

From Legacy to Vue.js



Vanessa Böhner

Web Developer

Product Engineer @ SinnerSchrader

City Coordinator (Munich) @ Vue Vixens



@vannsl



@vannsl



vannsl.io

@vannsl

What is legacy?

***code is legacy code
as soon as it's written.***

**What is a
migration?**

“migration is the process of moving from the use of one operating environment to another operating environment that is, in most cases, thought to be a better one.

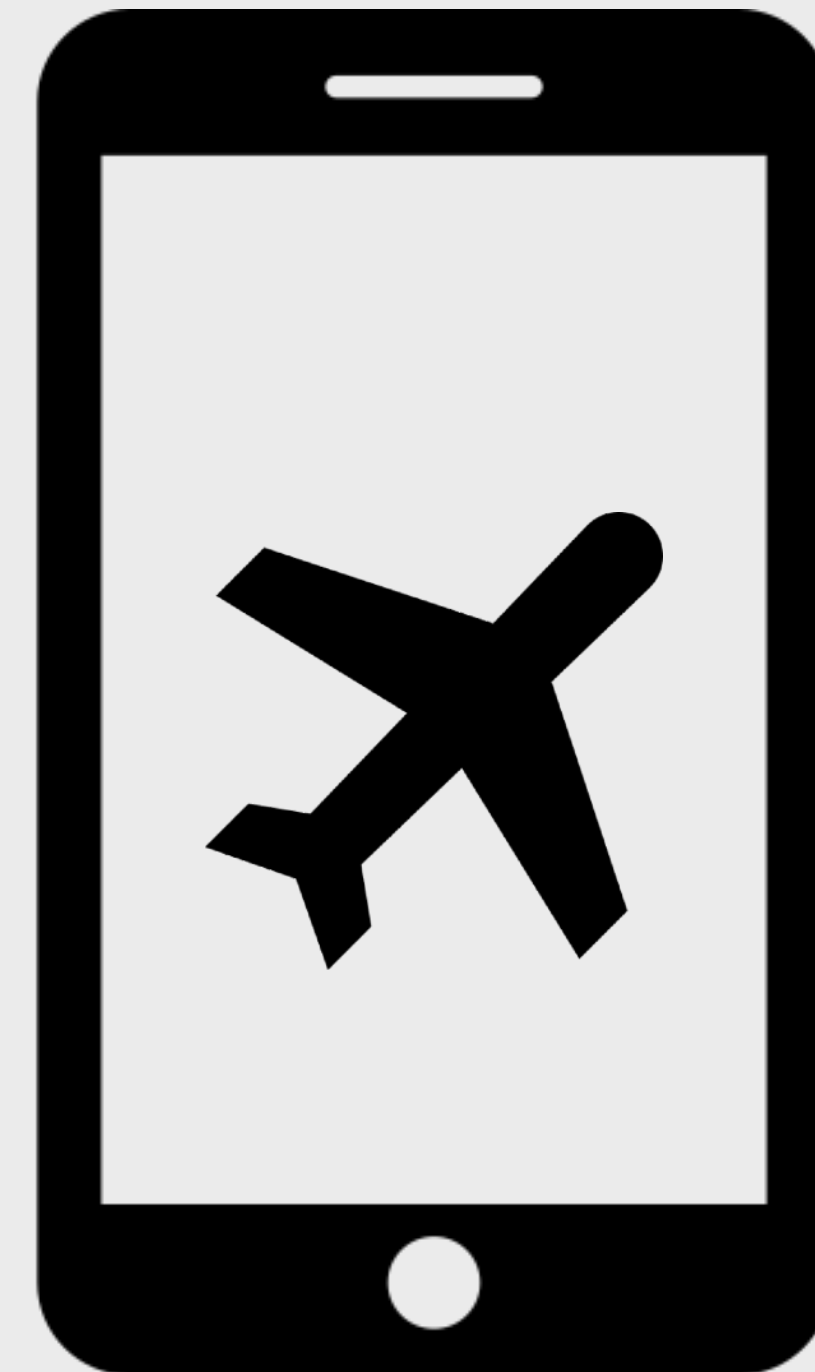
–Margaret Rouse

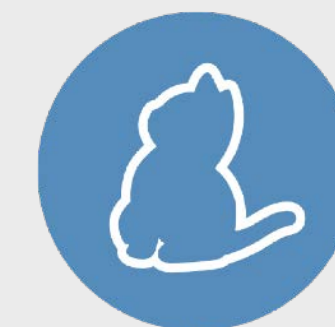
Why now?

Mobile First

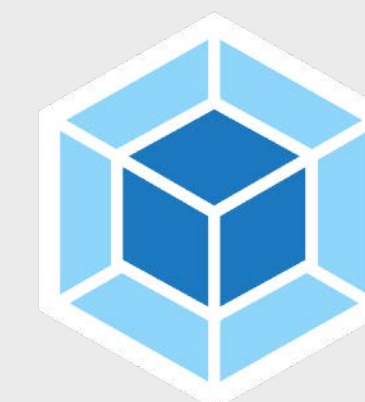


Offline First

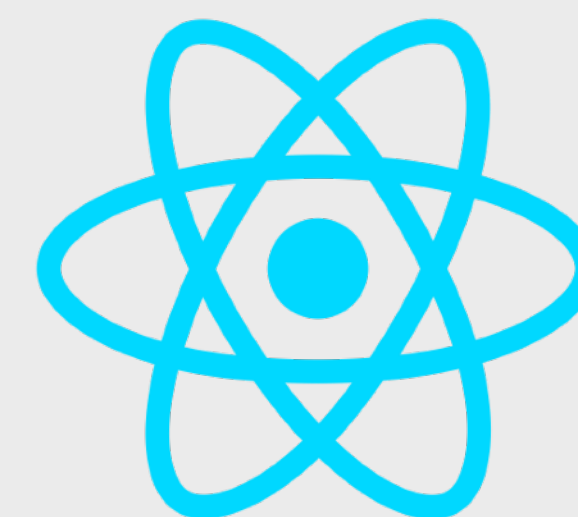




UNDERSCORE.JS



@vannsl





Vue.js

The progressive Framework



Declarative Rendering & Single File Components

```
1 <template>
2   <div class="name">
3     {{ nickName }}
4   </div>
5 </template>
6
7 <script>
8 export default {
9   data() {
10     return {
11       nickName: 'Vannsl'
12     }
13   }
14 }
15 </script>
16
17 <style scoped>
18 .name {
19   color: blue;
20 }
21 </style>
```

```
1 <template>
2   <div class="name">
3     {{ nickName }}
4   </div>
5 </template>
6
7 <script>
8 export default {
9   data() {
10     return {
11       nickName: 'Vannsl'
12     }
13   }
14 }
15 </script>
16
17 <style scoped>
18 .name {
19   color: blue;
20 }
21 </style>
```



```
1 <template>
2   <div class="name">
3     {{ nickName }}
4   </div>
5 </template>
6
7 <script>
8 export default {
9   data() {
10     return {
11       nickName: 'Vannsl'
12     }
13   }
14 }
15 </script>
16
17 <style scoped>
18 .name {
19   color: blue;
20 }
21 </style>
```

```
1 <template>
2   <div class="name">
3     {{ nickName }}
4   </div>
5 </template>
6
7 <script>
8 export default {
9   data() {
10     return {
11       nickName: 'Vannsl'
12     }
13   }
14 }
15 </script>
16
17 <style scoped>
18 .name {
19   color: blue;
20 }
21 </style>
```


Directives

```
1 <input v-bind:value="nickName"  
      v-on:change="setNewNickName">
```

```
2 <input v-model="nickName">
```

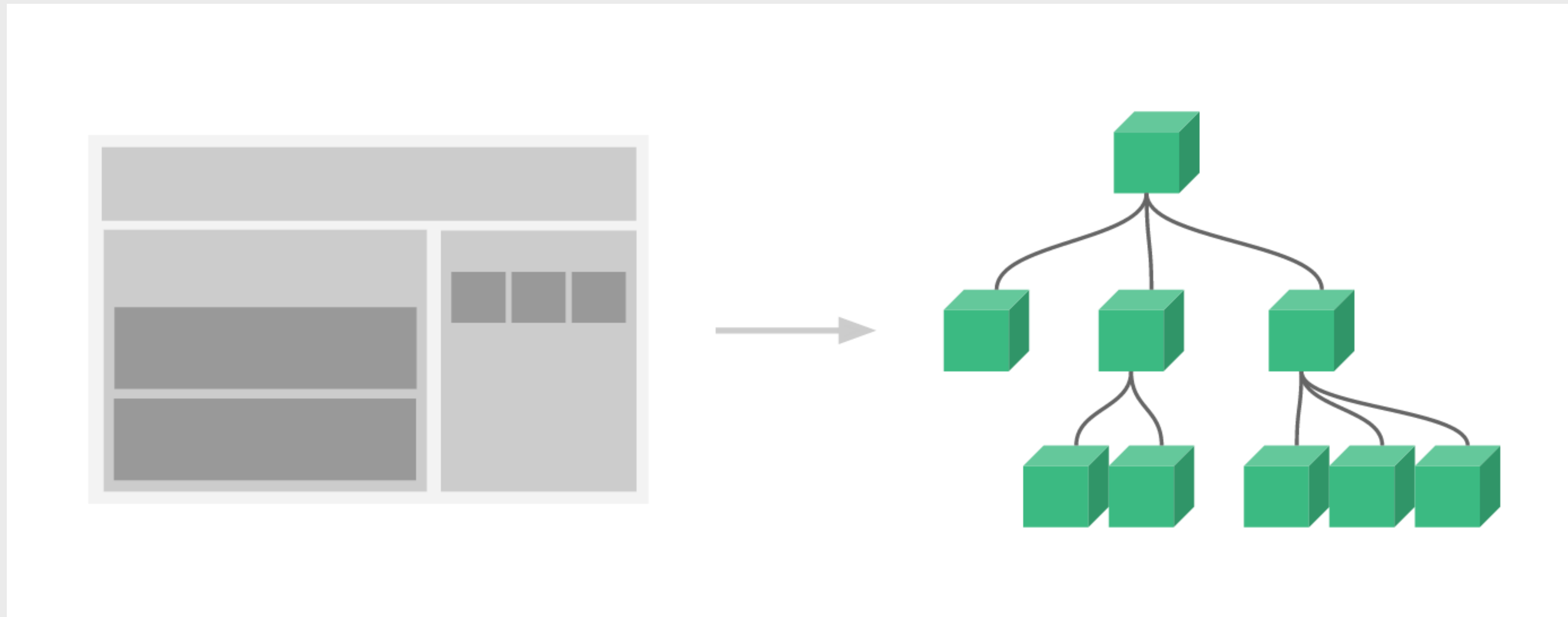
Composing Components

```
1 <template>
2   <div class="name">
4     <other-component v-bind:nickName="nickName" />
5   </div>
6 </template>
7
8 <script>
9 import OtherComponent from './OtherComponent.vue'
10
11 export default {
12   // ...
17   components: {
18     OtherComponent
19   }
20 }
21 </script>
```

emit & on

```
1 <template>
2   <button v-on:click="$emit('customClick')"  
      v-text="Submit" />
3 </template>
4
5 <template>
6   <custom-button v-on:customClick='handleClick' />
7 </template>
```


Component Tree





Super Hero Friends

```
1 <template lang="pug">
2   div
3     h1 {{ title }}
4 </template>
5
6 <script lang="coffee">
7   export default
8     props:
9       nickName:
10         type: String
11         required: true
12 </script>
13
14 <style lang="scss">
15   /* write SCSS here */
16 </style>
```

Pug
CoffeeScript
TypeScript
SCSS
Stylus
etc.

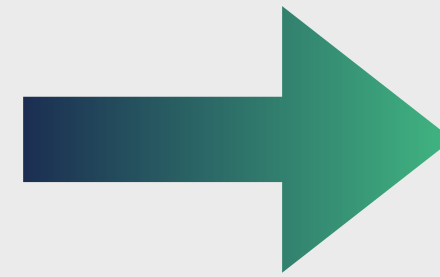


Super Hero Friends

```
1 <template lang="pug">
2   div
3     h1 {{ title }}
4 </template>
5
6 <script lang="coffee">
7   export default
8     props:
9       nickName:
10         type: String
11         required: true
12 </script>
13
14 <style lang="scss">
15   /* write SCSS here */
16 </style>
```

Pug
CoffeeScript
TypeScript
SCSS
Stylus
etc.

jQuery to Vue.js



jQuery Import

```
1 <div class="container">
2   <h2>Awesome container</h2>
3 </div>
4
5 <script src="https://cdnjs.cloudflare.com/ajax/libs/
   jquery/3.4.1/jquery.min.js"></script>
6 <script>
7   // javascript & jquery code
8 </script>
```

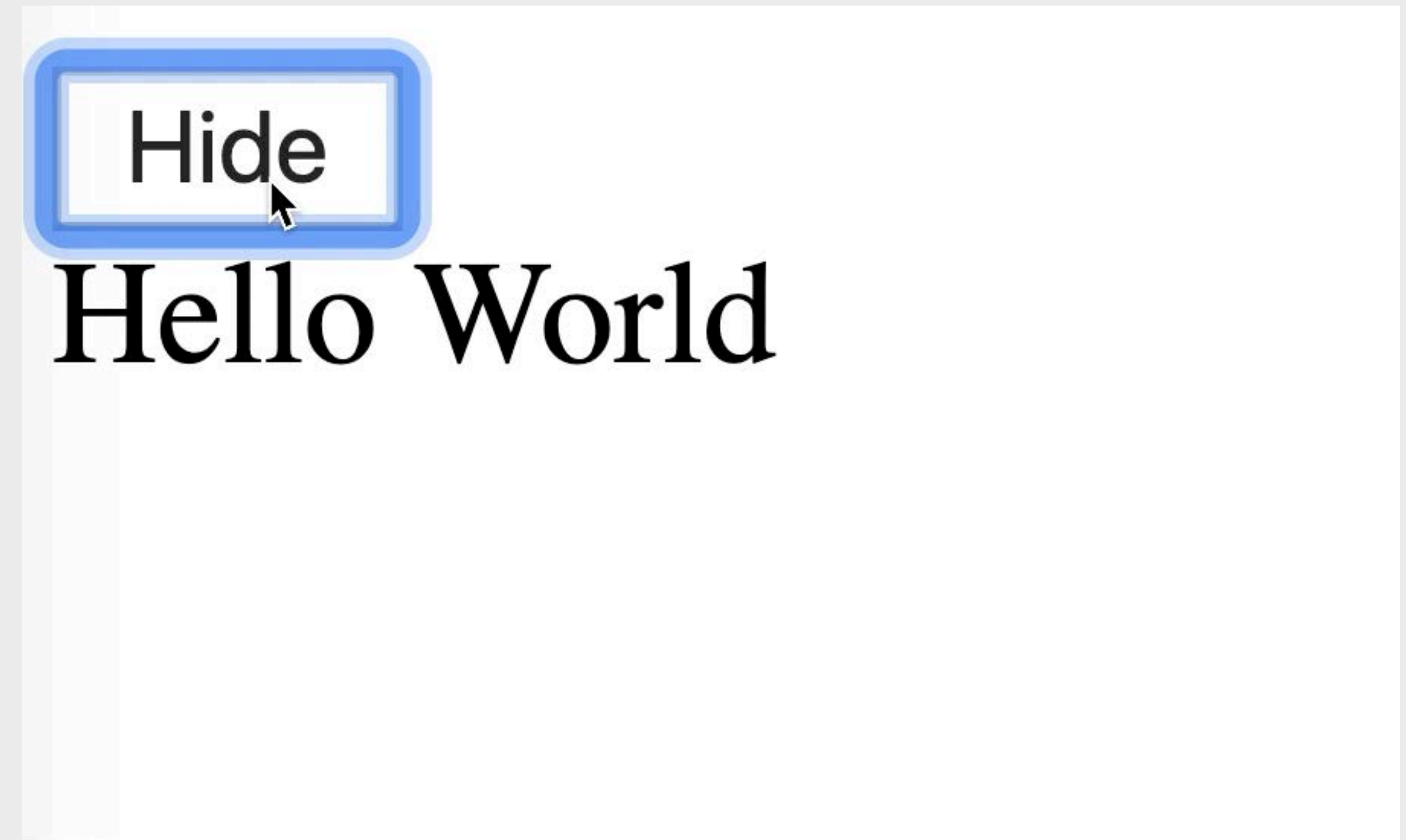

Vue.js Import

```
1 <div class="container">
2   <h2>Awesome container</h2>
3 </div>
4
5 <script src="https://cdn.jsdelivr.net/npm/vue@2.6.10/
   dist/vue.min.js"></script>
6 <script>
7   // javascript & vue code
8 </script>
```

Hide

Hello World

```
12 <div id="app">
13   <button id="toggle">
14     Show
15   </button>
16   <div id="container">
17     <span style="display: none;">
18       Hello World
19     </span>
20   </div>
21 </div>
22
23 <script>
24   var isShown = false;
25   var $spanElement = $("#container").find('span');
26
27   $("#toggle").click(function (event) {
28     event.preventDefault();
29     if (isShown) {
30       if ($spanElement) {
31         $spanElement.hide();
32       }
33       $("#toggle").html('Show');
34     } else {
35       if ($spanElement) {
36         $spanElement.show();
37       }
38       $("#toggle").html('Hide');
39     }
40     isShown = !isShown;
41   });
42 </script>
```




```
12 <div id="app">
13   <button id="toggle">
14     Show
15   </button>
16   <div id="container">
17     <span style="display: none;">
18       Hello World
19     </span>
20   </div>
21 </div>
22
```

```
23 <script>
24   var isShown = false;
25   var $spanElement = $("#container").find('span');
26
27   $("#toggle").click(function (event) {
28     event.preventDefault();
29     if (isShown) {
30       if ($spanElement) {
31         $spanElement.hide();
32       }
33       $("#toggle").html('Show');
34     } else {
35       if ($spanElement) {
36         $spanElement.show();
37       }
38       $("#toggle").html('Hide');
39     }
40     isShown = !isShown;
41   });
42 </script>
```

```
12 <div id="app">
13   <button id="toggle">
14     Show
15   </button>
16   <div id="container">
17     <span style="display: none;">
18       Hello World
19     </span>
20   </div>
21 </div>
22
```

```
23 <script>
24   var isShown = false;
25   var $spanElement = $("#container").find('span');
26
27   $("#toggle").click(function (event) {
28     event.preventDefault();
29     if (isShown) {
30       if ($spanElement) {
31         $spanElement.hide();
32       }
33       $("#toggle").html('Show');
34     } else {
35       if ($spanElement) {
36         $spanElement.show();
37       }
38       $("#toggle").html('Hide');
39     }
40     isShown = !isShown;
41   });
42 </script>
```

```
12 <div id="app">
13   <button id="toggle">
14     Show
15   </button>
16   <div id="container">
17     <span style="display: none;">
18       Hello World
19     </span>
20   </div>
21 </div>
22
```

```
23 <script>
24   var isShown = false;
25   var $spanElement = $("#container").find('span');
26
27   $("#toggle").click(function (event) {
28     event.preventDefault();
29     if (isShown) {
30       if ($spanElement) {
31         $spanElement.hide();
32       }
33       $("#toggle").html('Show');
34     } else {
35       if ($spanElement) {
36         $spanElement.show();
37       }
38       $("#toggle").html('Hide');
39     }
40     isShown = !isShown;
41   });
42 </script>
```



```
12 <div id="app">
13   <button id="toggle">
14     Show
15   </button>
16   <div id="container">
17     <span style="display: none;">
18       Hello World
19     </span>
20   </div>
21 </div>
22
```

```
23 <script>
24   var isShown = false;
25   var $spanElement = $("#container").find('span');
26
27   $("#toggle").click(function (event) {
28     event.preventDefault();
29     if (isShown) {
30       if ($spanElement) {
31         $spanElement.hide();
32       }
33       $("#toggle").html('Show');
34     } else {
35       if ($spanElement) {
36         $spanElement.show();
37       }
38       $("#toggle").html('Hide');
39     }
40     isShown = !isShown;
41   });
42 </script>
```

```
12  <div id="app">
13    <button v-on:click.prevent="isShown = !isShown">
14      {{ isShown ? 'Hide' : 'Show' }}
15    </button>
16    <div>
17      <span v-show='isShown'>
18        Hello World
19      </span>
20    </div>
21  </div>
22
23  <script>
24    new Vue({
25      el: '#app',
26      data: {
27        isShown: false
28      },
29    })
30  </script>
```

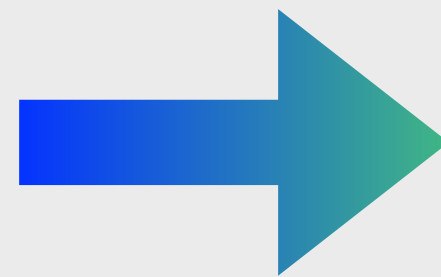


```
12  <div id="app">
13    <button v-on:click.prevent="isShown = !isShown">
14      {{ isShown ? 'Hide' : 'Show' }}
15    </button>
16    <div>
17      <span v-show='isShown'>
18        Hello World
19      </span>
20    </div>
21  </div>
22
23  <script>
24    new Vue({
25      el: '#app',
26      data: {
27        isShown: false
28      },
29    })
30  </script>
```

```
12  <div id="app">
13    <button v-on:click.prevent="isShown = !isShown">
14      {{ isShown ? 'Hide' : 'Show' }}
15    </button>
16    <div>
17      <span v-show='isShown'>
18        Hello World
19      </span>
20    </div>
21  </div>
22
23  <script>
24    new Vue({
25      el: '#app',
26      data: {
27        isShown: false,
28      },
29    })
30  </script>
```

```
12  <div id="app">
13    <button v-on:click.prevent="isShown = !isShown">
14      {{ isShown ? 'Hide' : 'Show' }}
15    </button>
16    <div>
17      <span v-show='isShown'>
18        Hello World
19      </span>
20    </div>
21  </div>
22
23  <script>
24    new Vue({
25      el: '#app',
26      data: {
27        isShown: false,
28      },
29    })
30  </script>
```


backbonejs to Vue.js



```
1 const Vue = require('vue').default
2
3 module.exports = class VueComponent extends Core.View {
4   constructor(config) {
5     super(config)
6   }
7
8   get template() {
9     return "<div class='vue-component'></div>"
10  }
11
12  init(config) {
13    this.component = config.component
14  }
15
16  afterRender() {
17    const el = this.$('.vue-component').get(0)
18    new Vue({
19      el,
20      render: (h) => h(this.component)
21    })
22  }
23 }
```

```
1 const Vue = require('vue').default
2
3 module.exports = class VueComponent extends Core.View {
4   constructor(config) {
5     super(config)
6   }
7
8   get template() {
9     return "<div class='vue-component'></div>"
10  }
11
12  init(config) {
13    this.component = config.component
14  }
15
16  afterRender() {
17    const el = this.$('.vue-component').get(0)
18    new Vue({
19      el,
20      render: (h) => h(this.component)
21    })
22  }
23 }
```



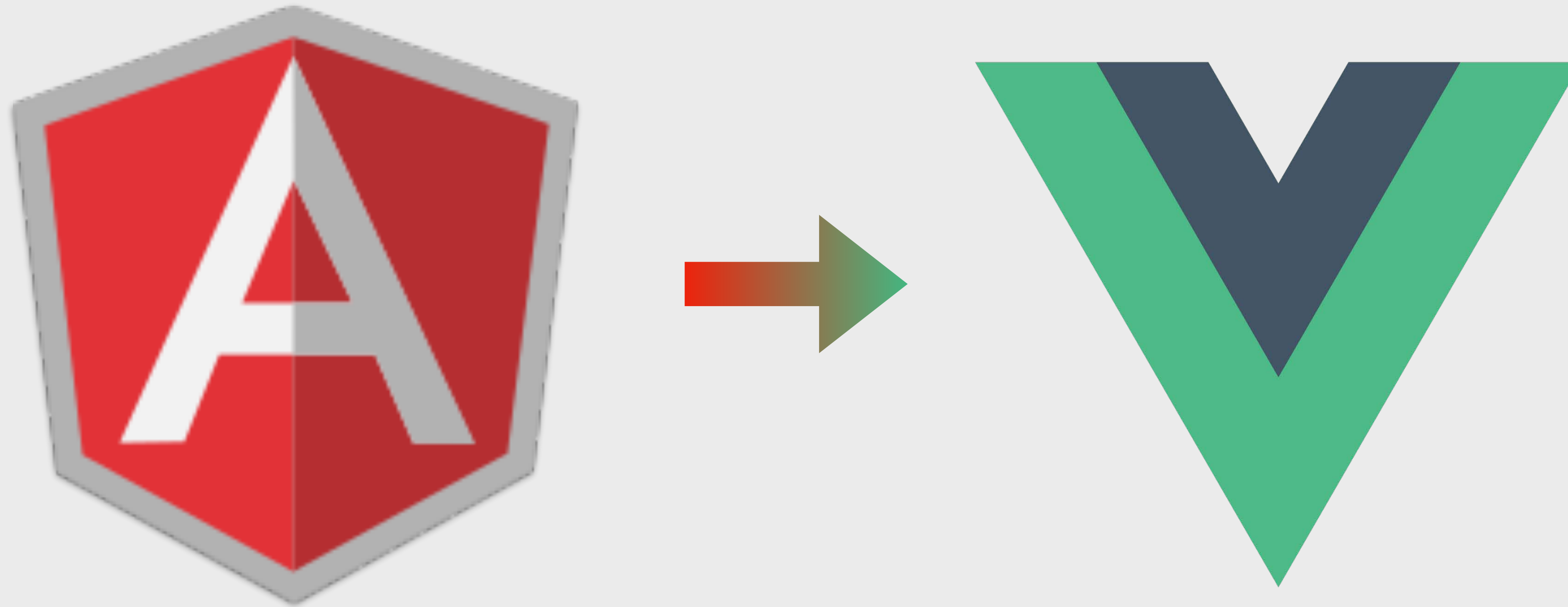
```
1 const Vue = require('vue').default
2
3 module.exports = class VueComponent extends Core.View {
4   constructor(config) {
5     super(config)
6   }
7
8   get template() {
9     return "<div class='vue-component'></div>"
10  }
11
12  init(config) {
13    this.component = config.component
14  }
15
16  afterRender() {
17    const el = this.$('.vue-component').get(0)
18    new Vue({
19      el,
20      render: (h) => h(this.component)
21    })
22  }
23 }
```

```
1 const Vue = require('vue').default
2
3 module.exports = class VueComponent extends Core.View {
4   constructor(config) {
5     super(config)
6   }
7
8   get template() {
9     return "<div class='vue-component'></div>"
10  }
11
12  init(config) {
13    this.component = config.component
14  }
15
16  afterRender() {
17    const el = this.$('.vue-component').get(0)
18    new Vue({
19      el,
20      render: (h) => h(this.component)
21    })
22  }
23 }
```



```
1 const Vue = require('vue').default
2
3 module.exports = class VueComponent extends Core.View {
4   constructor(config) {
5     super(config)
6   }
7
8   get template() {
9     return "<div class='vue-component'></div>"
10  }
11
12  init(config) {
13    this.component = config.component
14  }
15
16  afterRender() {
17    const el = this.$('.vue-component').get(0)
18    new Vue({
19      el,
20      render: (h) => h(this.component)
21    })
22  }
23 }
```

AngularJS to Vue.js



***“I extracted the part that I really liked about
AngularJS and built something really
lightweight without all the extra concepts
involved.***

–Evan You


```
1 const app = angular.module('vue.components', ['ngVue'])
    .controller('MainController')
2
3 const VComponent = Vue.component('vue-component', {
4     render(h) {
5         return (
6             <span>Hello World</span>
7         )
8     }
9 })
10
11 app.value('VueComponent', VComponent);
```

```
1 const app = angular.module('vue.components', ['ngVue'])  
    .controller('MainController')  
2  
3 const VComponent = Vue.component('vue-component', {  
4   render(h) {  
5     return (  
6       <span>Hello World</span>  
7     )  
8   }  
9 })  
10  
11 app.value('VueComponent', VComponent);
```

```
1 const app = angular.module('vue.components', ['ngVue'])  
    .controller('MainController')  
2  
3 const VComponent = Vue.component('vue-component', {  
4     render(h) {  
5         return (  
6             <span>Hello World</span>  
7         )  
8     }  
9 })  
10  
11 app.value('VueComponent', VComponent);
```

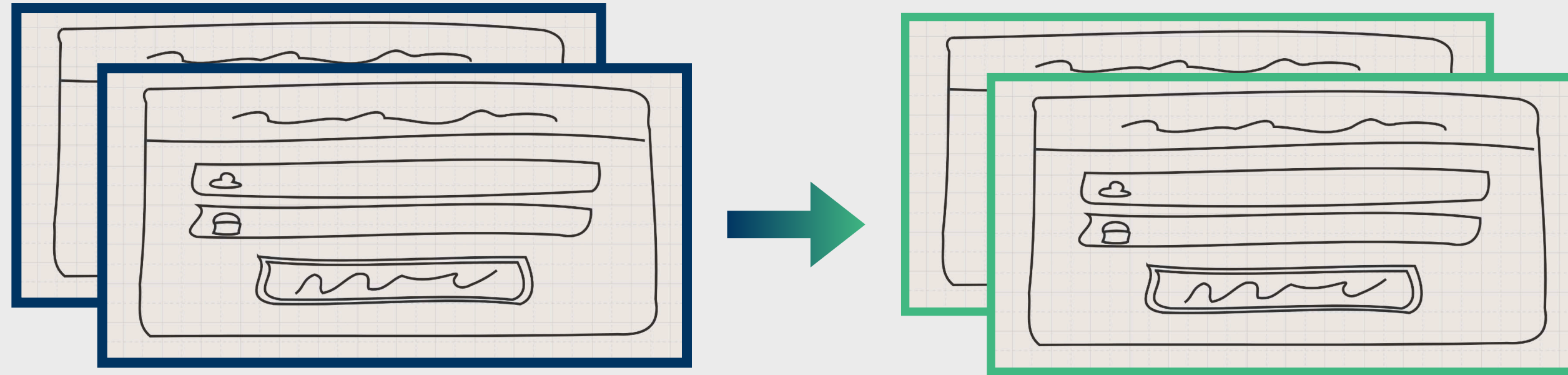


```
1 const app = angular.module('vue.components', ['ngVue'])
                           .controller('MainController')
2
3 const VComponent = Vue.component('vue-component', {
4   render(h) {
5     return (
6       <span>Hello World</span>
7     )
8   }
9 })
10
11 app.value('VueComponent', VComponent);
```

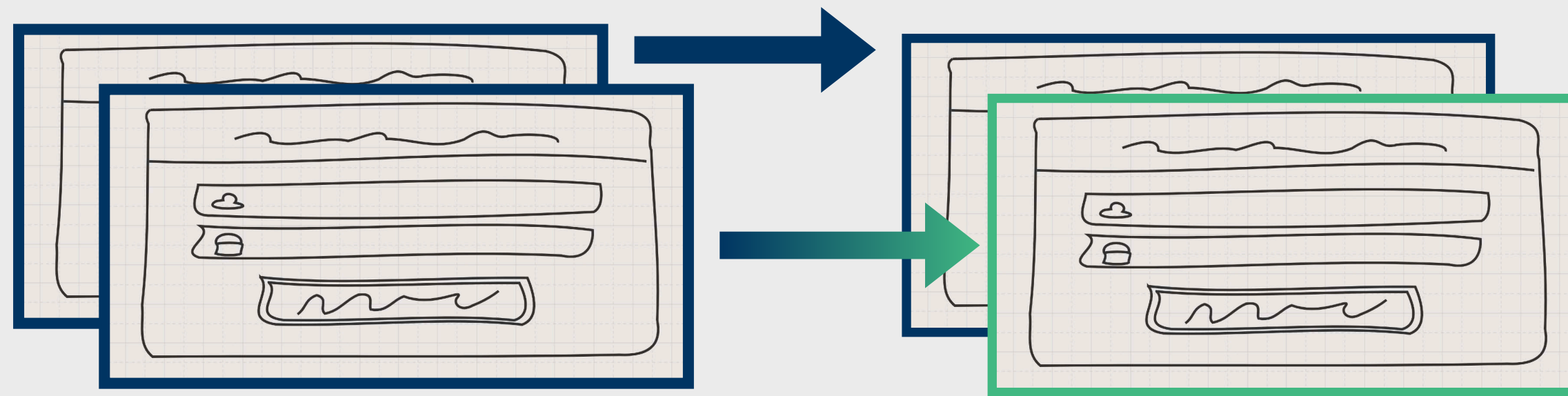

AngularJS: Winter is co... already here



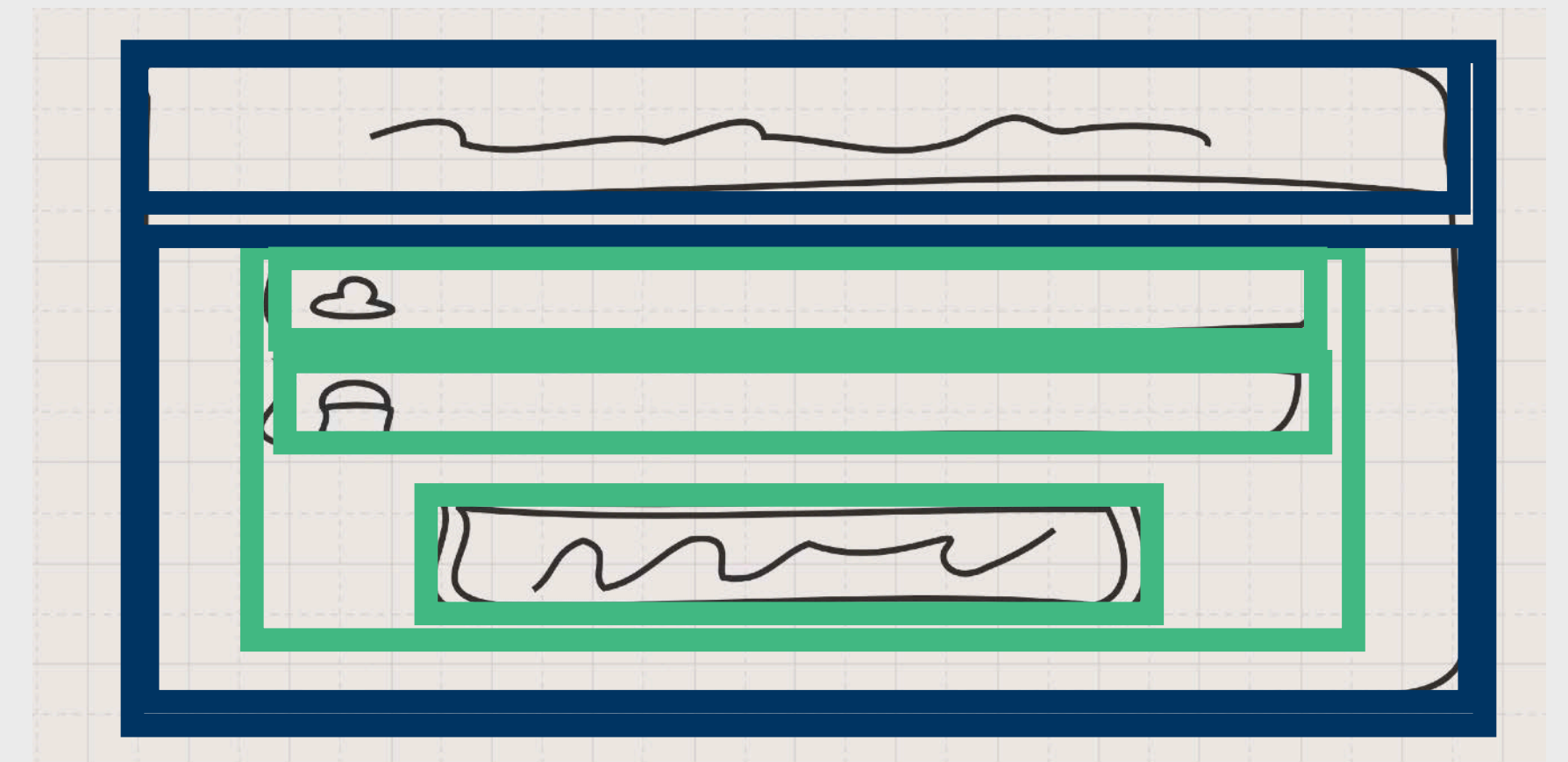
Migration Options



Full Rewrite

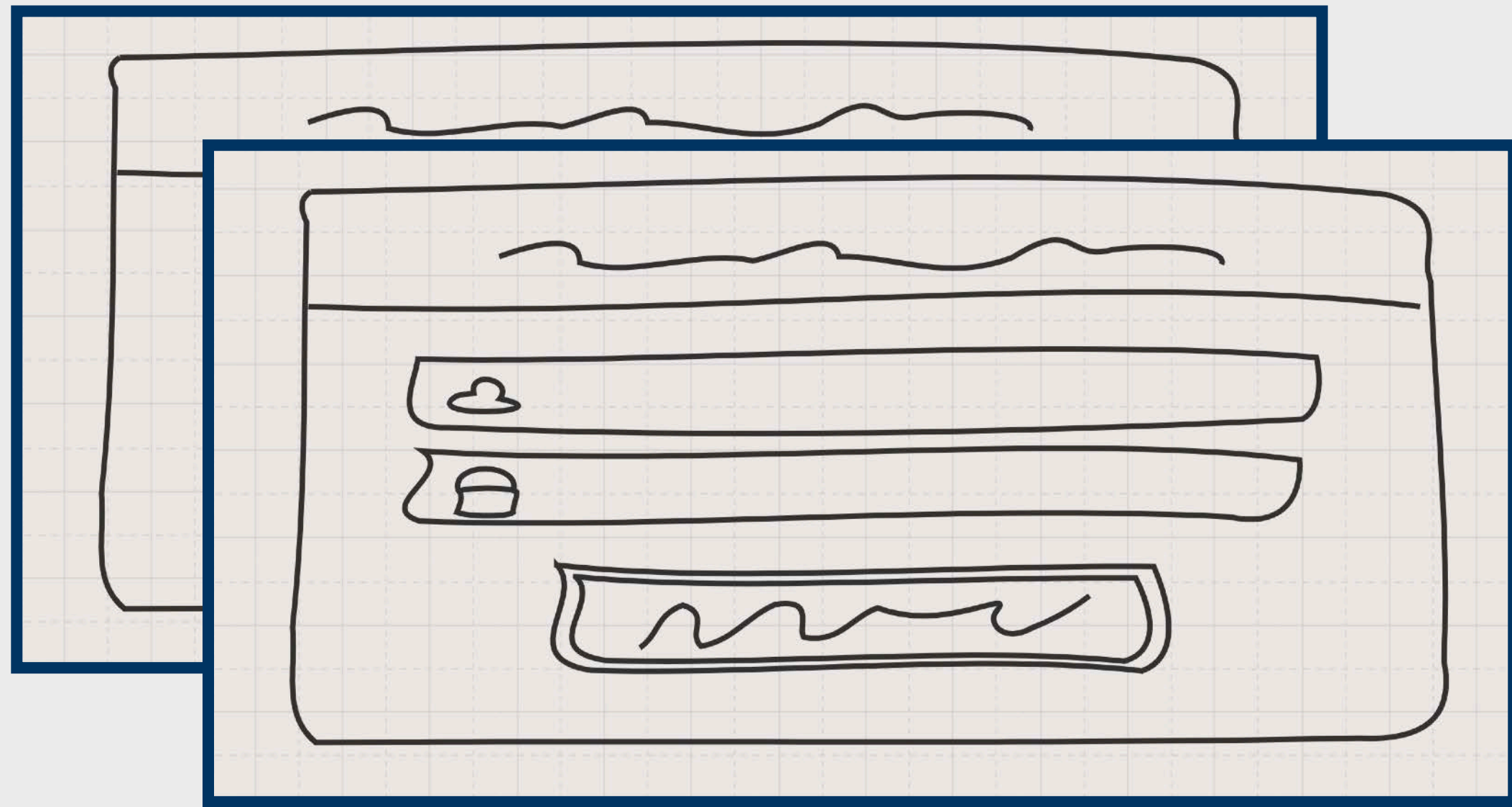


Separated Pages

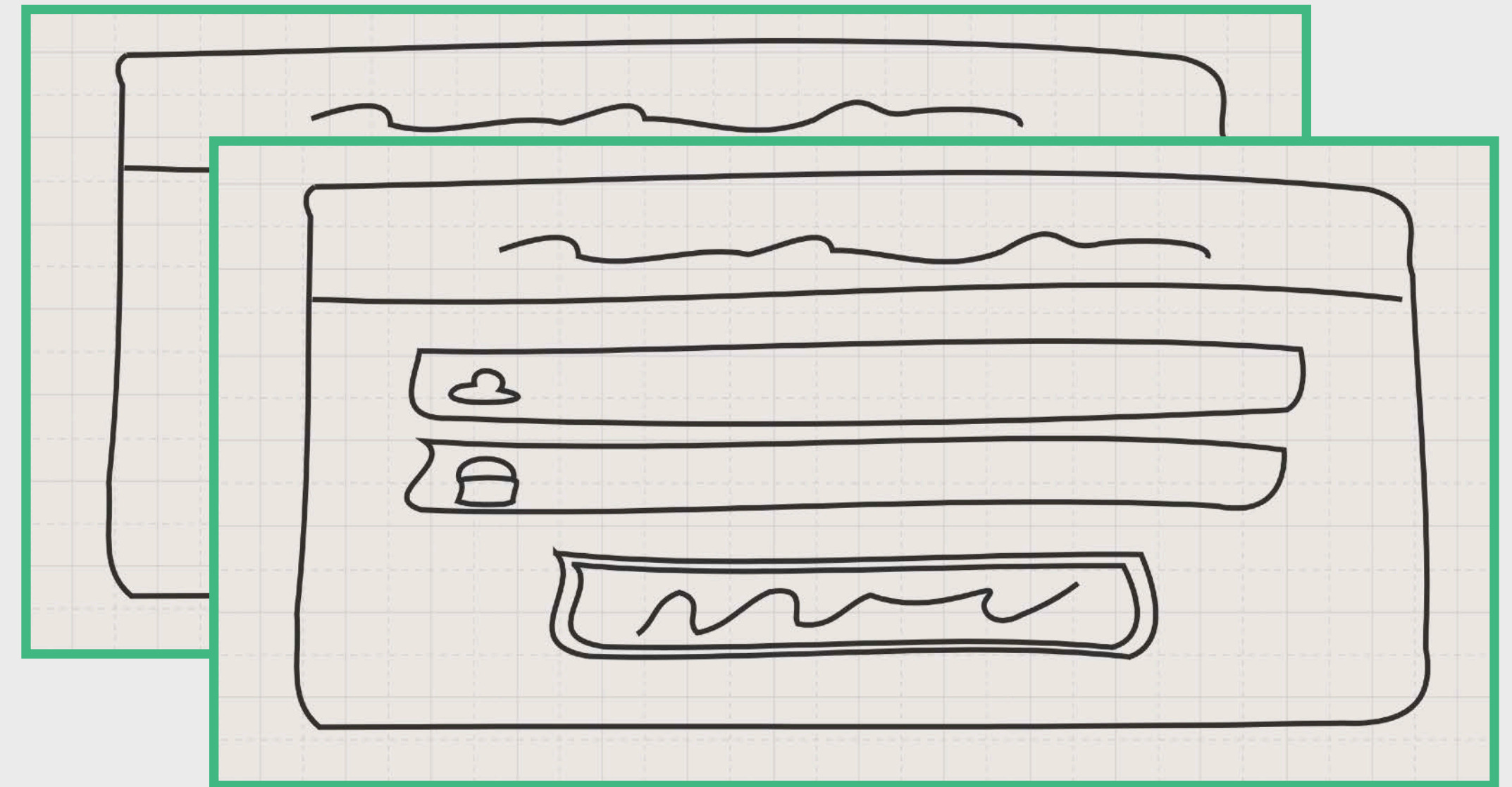
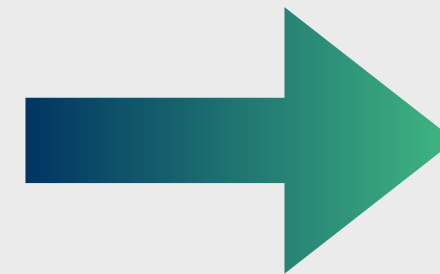


Hybrid

Full Rewrite



Legacy



Vue



No Refactoring



No Refactoring

No Risk of Bugs



No Refactoring

Time intensive

No Risk of Bugs



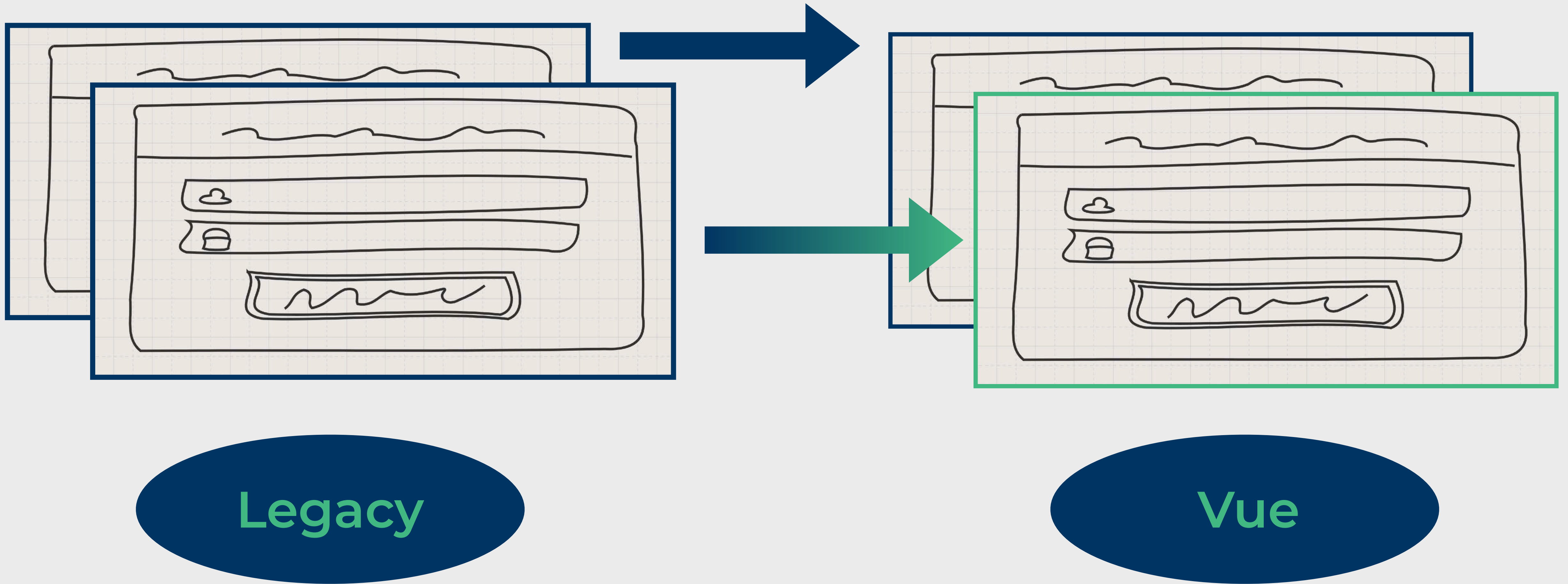
No Refactoring

Time intensive

No Risk of Bugs

Feature Set

Separated Pages





Don't touch existing features



Don't touch existing features

No synchronization between
modules on same page



Don't touch existing features

No synchronization between
modules on same page



(Full) Rewrite of shared modules



Don't touch existing features

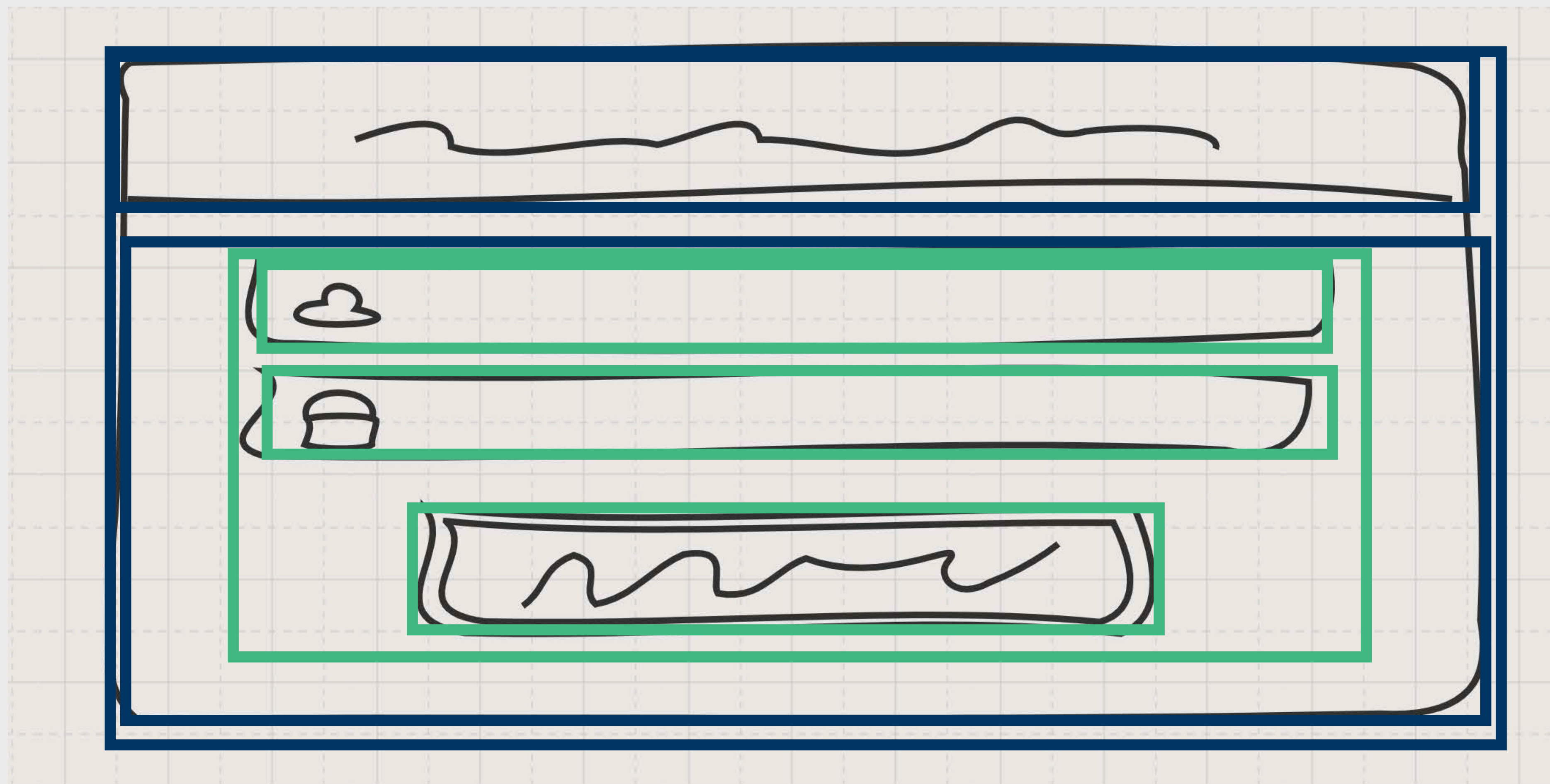
No synchronization between
modules on same page



(Full) Rewrite of shared modules

Maintain both versions

Hybrid



Legacy

Vue



No Rewrite unless
wanted



No Rewrite unless
wanted

Step by Step



No Rewrite unless
wanted

Step by Step

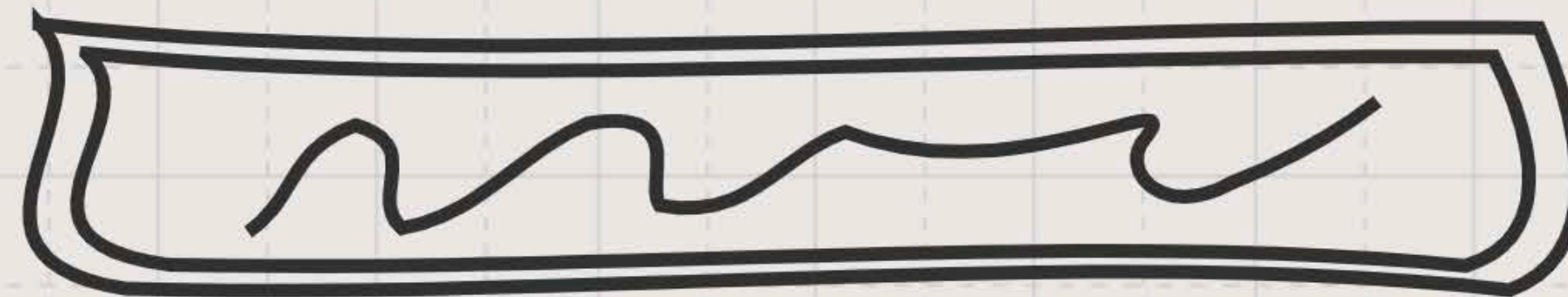


Configuration &
Shared vendors

2x Vue Import?

You are running Vue [vue.runtime.esm.js?2b0e:8434](#) in development mode.
Make sure to turn on production mode when deploying for production.
See more tips at [ent.html](#)

You are running Vue [vue.runtime.esm.js?2b0e:8434](#) in development mode.
Make sure to turn on production mode when deploying for production.
See more tips at <https://vuejs.org/guide/deployments.html>



Shared dependencies

for Hybrid

```
1 window.Vue = require('vue');  
2 window.$ = require('jquery');  
3 window.JQuery = require('jquery');
```



No Rewrite unless
wanted

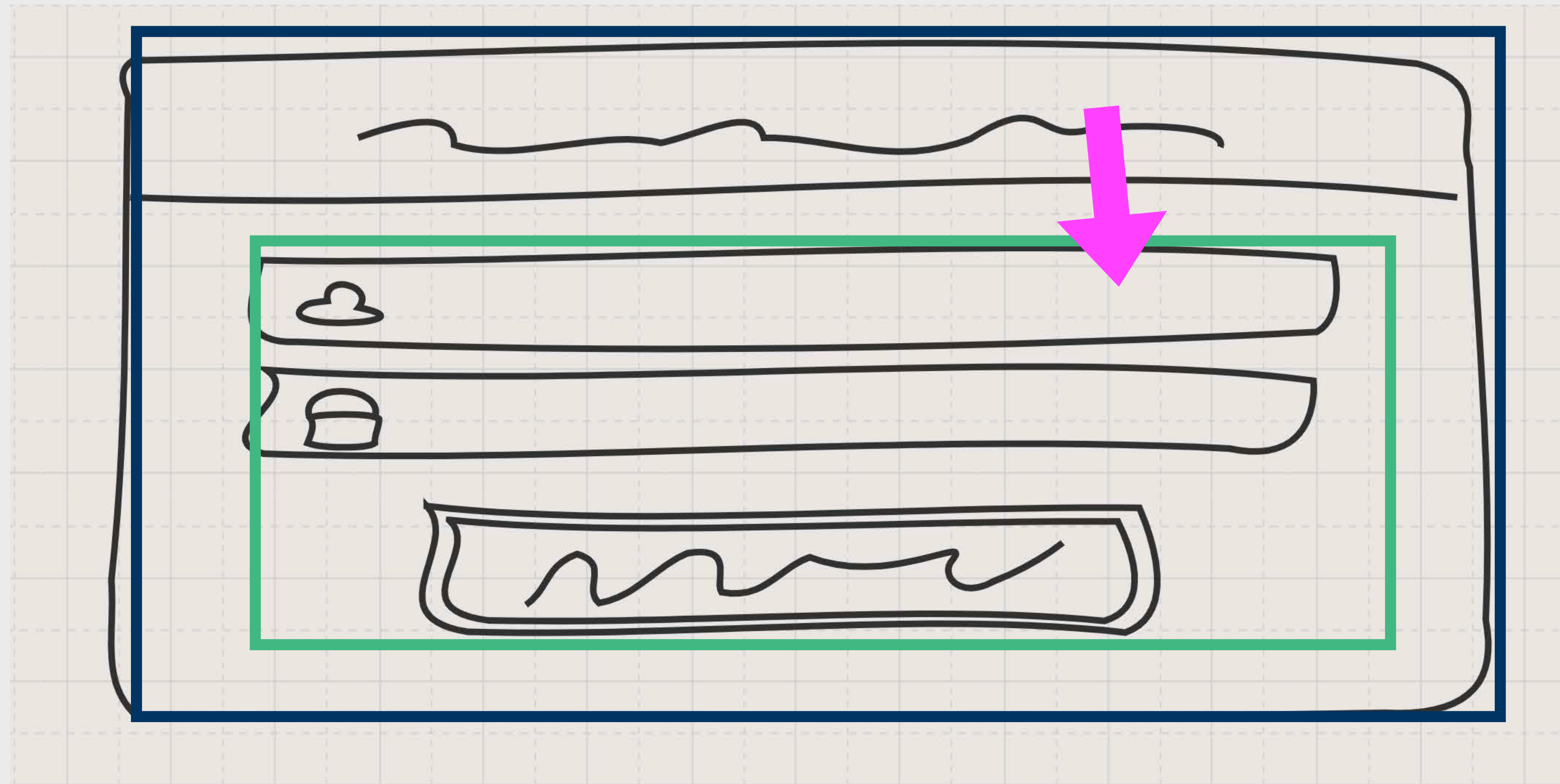
Step by Step



Configuration

Synchronization between
modules

Wrapper to Component



Legacy

Vue

Data Attributes

```
1 <div id="vue-app" data-nickName="<%= @nickName %>">
2   <!-- Vue Component will be inserted here -->
3 </div>
4
5 <script>
6   var Comp = Vue.extend({
7     props: ['nickName'],
8     template: `<div class= "name">{{ nickName }}</div>`
9   })
10
11   var app = new Comp({
12     el: '#app',
13     propsData: ['nickName']
14   })
15 </script>
```

Data Attributes

```
1 <div id="vue-app" data-nickName="<%= @nickName %>">
2   <!-- Vue Component will be inserted here -->
3 </div>
4
5 <script>
6   var Comp = Vue.extend({
7     props: ['nickName'],
8     template: `<div class= "name">{{ nickName }}</div>`
9   })
10
11   var app = new Comp({
12     el: '#app',
13     propsData: ['nickName']
14   })
15 </script>
```


Data Attributes

```
1 <div id="vue-app" data-nickName="<%= @nickName %>">
2   <!-- Vue Component will be inserted here -->
3 </div>
4
5 <script>
6   var Comp = Vue.extend({
7     props: ['nickName'],
8     template: `<div class="name">{{ nickName }}</div>`
9   })
10
11   var app = new Comp({
12     el: '#app',
13     propsData: ['nickName']
14   })
15 </script>
```

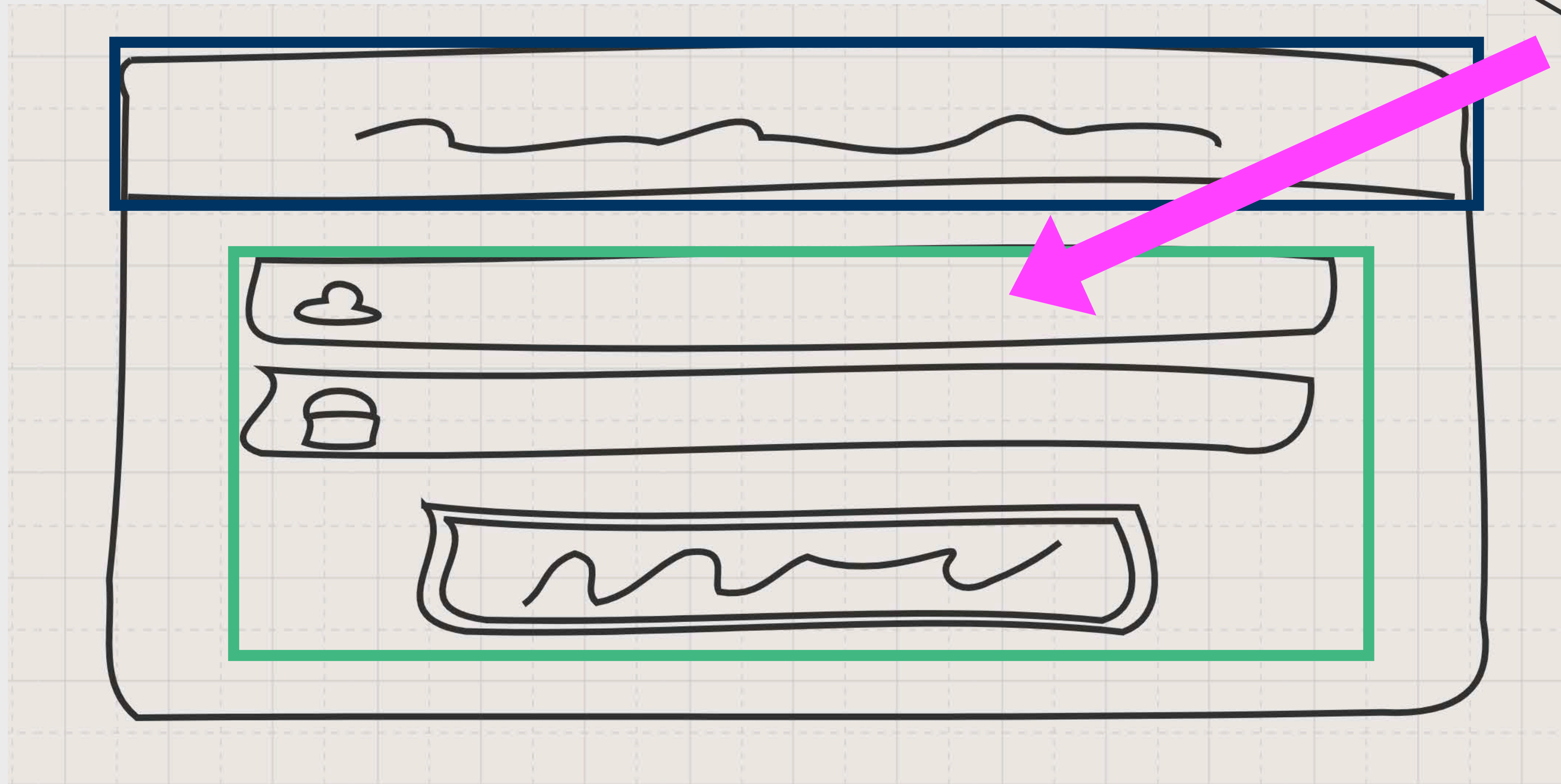
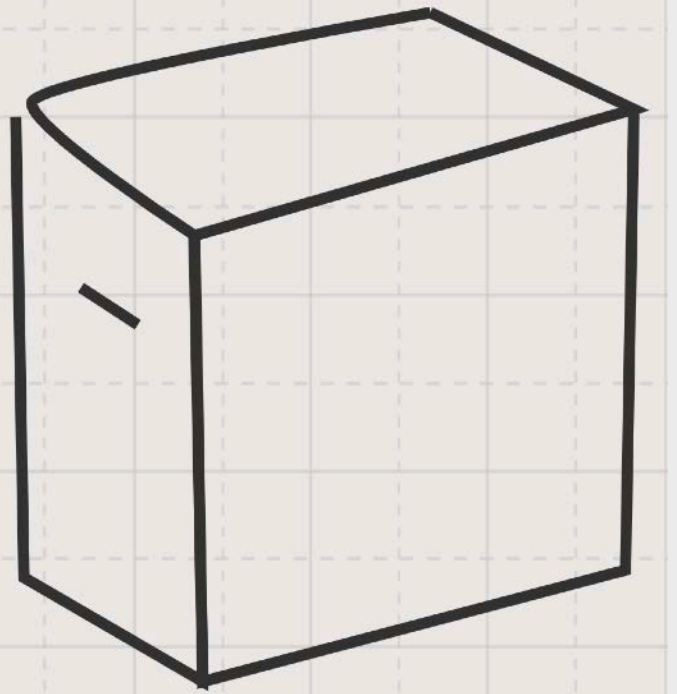



```
12  init(opts) {
13      this.component = opts.component
14      this.nickName = opts.nickName
15  }
16
17  afterRender() {
18      const el = this.$('.vue-container').get(0)
19
20      new Vue({
21          el,
22          render: (h) => {
23              return h(this.component, { nickName: this.nickName });
24          }
25      })
26  }
```



```
1 const app = angular.module('vue.components', ['ngVue'])
2   .controller('MainController', () => { this.person = {nickName: 'Vannsl'} })
3
4 const VComponent = Vue.component('hello-component', {
5   props: {
6     nickName: String
7   },
8   render(h) {
9     return (
10       <span>Hi, { this.nickName }</span>
11     )
12   }
13 })
14
15 app.value('HelloComponent', VComponent);
```

Server to Vue



Legacy

Vue

Fetch Request (Promise)

```
7 <script>
8 export default {
9   data() {
10     return {
11       nickName: ''
12     }
13   },
14   created() {
15     axios.get("[URL]").then((response) => {
16       this.nickName = response.data.nickName;
17     });
18   }
19 };
20 </script>
```

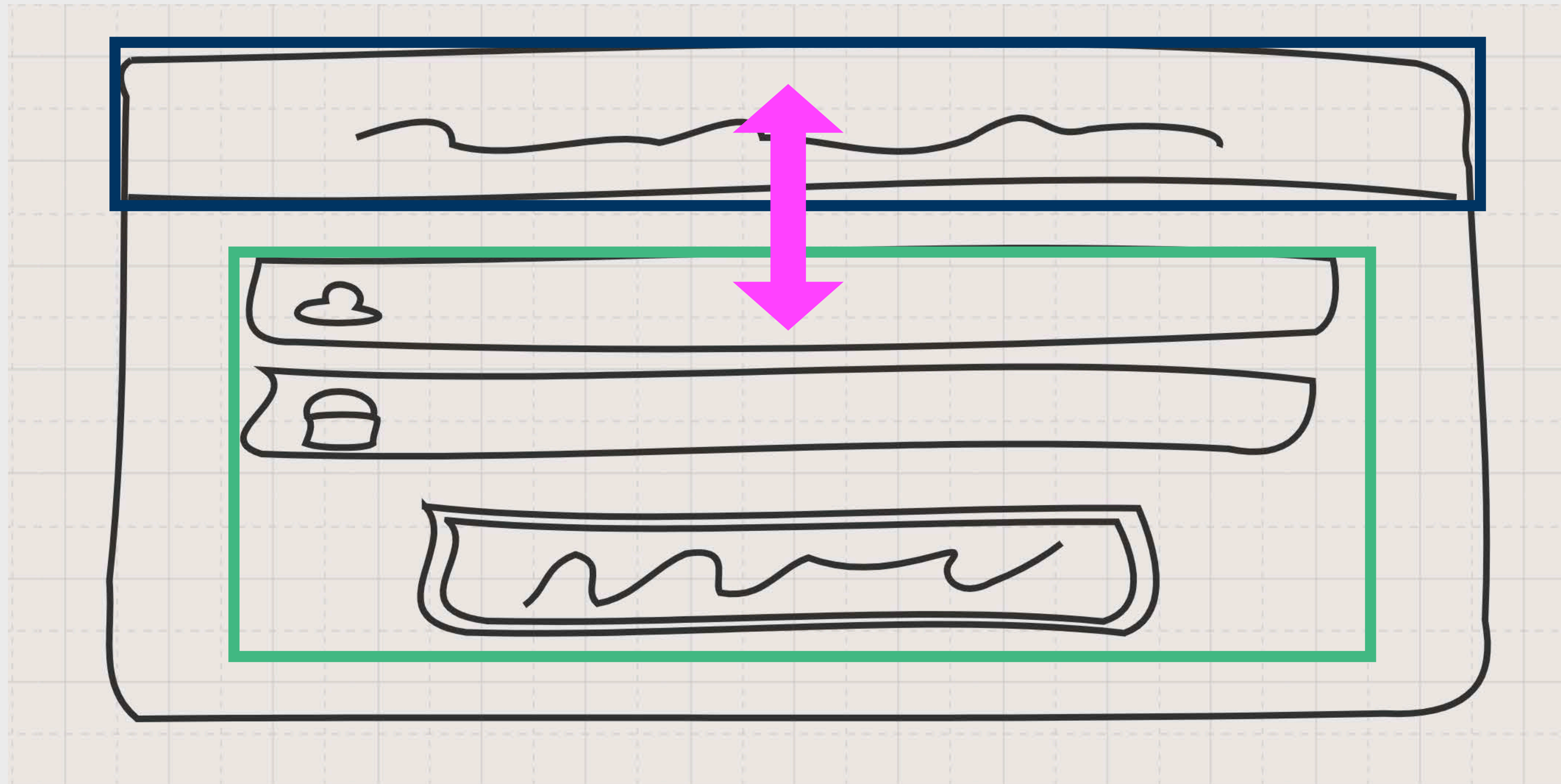
Fetch Request (async / await)

```
7 <script>
8 export default {
9   data() {
10     return {
11       nickName: ''
12     }
13   },
14   async created() {
15     const response = await axios.get("[URL]");
16     this.nickName = response.data.nickName;
17   }
18 };
19 </script>
```

Window Object

```
1 <template>
2   <div class="name">
3     {{ nickName }}
4   </div>
5 </template>
6
7 <script>
8 export default {
9   data() {
10     const { nickName } = window.myVueConfig;
11     return Object.assign({}, windowProps);
12   }
13 }
14 </script>
```


Communication



Legacy

Vue

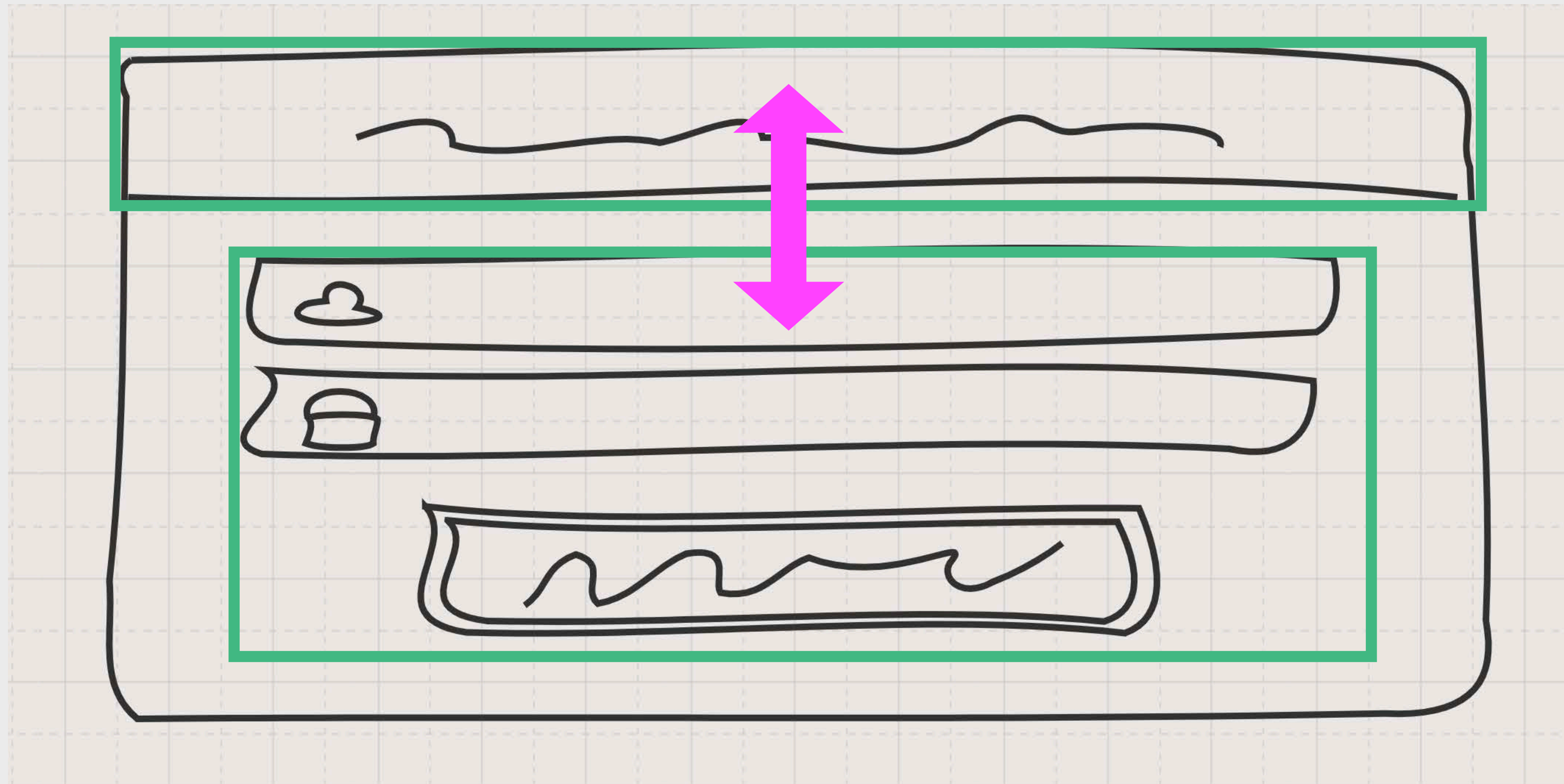
jQuery Events

```
1 <script>
2   $('#input').on('change', function(ev) {
3       $(document).trigger('input-change', ev.target.value);
4   });
5 </script>
```

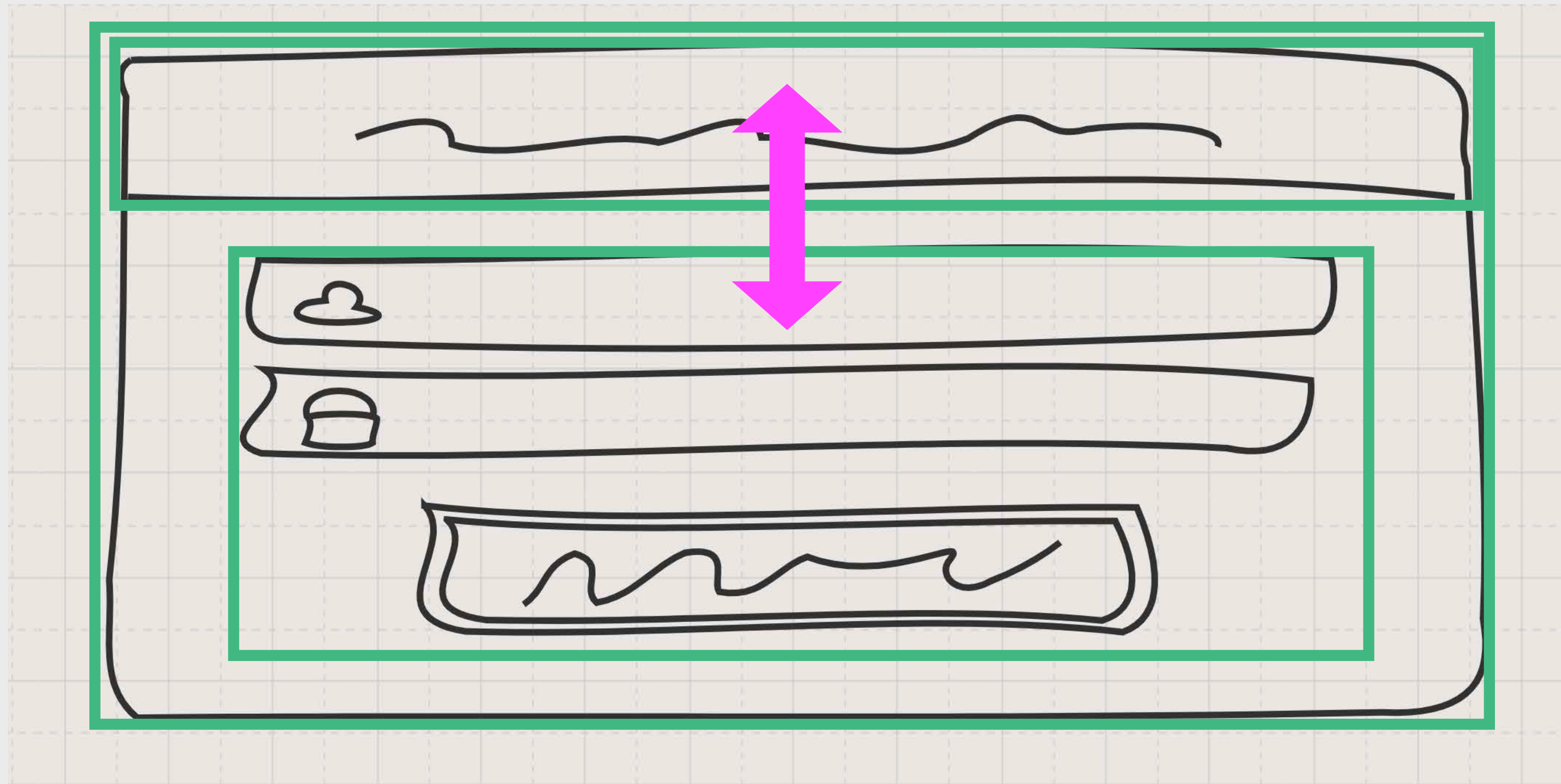
JavaScript Events

```
1 <script>
2   document.querySelector('#input').addEventListener('change', function(ev) {
3     var customEvent = new CustomEvent('input-change', {
4       detail: {
5         nickName: ev.target.value
6       }
7     });
8     document.dispatchEvent(customEvent);
9   });
10 </script>
```

Communication



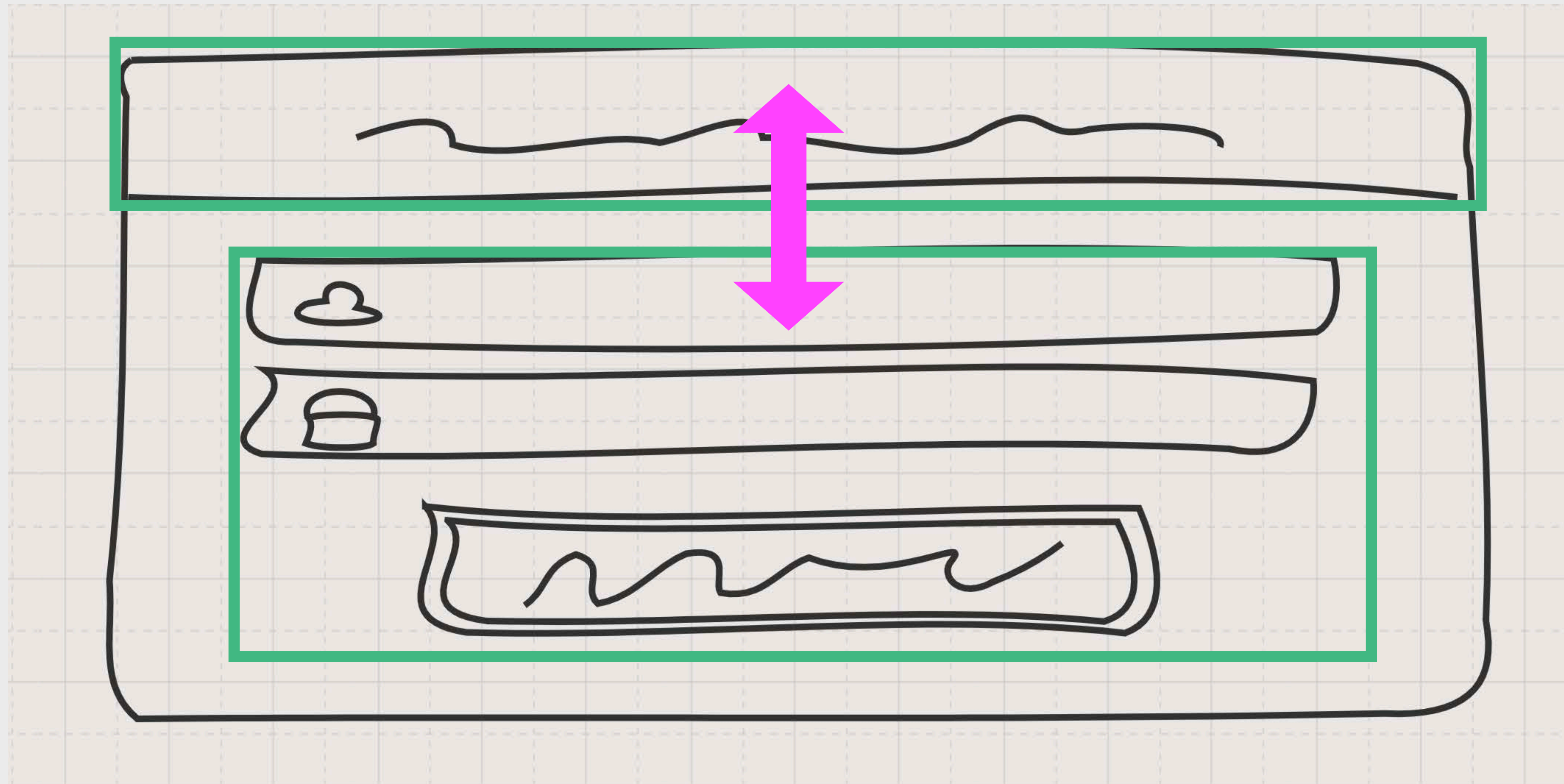
Communication



Vuex Submodules

```
1 const moduleA = {
2   state: { ... },
3   mutations: { ... },
6 }
7
8 const moduleB = {
9   state: { ... },
10  mutations: { ... },
12 }
13
14 const store = new Vuex.Store({
15   modules: {
16     a: moduleA,
17     b: moduleB
18   }
19 })
20
21 store.state.a // -> `moduleA`'s state
22 store.state.b // -> `moduleB`'s state
```

Communication



Vue Global Eventbus

```
1 <script>
2   // Component 1
3   this.$eventBus.$emit('input-changed', data);
4
5   // Component 2
6   this.$eventBus.$on('input-changed', (data) => {
7     // do something
8   });
9 </script>
```


**That's how you can
migrate. But why
should you?**

clean, maintainable
and testable code



**What could go
wrong?**

Deadlines

clean, maintainable
and testable code



Deadlines

clean, maintainable
and testable code

**Requirement
Changes**



Deadlines

clean, maintainable
and testable code

**Workarounds
for Bugs**

**Requirement
Changes**



Deadlines

**Team Member
Changes**

clearly, maintainable
and testable code

**Requirement
Changes**

**Workarounds
for Bugs**



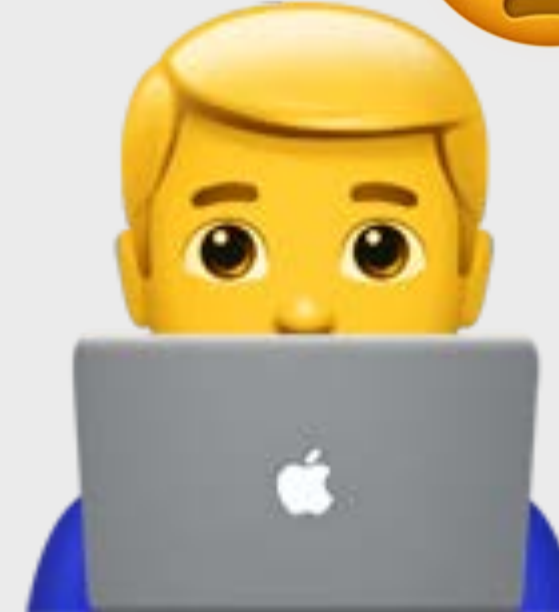
Deadlines

**Team Member
Changes**

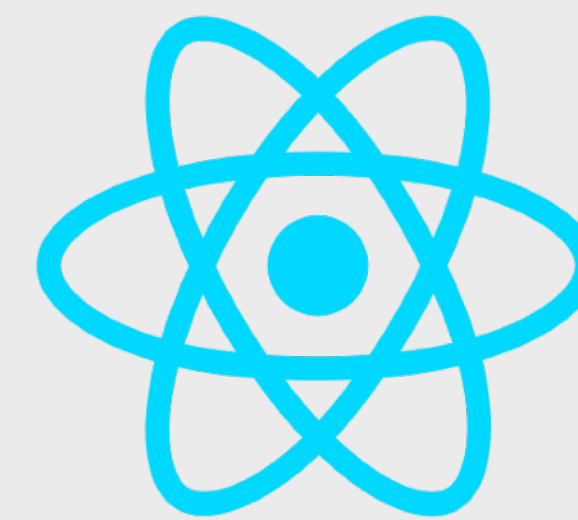
clearly, maintainable
and testable code

**Requirement
Changes**

**Workarounds
for Bugs**



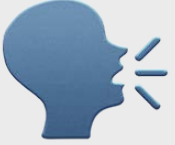




Pro Tipps

 Make a plan

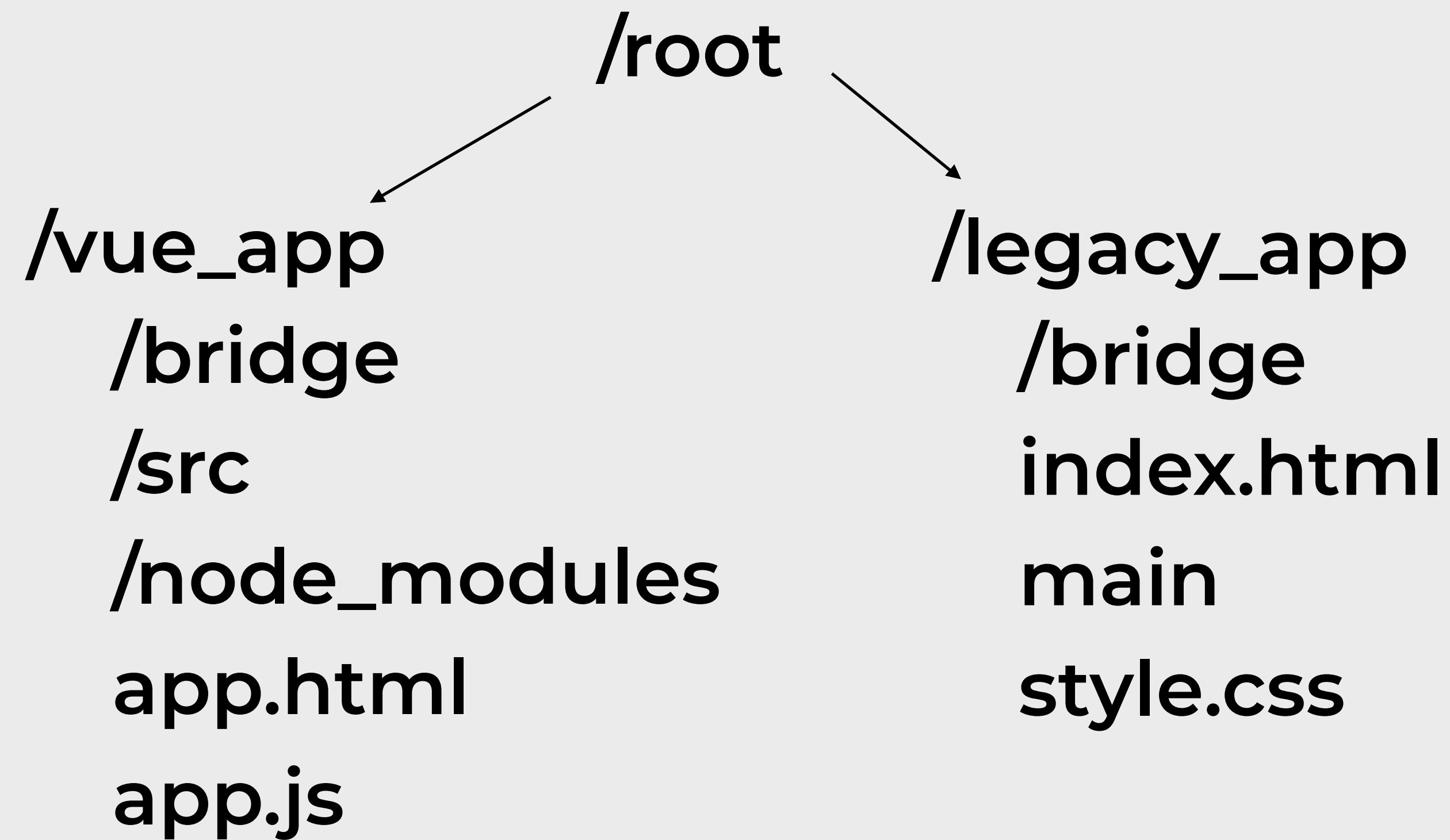
Pro Tipps

 **Make a plan**

 **Folder Structure**



Folder Structure



Pro Tipps

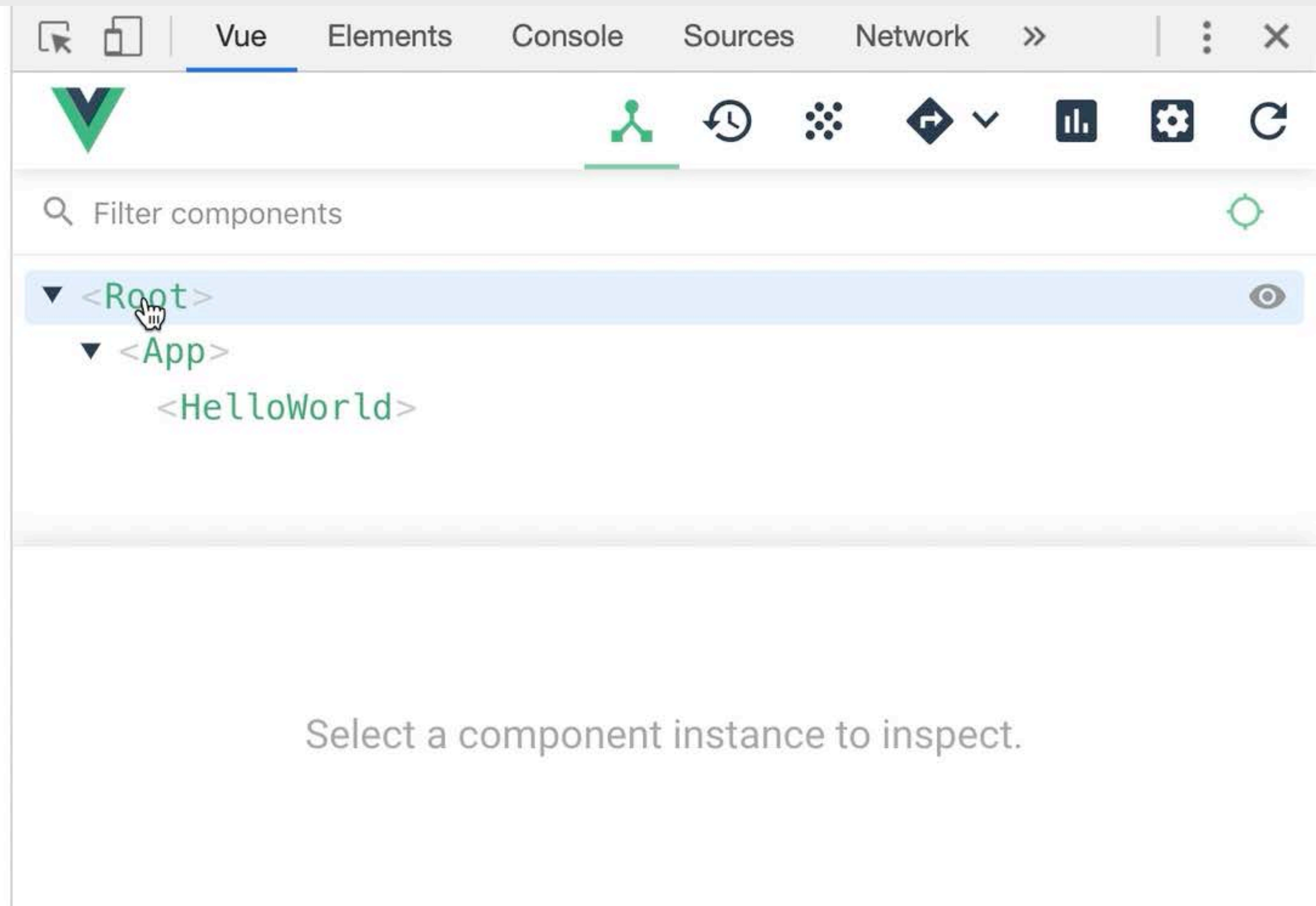
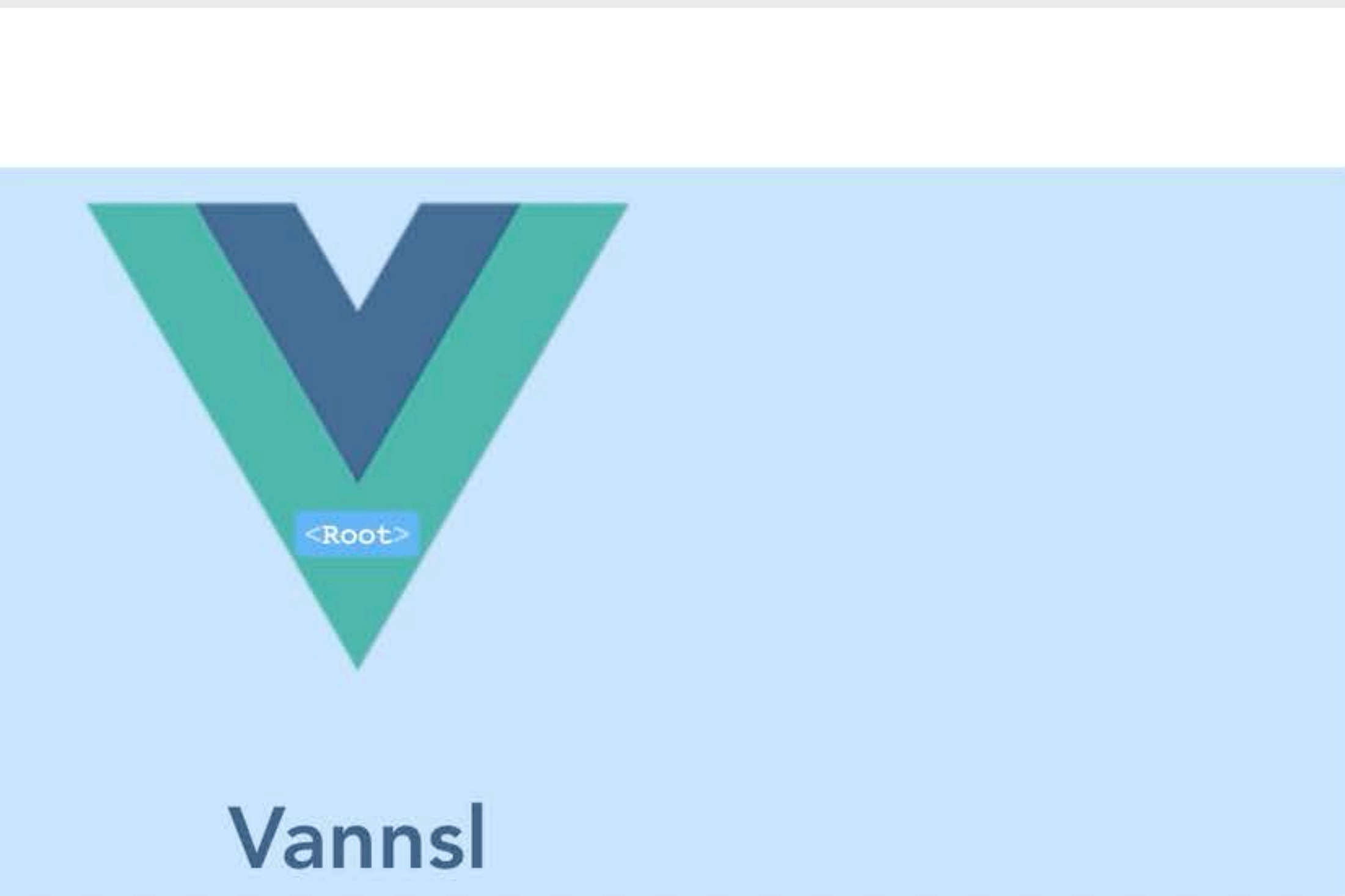
 Make a plan

 Folder Structure

 Chrome Dev Tools



Chrome Dev Tools



Holistics

easyship

Snipcart

Gitlab

Companies

Glovoapp

Dawex

SinnerSchrader

Unbabel

@vannsl



Approachable



Performant



Easy to Import and Check Out

Why not?

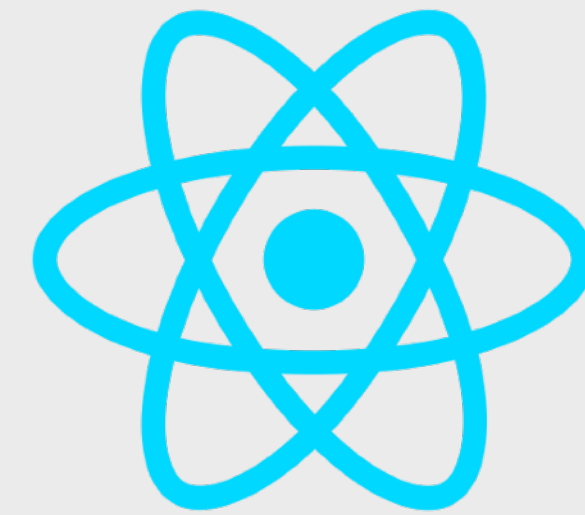
1. Find your Framework



Angular CLI

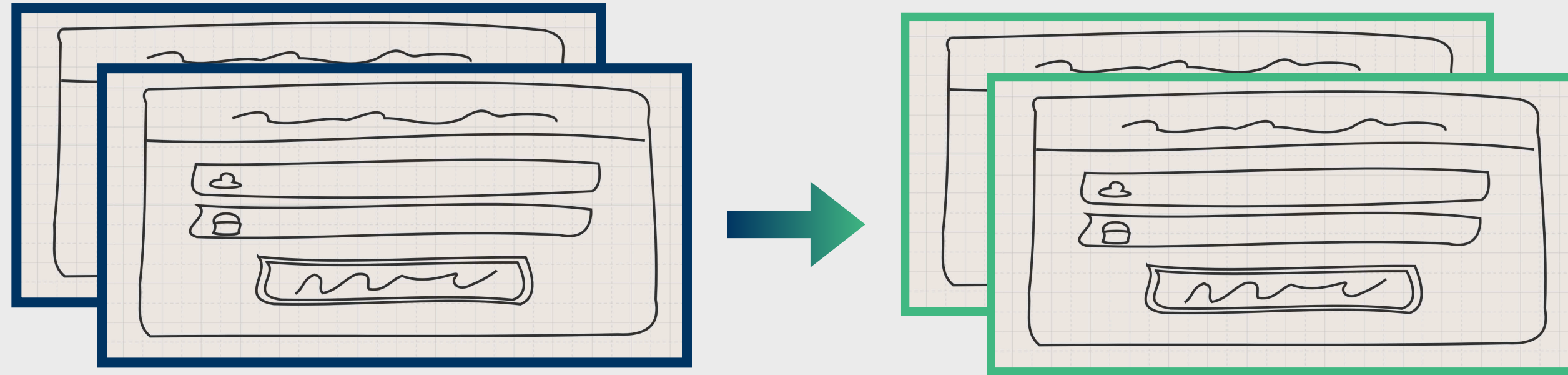


Vue CLI

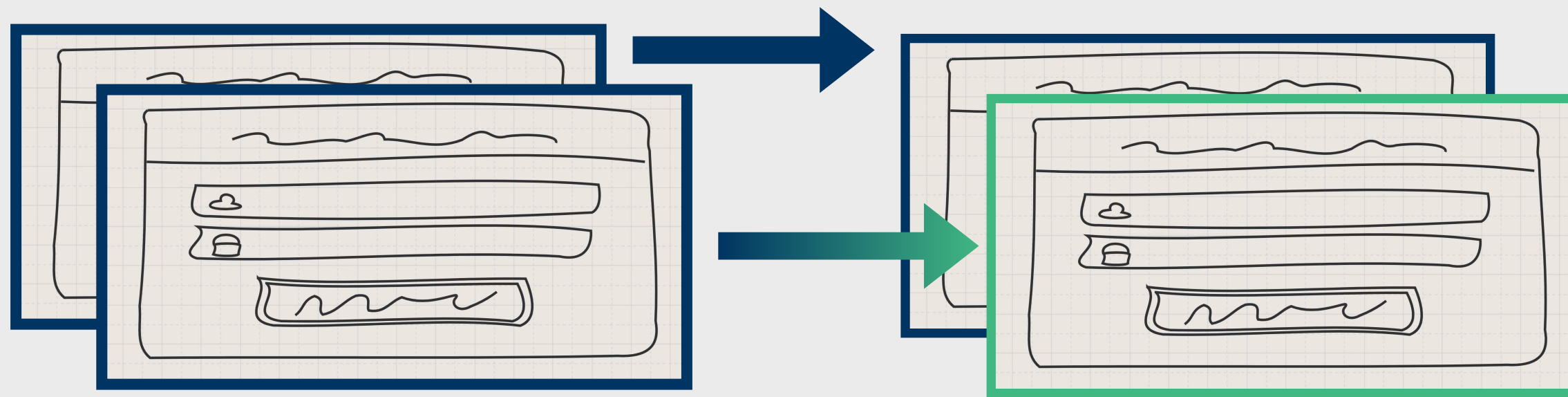


Create React App

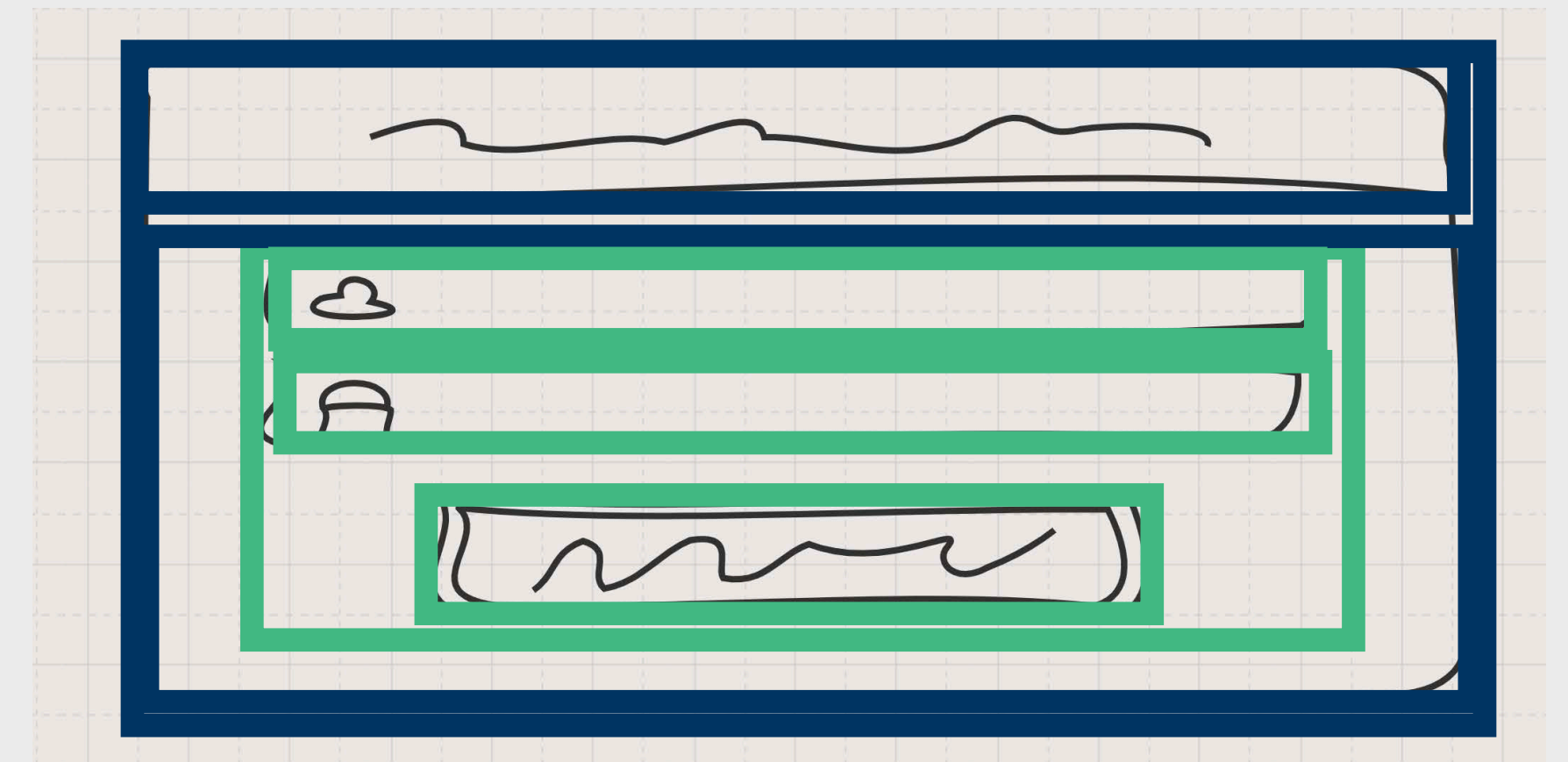
2. Decide on a Method



Full Rewrite

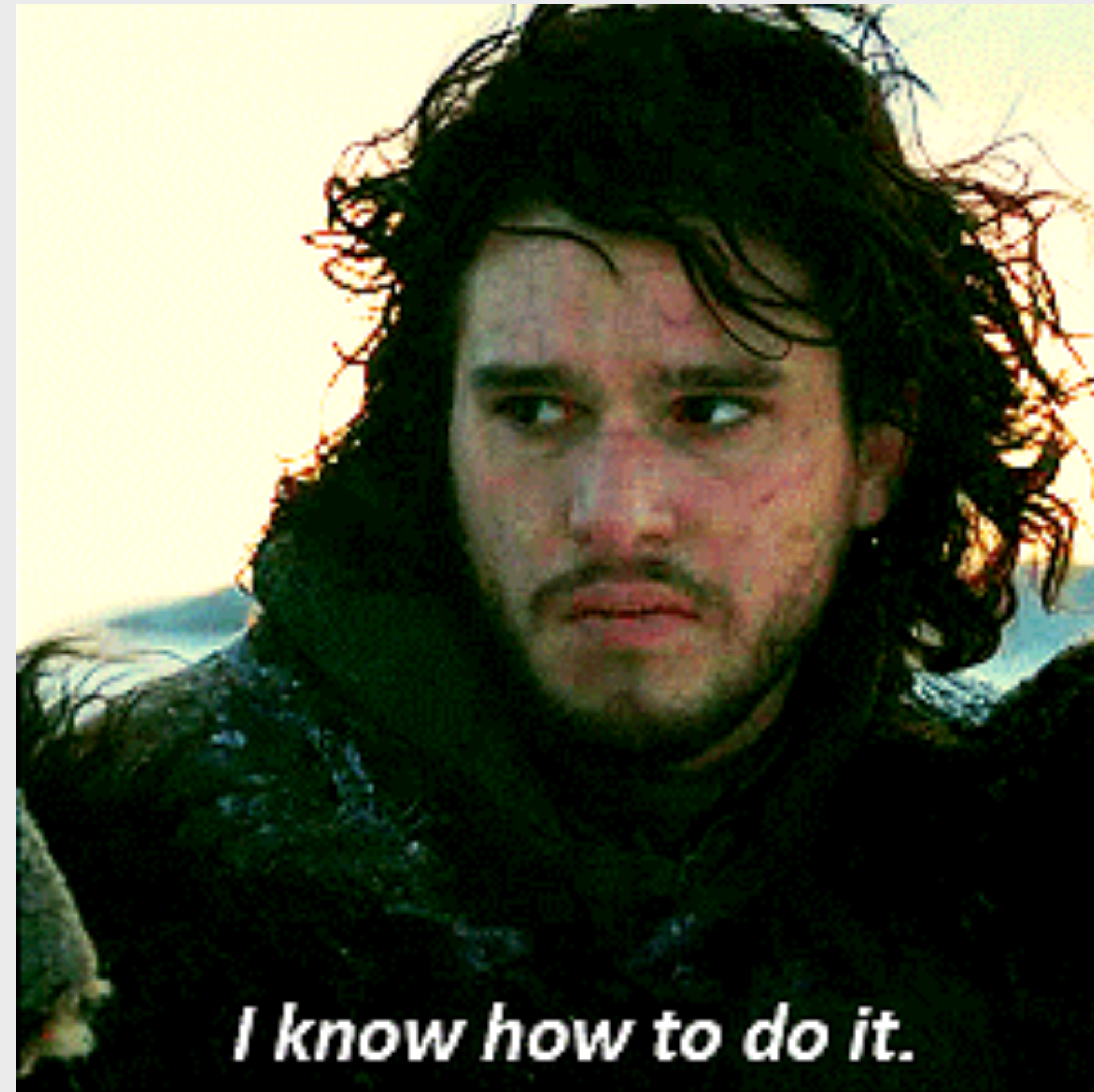


Separated Pages



Hybrid

3. Do it



Thanks



Vanessa Böhner



@vannsl



@vannsl



vannsl.io