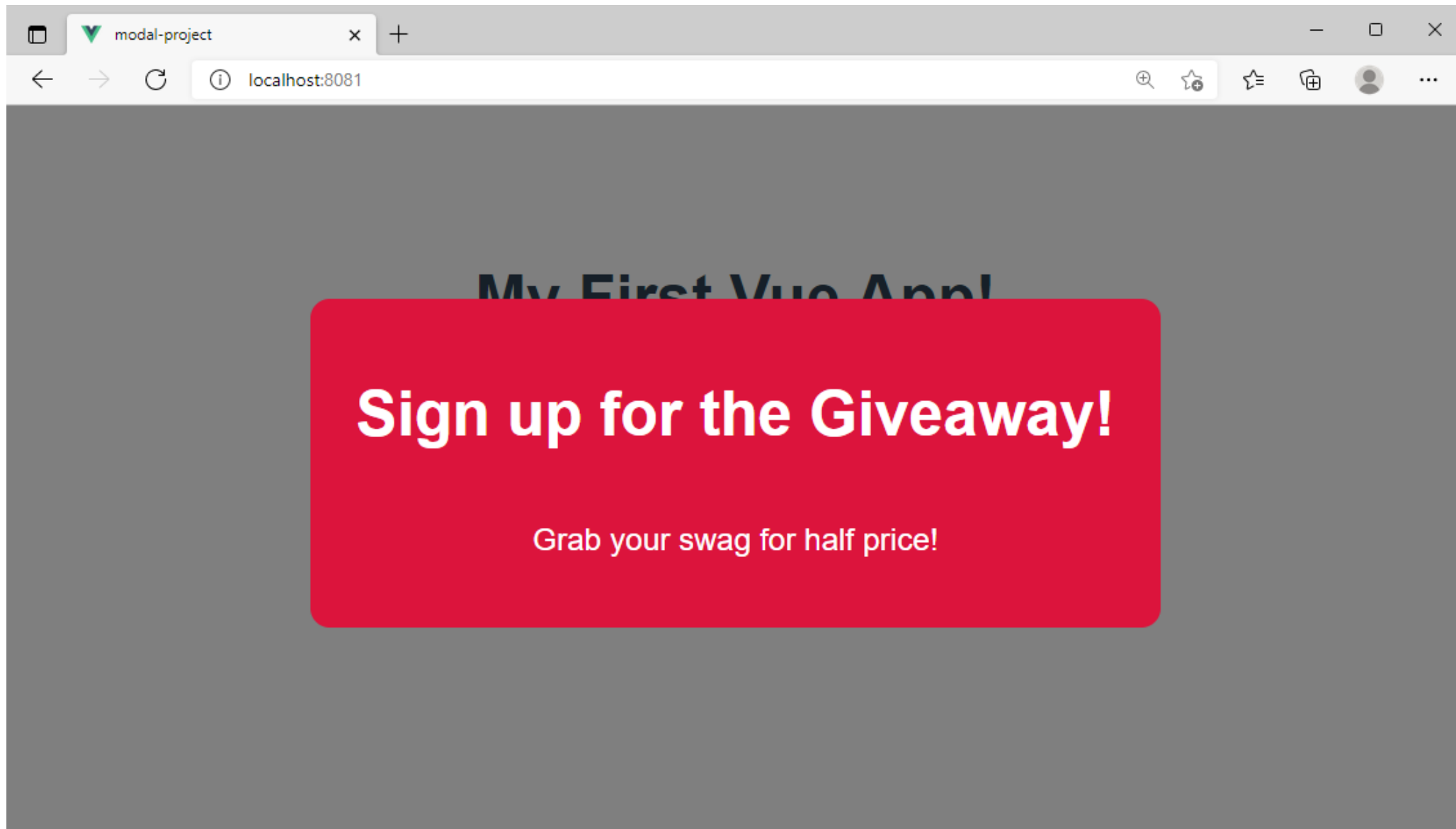


# My First Vue App!

---

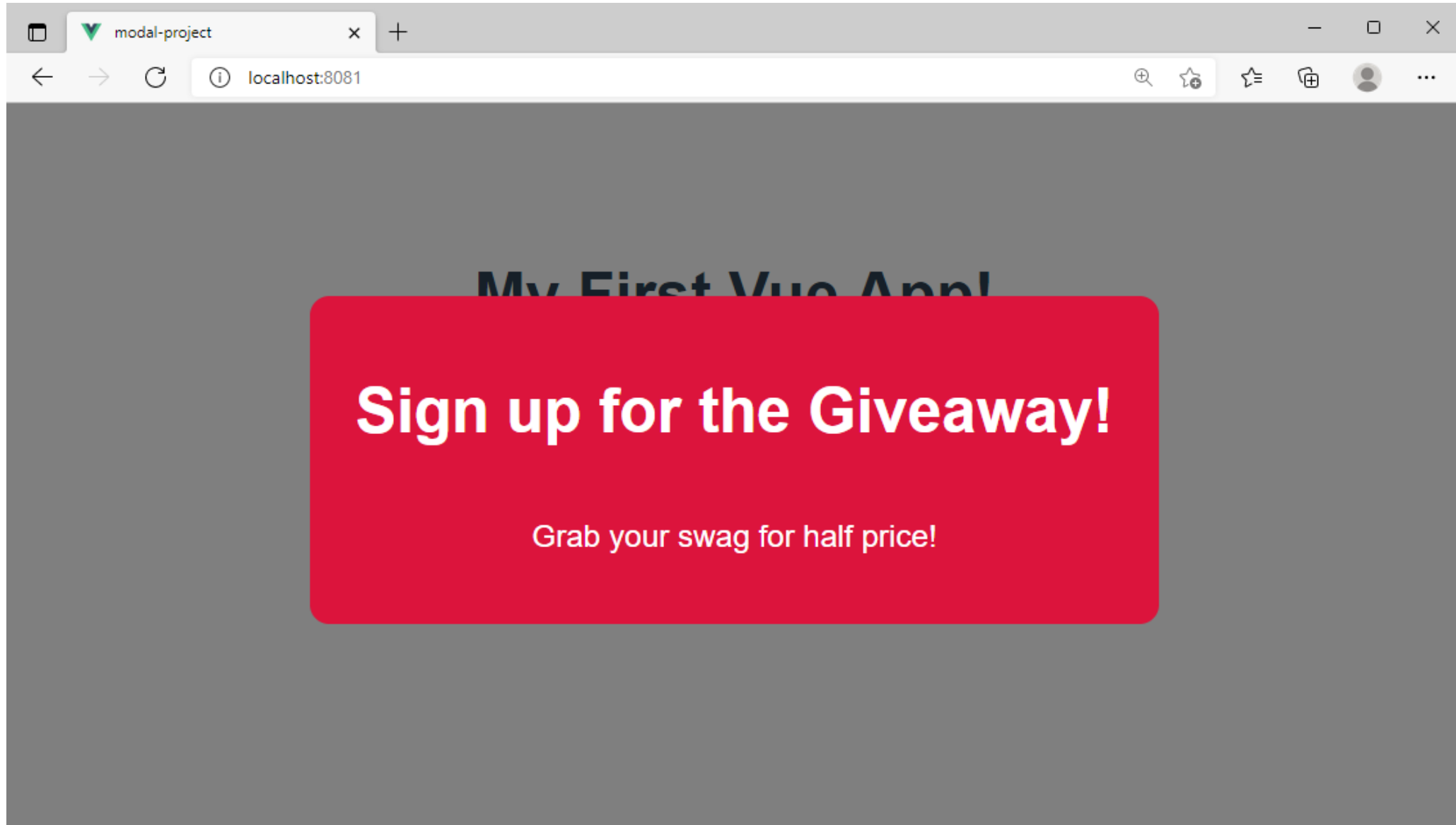
*Welcome...*

open modal





Click on the window



## Modify file **App.vue**

## App.vue

```
<template>
```

```
<div class="backdrop" @click="closeModal">
```

```
  <div class="modal" :class="{ sale: theme === 'sale' }">
```

```
    <h1>{{ heading }}</h1>
```

```
    <p>{{ text }}</p>
```

```
  </div>
```

```
</div>
```

```
</template>
```

```
<script>
```

```
export default {
```

```
  props: ['heading', 'text', 'theme'],
```

```
  methods: {
```

```
    closeModal() {
```

```
      this.$emit('close')
```

```
    }
```

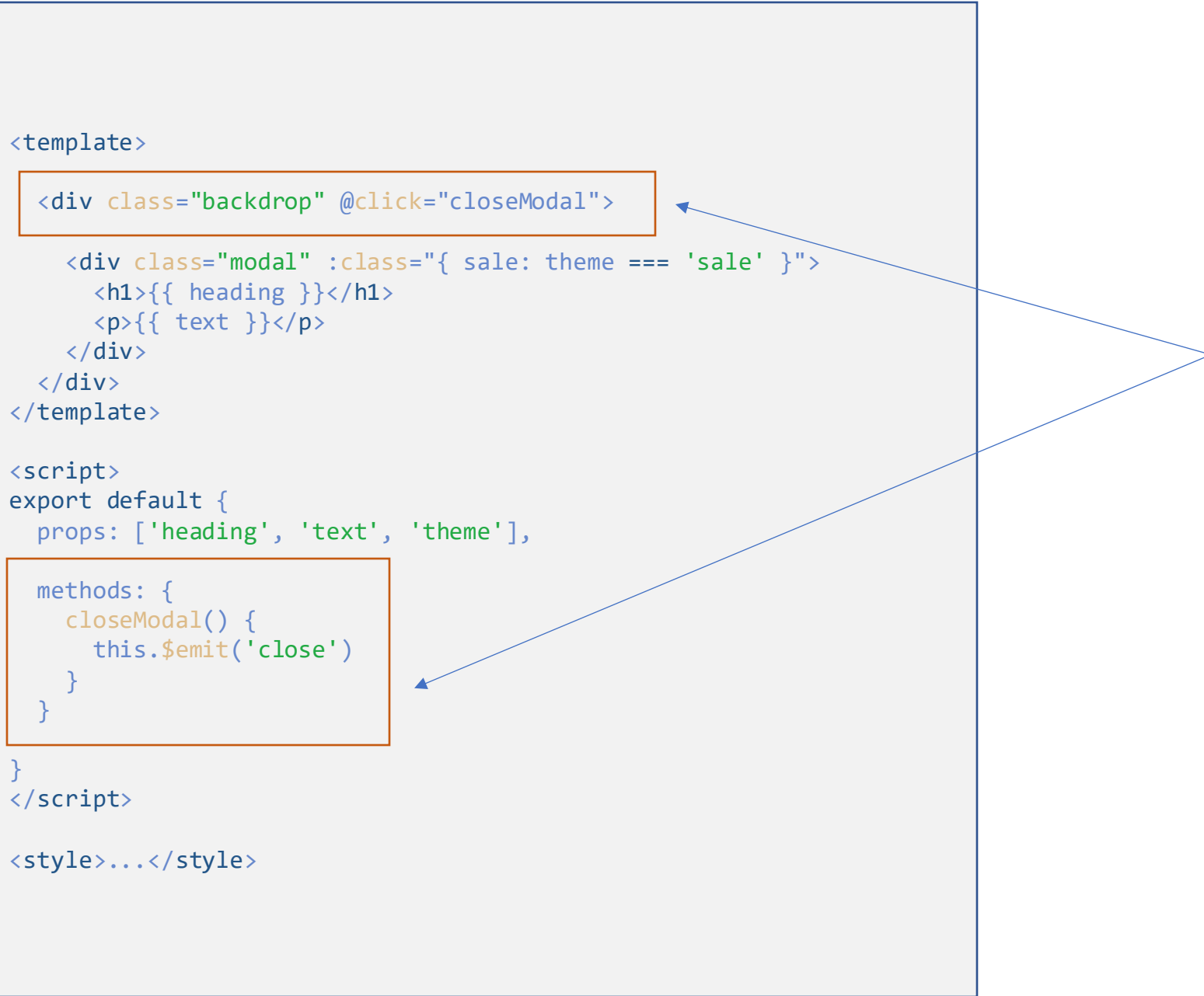
```
  }
```

```
}
```

```
</script>
```

```
<style>...</style>
```

Add  
code

A diagram illustrating code additions to the App.vue file. Two blue arrows originate from the text 'Add code' on the right. One arrow points to the opening tag of the 'backdrop' div in the template section, and the other points to the 'closeModal' method in the script section. Both of these code blocks are highlighted with orange borders.

# Click Event Modifiers

## Modify file App.vue

## App.vue

```
<template>
  <h1>{{ title }}</h1>
  <p>Welcome...</p>
  <div v-if="showModal">
    <Modal :heading="heading" :text="text" theme="sale" @close="toggleModal" />
  </div>

  <button @click.right = "toggleModal">open modal</button>
</template>

<script>

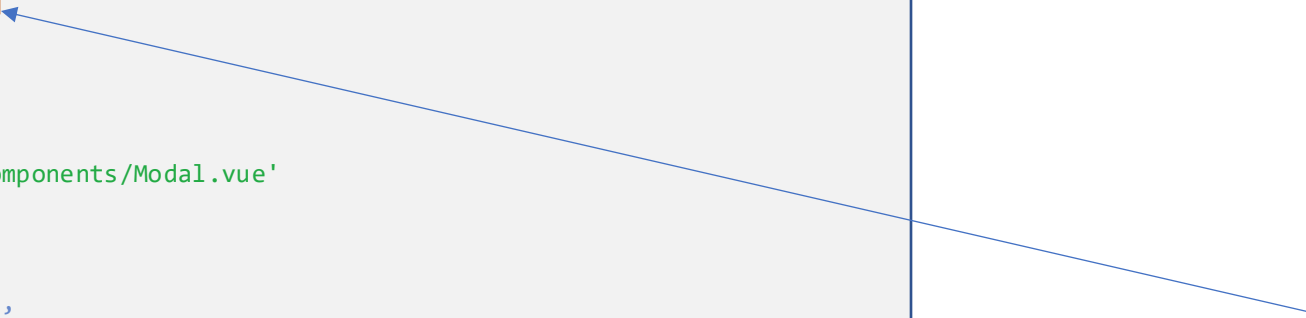
import Modal from './components/Modal.vue'

export default {
  name: 'App',
  components: { Modal },
  data() {
    return {
      title: 'My First Vue App!',
      heading: 'Sign up for the Giveaway!',
      text: 'Grab your swag for half price!',
      showModal: false,
    }
  },

  methods: {
    toggleModal() {
      this.showModal = !this.showModal
    }
  }
}
</script>

<style>
...
</style>
```

Add  
code





# My First Vue App!

Welcome...

open modal

Right Click



# My First Vue App!

**Sign up for the Giveaway!**

Grab your swag for half price!

## Modify file App.vue

## App.vue

```
<template>
  <h1>{{ title }}</h1>
  <p>Welcome...</p>
  <div v-if="showModal">
    <Modal :heading="heading" :text="text" theme="sale" @close="toggleModal" />
  </div>

  <button @click.alt = "toggleModal">open modal</button>
</template>

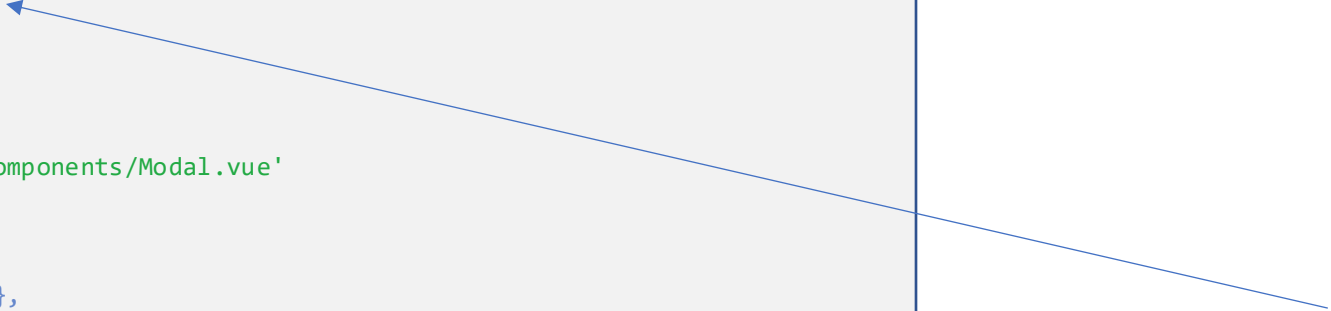
<script>

import Modal from './components/Modal.vue'

export default {
  name: 'App',
  components: { Modal },
  data() {
    return {
      title: 'My First Vue App!',
      heading: 'Sign up for the Giveaway!',
      text: 'Grab your swag for half price!',
      showModal: false,
    }
  },
  methods: {
    toggleModal() {
      this.showModal = !this.showModal
    }
  }
}
</script>

<style>
...
</style>
```

Modify  
code



## Modify file **Modal.vue**

### Modal.vue

```
<template>

  <div class="backdrop" @click.self="closeModal">

    <div class="modal" :class="{ sale: theme === 'sale' }">
      <h1>{{ heading }}</h1>
      <p>{{ text }}</p>
    </div>
  </div>
</template>

<script>
export default {
  props: ['heading', 'text', 'theme'],

  methods: {
    closeModal() {
      this.$emit('close')
    }
  }
}
</script>

<style>...</style>
```

Add  
code



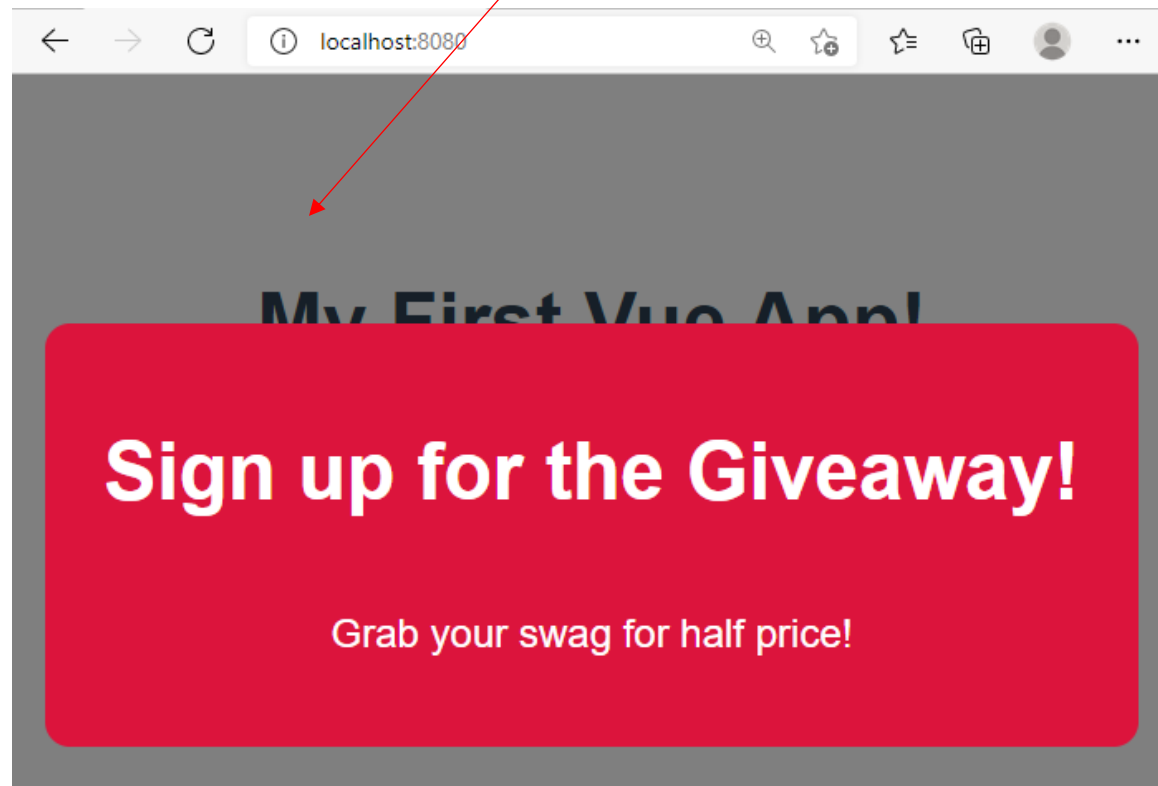
# My First Vue App!

Welcome...

open modal

Left Click + Alt

Click on the grey area of the window to close message





## Modify file App.vue

## App.vue

```
<template>
  <h1>{{ title }}</h1>
  <p>Welcome...</p>
  <div v-if="showModal">
    <Modal :heading="heading" :text="text" theme="sale" @close="toggleModal" />
  </div>

  <button @click.right = "toggleModal">open modal</button>
</template>

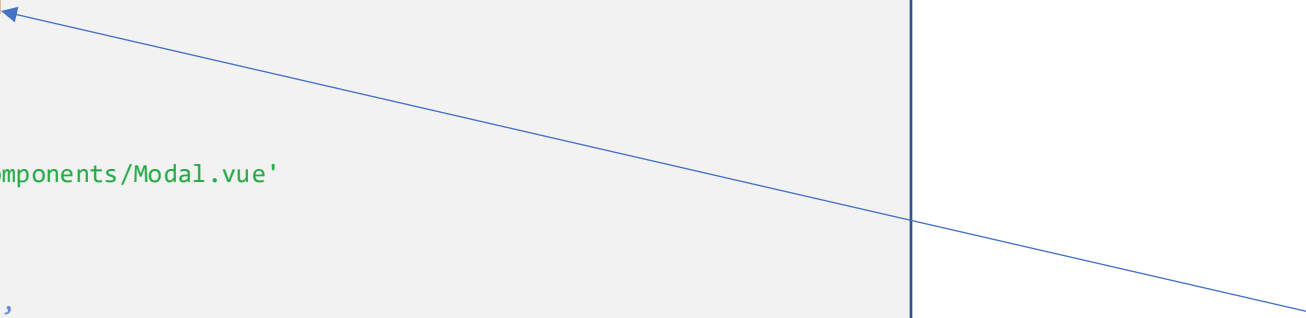
<script>

import Modal from './components/Modal.vue'

export default {
  name: 'App',
  components: { Modal },
  data() {
    return {
      title: 'My First Vue App!',
      heading: 'Sign up for the Giveaway!',
      text: 'Grab your swag for half price!',
      showModal: false,
    }
  },
  methods: {
    toggleModal() {
      this.showModal = !this.showModal
    }
  }
}
</script>

<style>
...
</style>
```

Add  
code





# My First Vue App!

Welcome...

open modal

Right Click



# My First Vue App!

**Sign up for the Giveaway!**

Grab your swag for half price!

## Modify file App.vue

## App.vue

```
<template>
  <h1>{{ title }}</h1>
  <p>Welcome...</p>
  <div v-if="showModal">
    <Modal :heading="heading" :text="text" theme="sale" @close="toggleModal" />
  </div>

  <button @click.alt = "toggleModal">open modal</button>
</template>

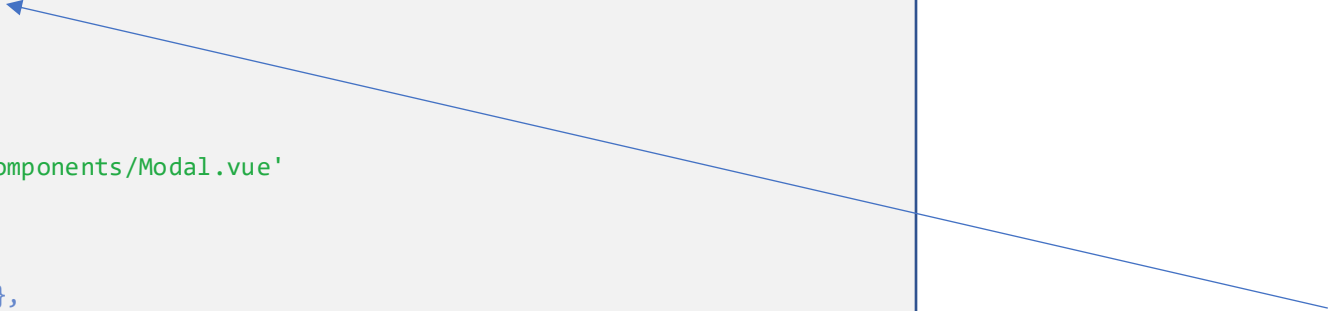
<script>

import Modal from './components/Modal.vue'

export default {
  name: 'App',
  components: { Modal },
  data() {
    return {
      title: 'My First Vue App!',
      heading: 'Sign up for the Giveaway!',
      text: 'Grab your swag for half price!',
      showModal: false,
    }
  },
  methods: {
    toggleModal() {
      this.showModal = !this.showModal
    }
  }
}
</script>

<style>
...
</style>
```

Modify  
code



## Modify file **Modal.vue**

### Modal.vue

```
<template>

  <div class="backdrop" @click.self="closeModal">

    <div class="modal" :class="{ sale: theme === 'sale' }">
      <h1>{{ heading }}</h1>
      <p>{{ text }}</p>
    </div>
  </div>
</template>

<script>
export default {
  props: ['heading', 'text', 'theme'],

  methods: {
    closeModal() {
      this.$emit('close')
    }
  }
}
</script>

<style>...</style>
```

Add  
code



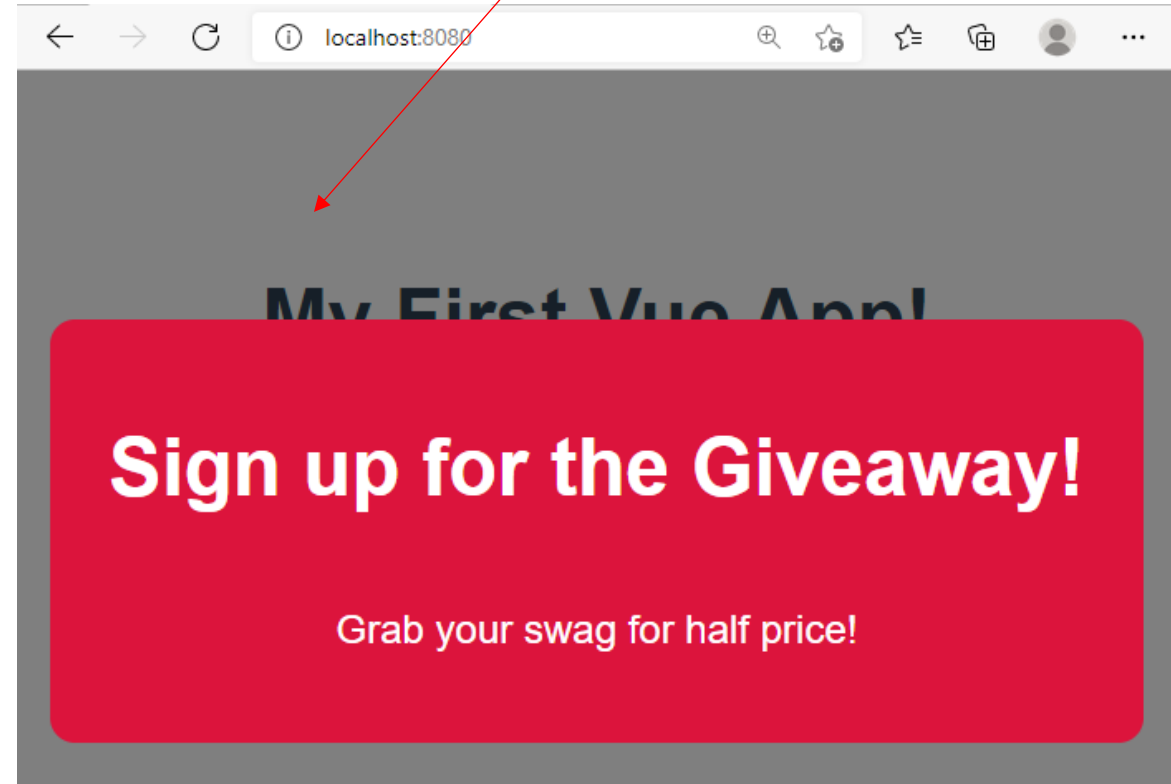
# My First Vue App!

Welcome...

open modal

Left Click + Alt

Click on the grey area of the window to close message



**Challenge**

**Creating Another Modal**

# Challenge

1

create an extra  
button to open a  
different modal

2

use the same modal  
component but pass  
in a different  
template (slot)

3

use a different  
method (e.g.  
toggleModalTwo)  
and data (e.g.  
showModalTwo)

## Modify file App.vue

## App.vue

```
<template>
  <h1>{{ title }}</h1>
  <p>Welcome...</p>
  <div v-if="showModal">

    <Modal theme="" @close="toggleModal">
      <template v-slot:links>
        <a href="#">Sign Up now</a>
        <a href="#">More Info</a>
      </template>
      <h1>Sign up for the Giveaway!</h1>
      <p>Grab your swag for half price!</p>
    </Modal>

  </div>

  <button @click.alt="toggleModal">open modal</button>
  <button @click="toggleModalTwo">open challenge modal</button>
</template>

<script>
...
</script>

<style>
...
</style>
```

Add  
code

1

create an extra  
button to open a  
different modal



## Modify file **App.vue**

## App.vue

```
<template>
  <h1>{{ title }}</h1>
  <p>Welcome...</p>
  <div v-if="showModal">
    <Modal theme="" @close="toggleModal">
      <template v-slot:links>
        <a href="#">Sign Up now</a>
        <a href="#">More Info</a>
      </template>
      <h1>Sign up for the Giveaway!</h1>
      <p>Grab your swag for half price!</p>
    </Modal>
  </div>

  <div v-if="showModalTwo">
    <Modal @close="toggleModalTwo">
      <h1>Sign up to the Newsletter</h1>
      <p>For updates and promo codes!</p>
    </Modal>
  </div>

  <button @click.alt="toggleModal">open modal</button>
  <button @click="toggleModalTwo">open challenge modal</button>

</template>

<script>
...
</script>

<style>
...
</style>
```

Add  
code

2

use the same modal  
component but pass  
in a different  
template (slot)

## Modify file **App.vue**

## App.vue

```
<template>
...
</template>

<script>

import Modal from './components/Modal.vue'

export default {
  name: 'App',
  components: { Modal },
  data() {
    return {
      title: 'My First Vue App!',
      showModal: false,
      showModalTwo: false,
    }
  },
  methods: {
    toggleModal() {
      this.showModal = !this.showModal
    },
    toggleModalTwo() {
      this.showModalTwo = !this.showModalTwo
    }
  }
}
</script>

<style>
...
</style>
```

Add  
code

3

use a different  
method (e.g.  
toggleModalTwo)  
and data (e.g.  
showModalTwo)



# My First Vue App!

Welcome...

open modal   open challenge modal



My First Vue App!

Sign up to the Newsletter

For updates and promo codes!



**Using Teleport**

## Modify file index.html

index.html

```
<!DOCTYPE html>
<html lang="">
  <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">
    <link rel="icon" href="<%= BASE_URL %>favicon.ico">
    <title><%= htmlWebpackPlugin.options.title %></title>
  </head>
  <body>
    <noscript>
      <strong>We're sorry but <%= htmlWebpackPlugin.options.title %>
doesn't work properly without JavaScript enabled. Please enable it to
continue.</strong>
    </noscript>
    <div id="app"></div>
    <!-- built files will be auto injected -->
    <div id="modals"></div>
  </body>
</html>
```

Add  
code

## Modify file App.vue

## App.vue

```
<template>
  <h1>{{ title }}</h1>
  <p>Welcome...</p>

  <teleport to="#modals" v-if="showModal">
    <Modal theme="" @close="toggleModal">
      <template v-slot:links>
        <a href="#">Sign Up now</a>
        <a href="#">More Info</a>
      </template>
      <h1>Sign up for the Giveaway!</h1>
      <p>Grab your swag for half price!</p>
    </Modal>
  </teleport>

  <teleport to="#modals" v-if="showModalTwo">
    <Modal @close="toggleModalTwo">
      <h1>Sign up to the Newsletter</h1>
      <p>For updates and promo codes!</p>
    </Modal>
  </teleport>

  <button @click.alt="toggleModal">open modal</button>
  <button @click="toggleModalTwo">open challenge modal</button>

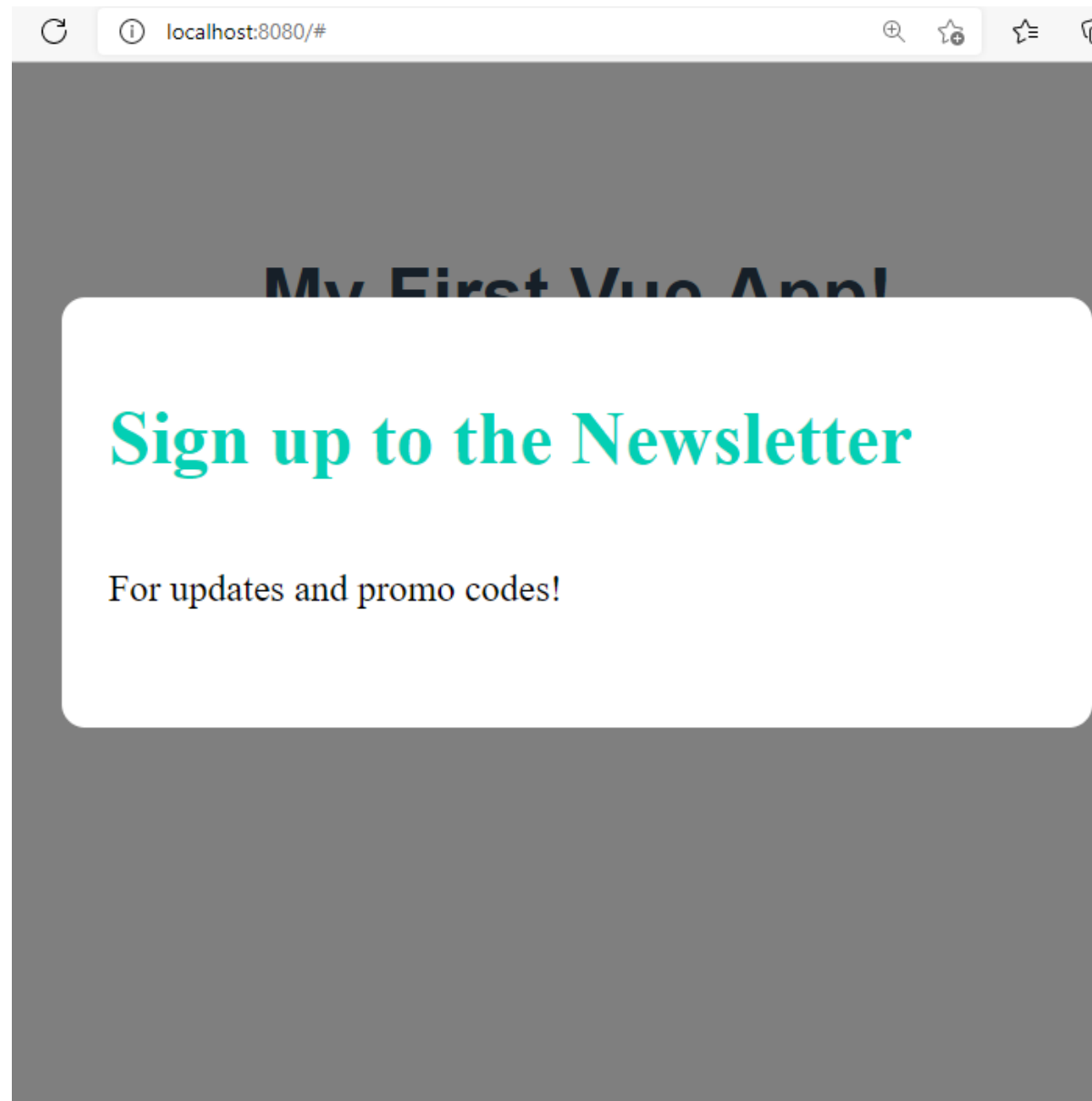
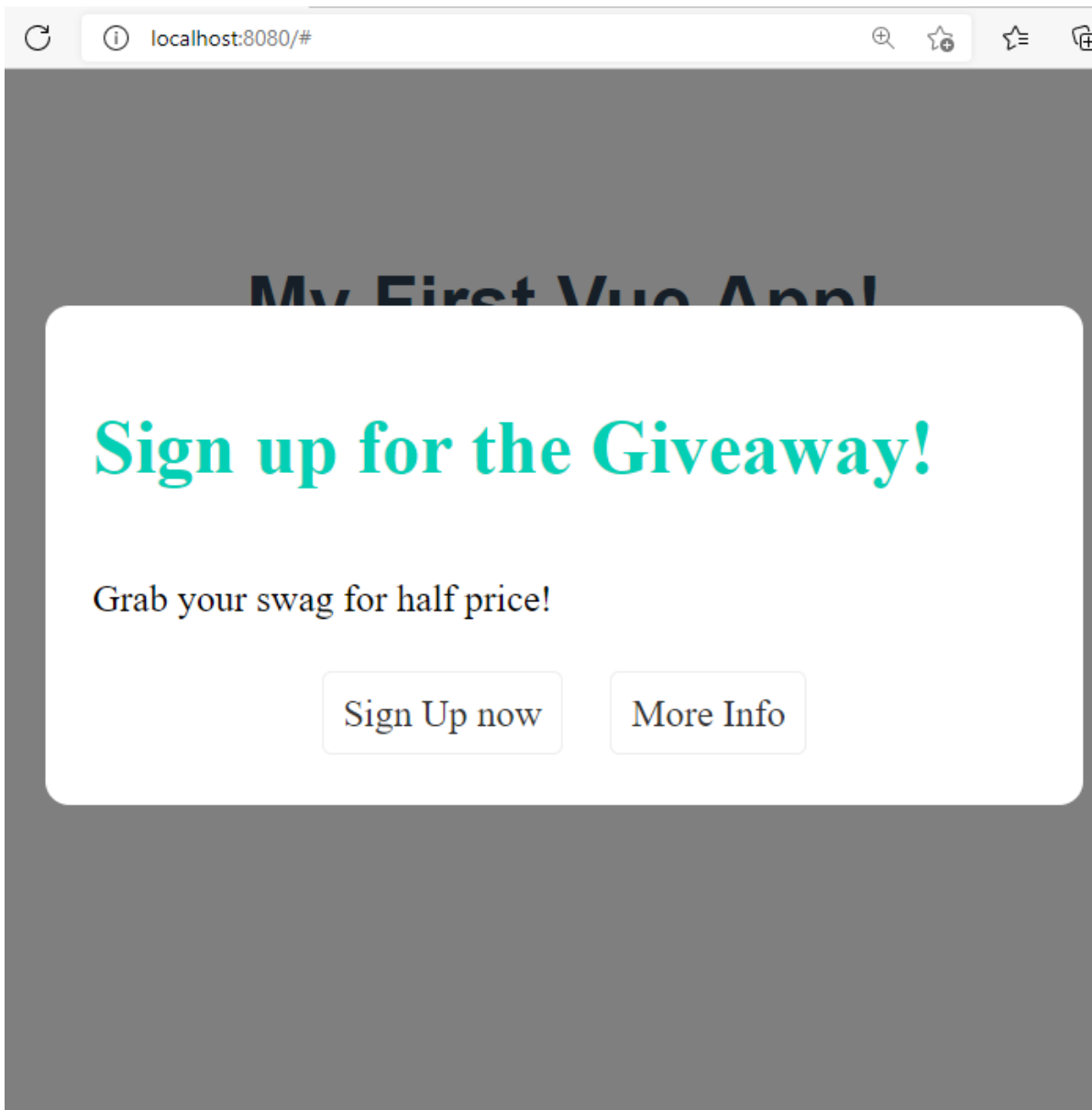
</template>

<script>
...
</script>

<style>
...
</style>
```

Modify  
code

Modify  
code



## Modify file **App.vue**

## App.vue

```
<template>
...
</template>

<script>
...
</script>

<style>
#app, #modals {

  font-family: Avenir, Helvetica, Arial, sans-serif;
  -webkit-font-smoothing: antialiased;
  -moz-osx-font-smoothing: grayscale;
  text-align: center;
  color: #2c3e50;
  margin-top: 60px;
}
h1 {
  border-bottom: 1px solid #ddd;
  display: inline-block;
  padding-bottom: 10px;
}
</style>
```

Add  
code

