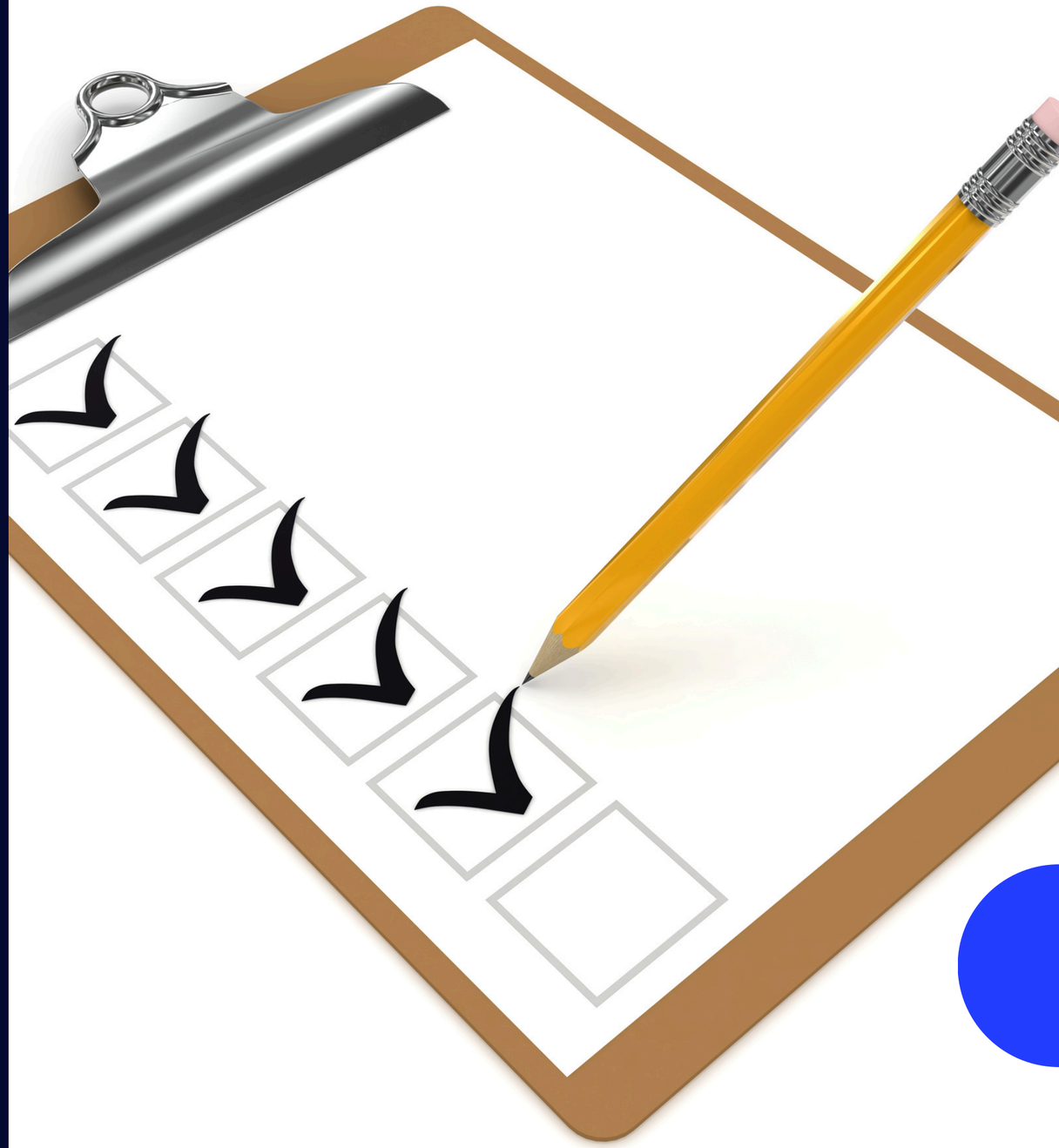
Intro to React

Section Two

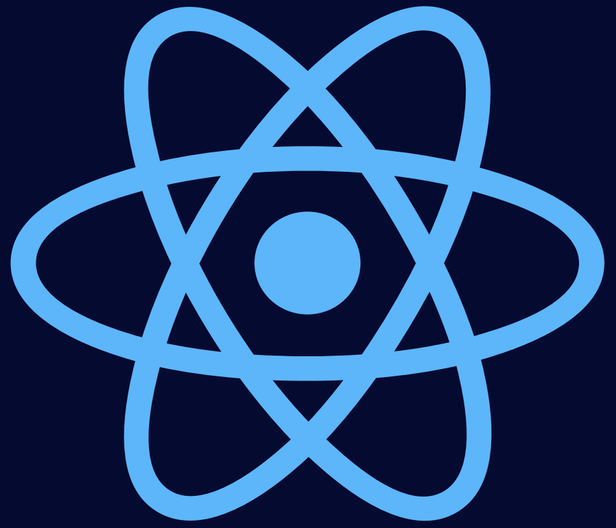
In this section

- Why React
- React Concepts
- JSX
- Decisions
- React Dev tools
- Typescript Intro



Already familiar with React?

Skip to section 3!



What is react?

What is react?

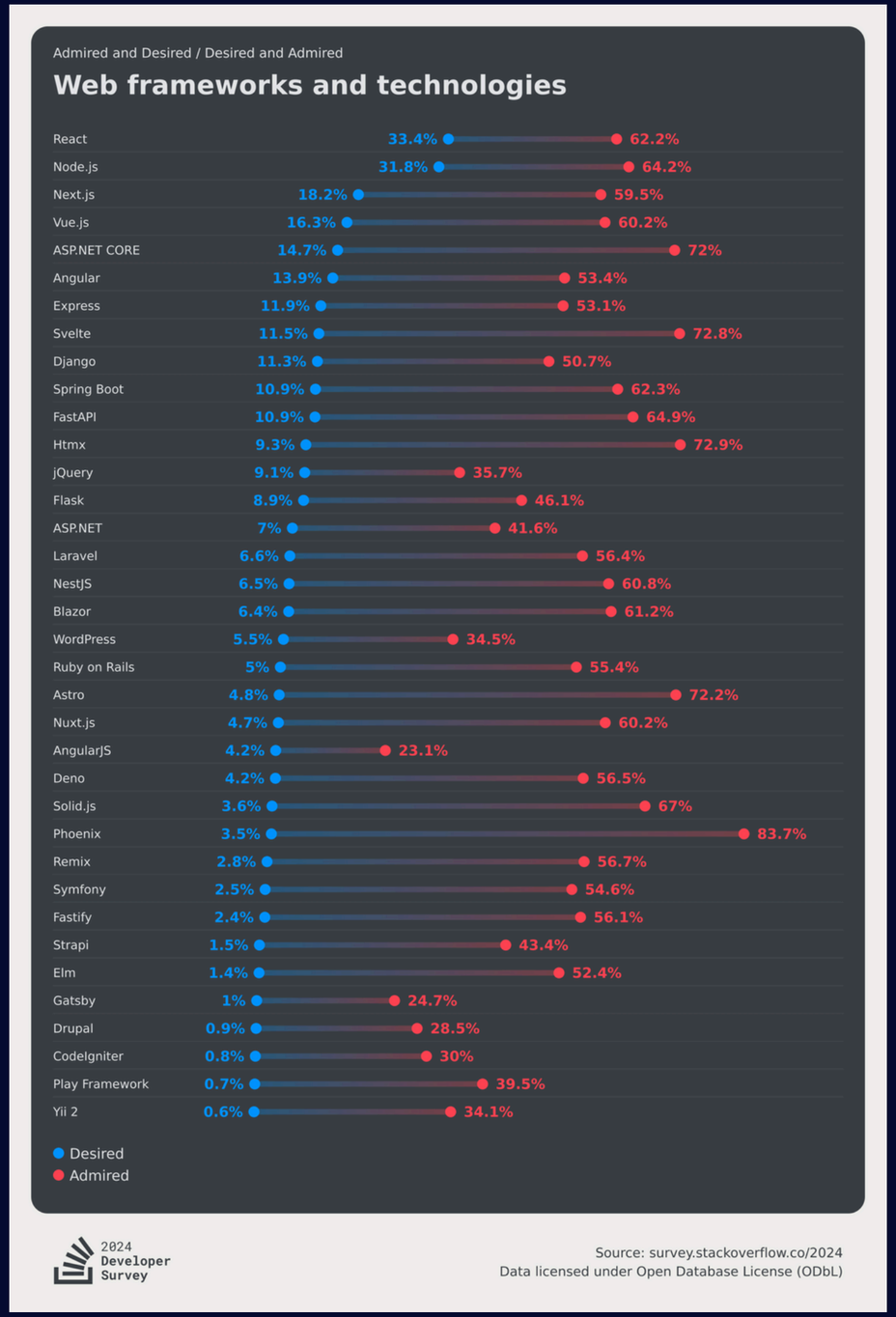
Javacript Library

For building

User interfaces

NETFLIX

Popularity


Admired and Desired / Desired and Admired
Web frameworks and technologies
React 33.4% 62.2%
Node.js 31.8% 64.2%
Next.js 18.2% 59.5%
Vue.js 16.3% 60.2%
ASP.NET CORE 14.7% 72%
Angular 13.9% 53.4%
Express 11.9% 53.1%
Svelte 11.5% 72.8%
Django 11.3% 50.7%
Spring Boot 10.9% 62.3%
FastAPI 10.9% 64.9%
Htmx 9.3% 72.9%
jQuery 9.1% 35.7%
Flask 8.9% 46.1%
ASP.NET 7% 41.6%
Laravel 6.6% 56.4%
NestJS 6.5% 60.8%
Blazor 6.4% 61.2%
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Ruby on Rails 5% 55.4%
Astro 4.8% 72.2%
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AngularJS 4.2% 23.1%
Deno 4.2% 56.5%
Solid.js 3.6% 67%
Phoenix 3.5% 83.7%
Remix 2.8% 56.7%
Symfony 2.5% 54.6%
Fastify 2.4% 56.1%
Strapi 1.5% 43.4%
Elm 1.4% 52.4%
Gatsby 1% 24.7%
Drupal 0.9% 28.5%
CodeIgniter 0.8% 30%
Play Framework 0.7% 39.5%
Yii 2 0.6% 34.1%
Desired
Admired
2024 Developer Survey
Source: survey.stackoverflow.co/2024
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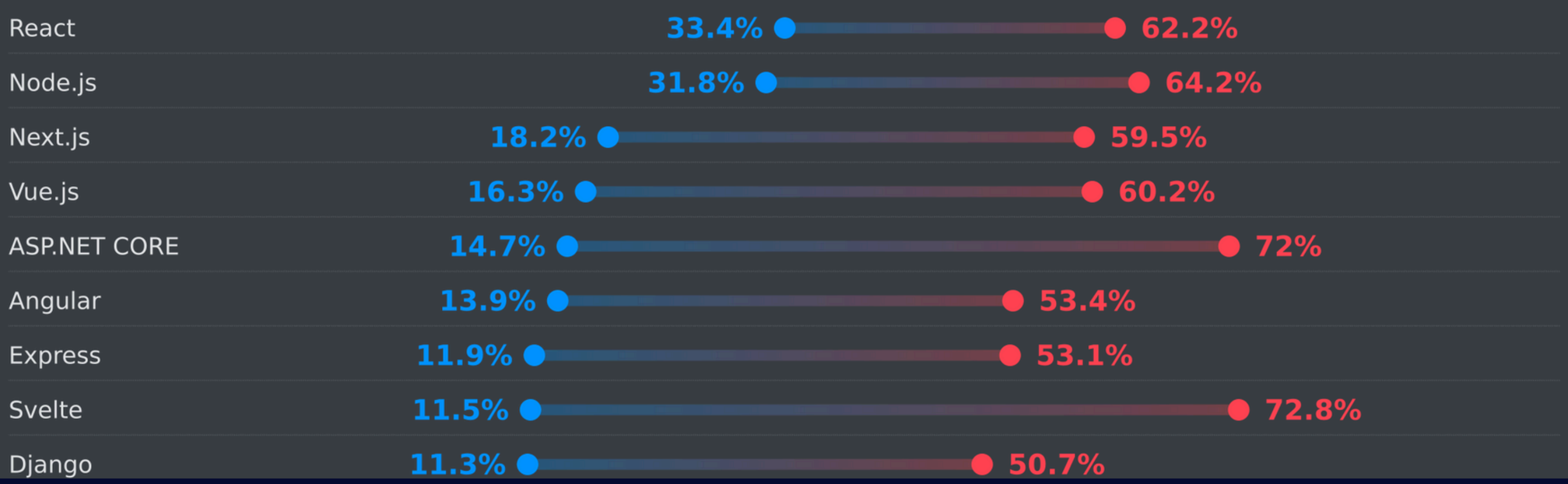
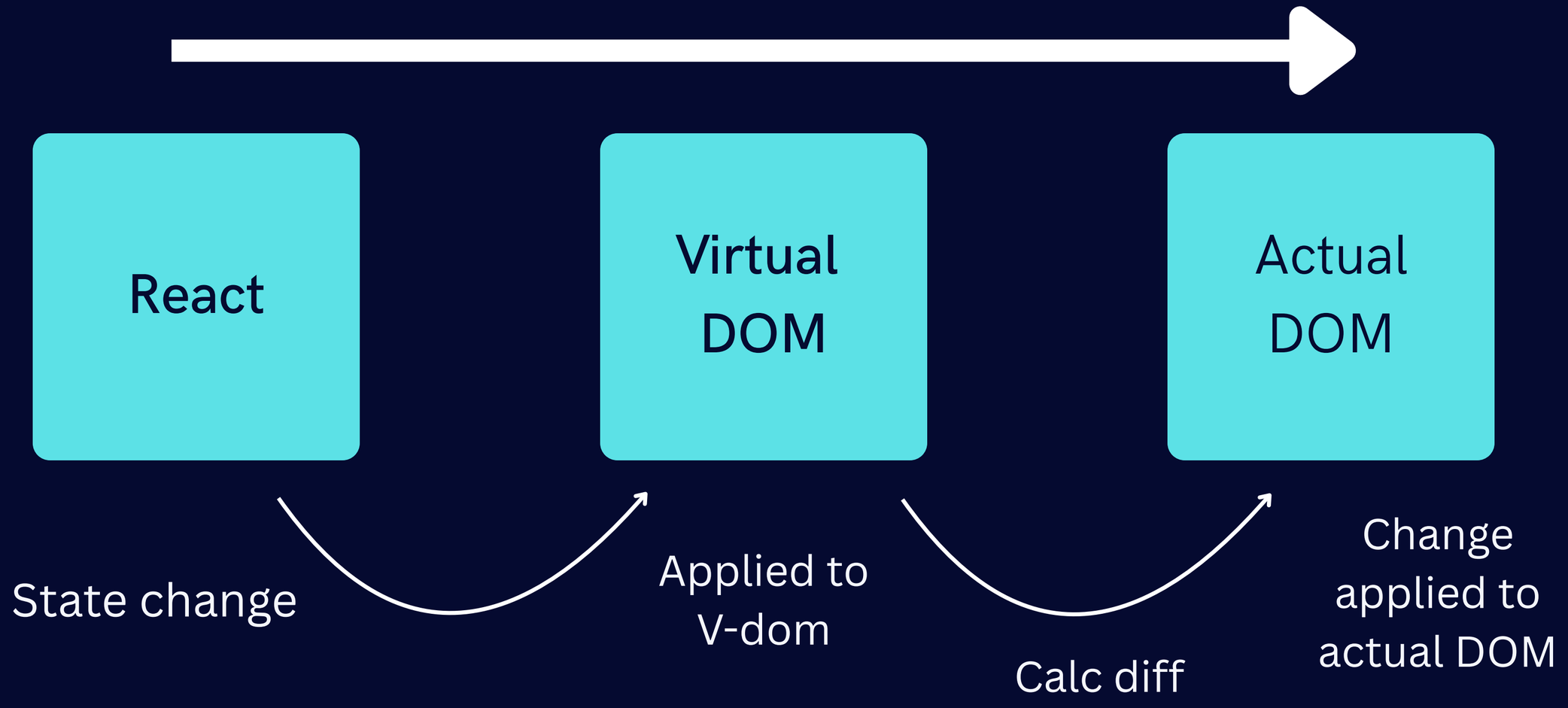
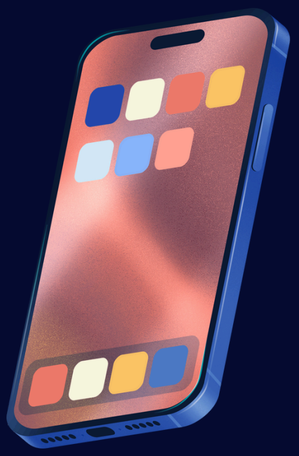
Admired and Desired / Desired and Admired

Web frameworks and technologies



Speed


React
Virtual DOM
Actual DOM
State change
Applied to V-dom
Calc diff
Change applied to actual DOM



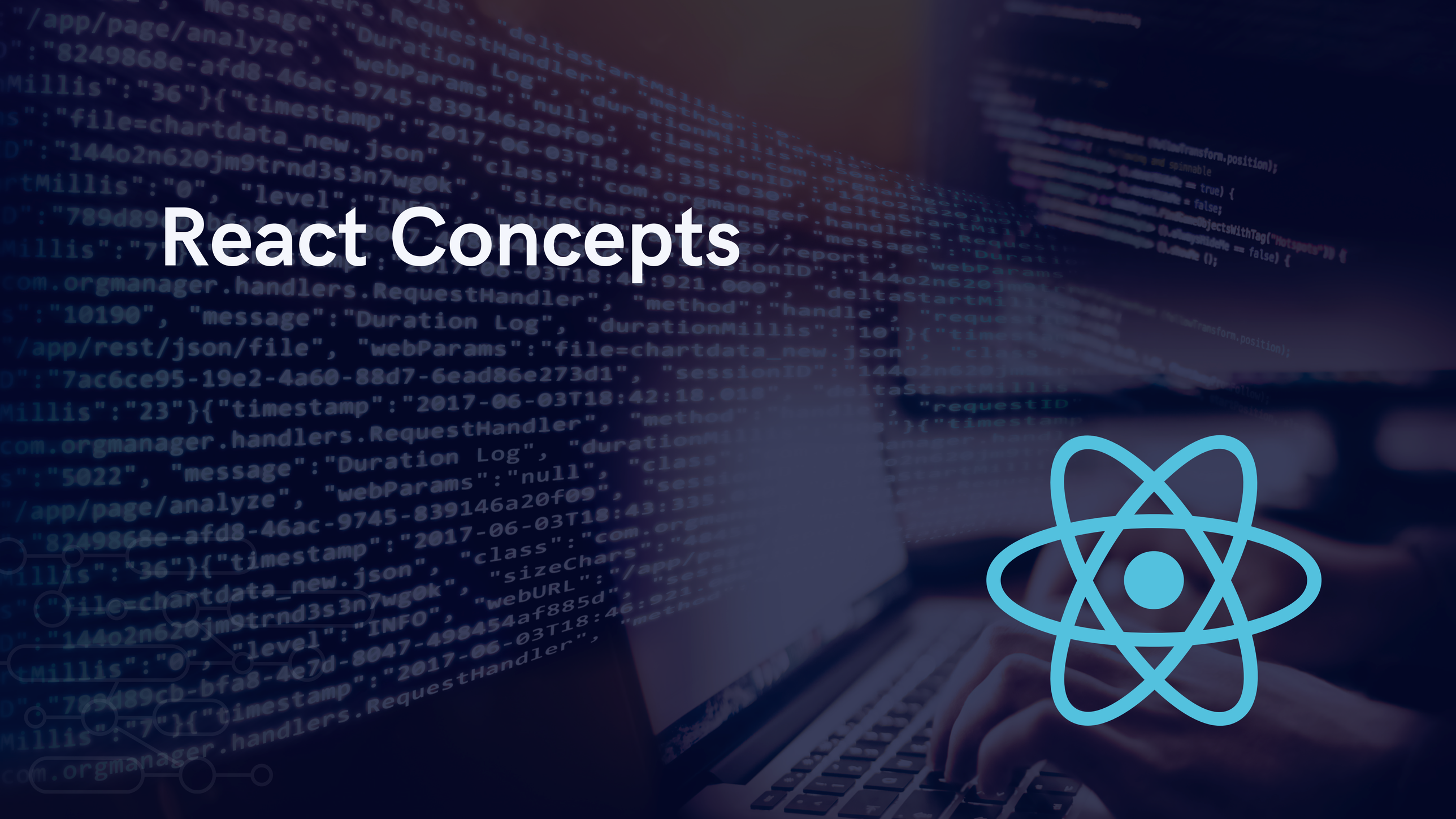
Learn once... use everywhere

Easy to learn

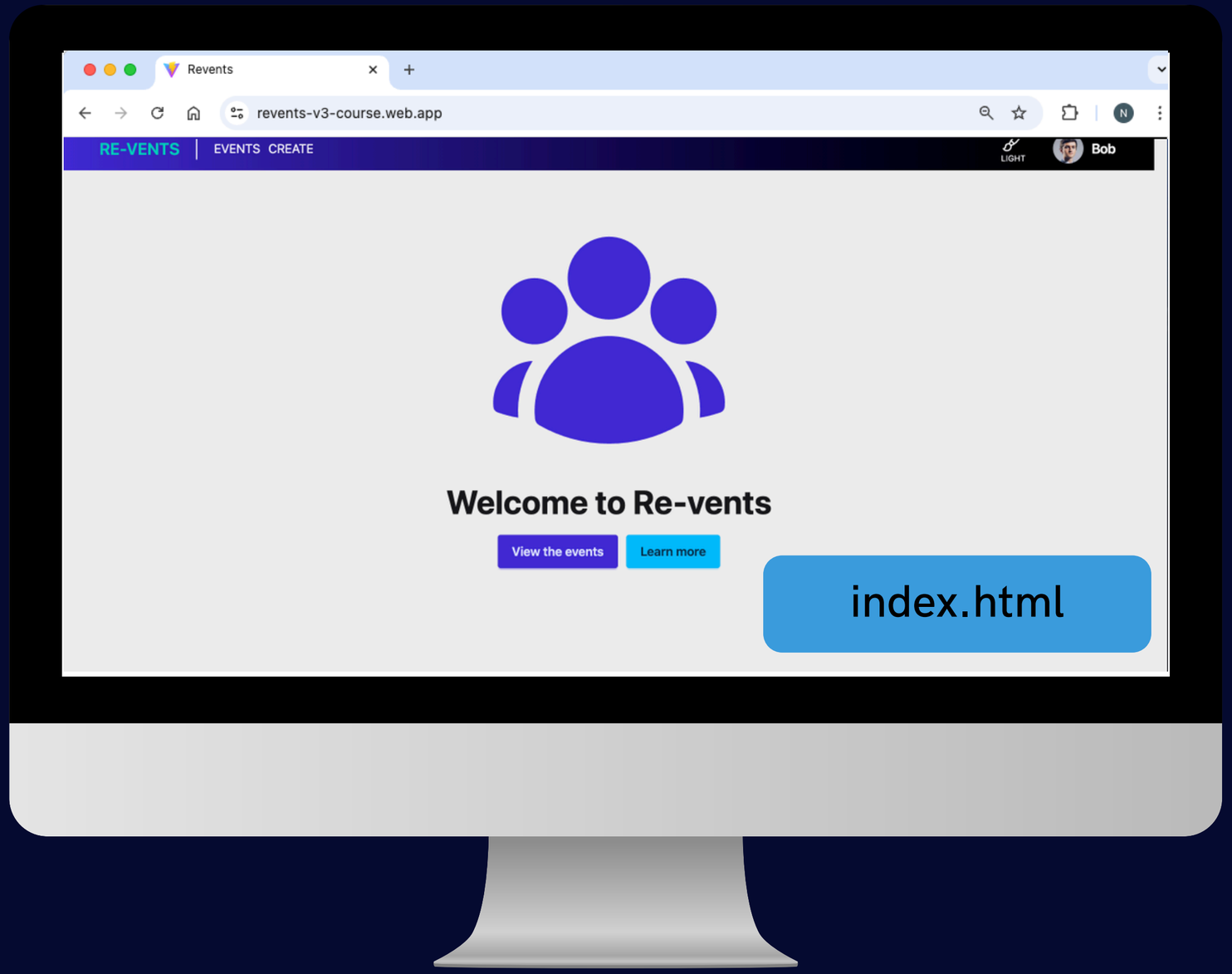
- Small API
- React Hooks
- JSX

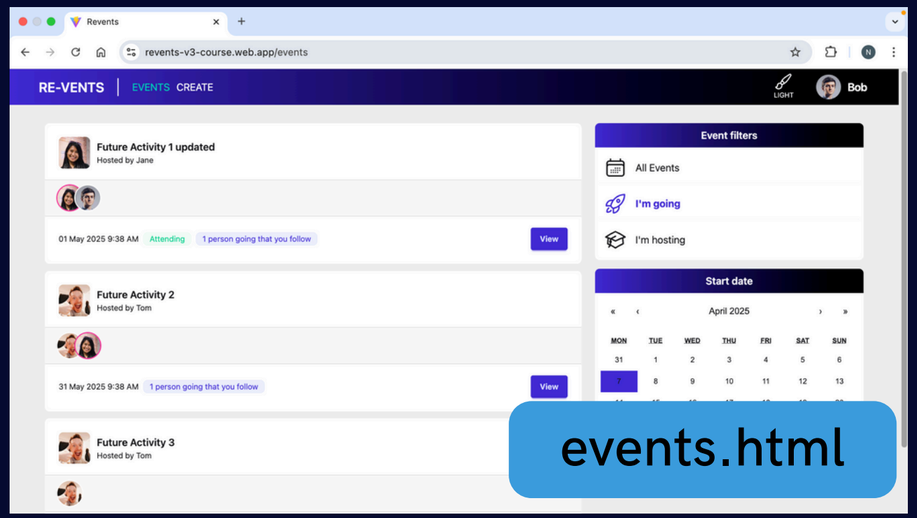

Developer Community

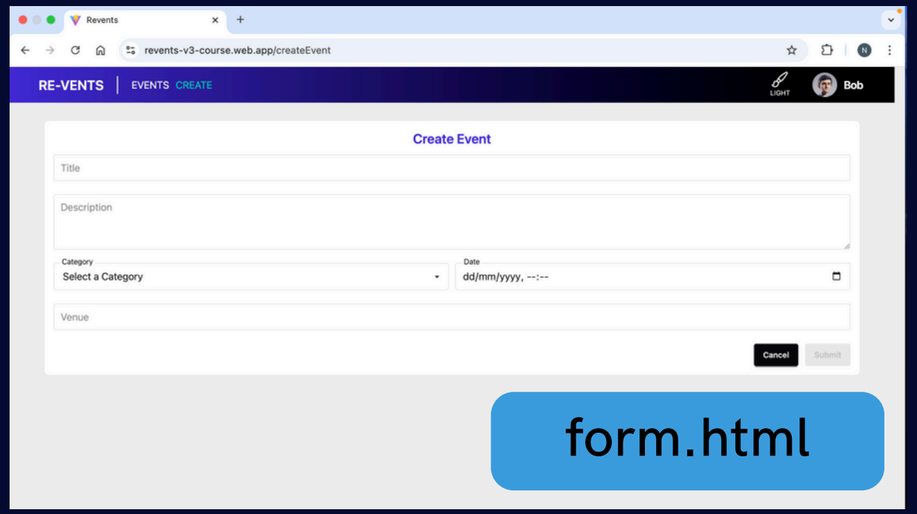
React Concepts

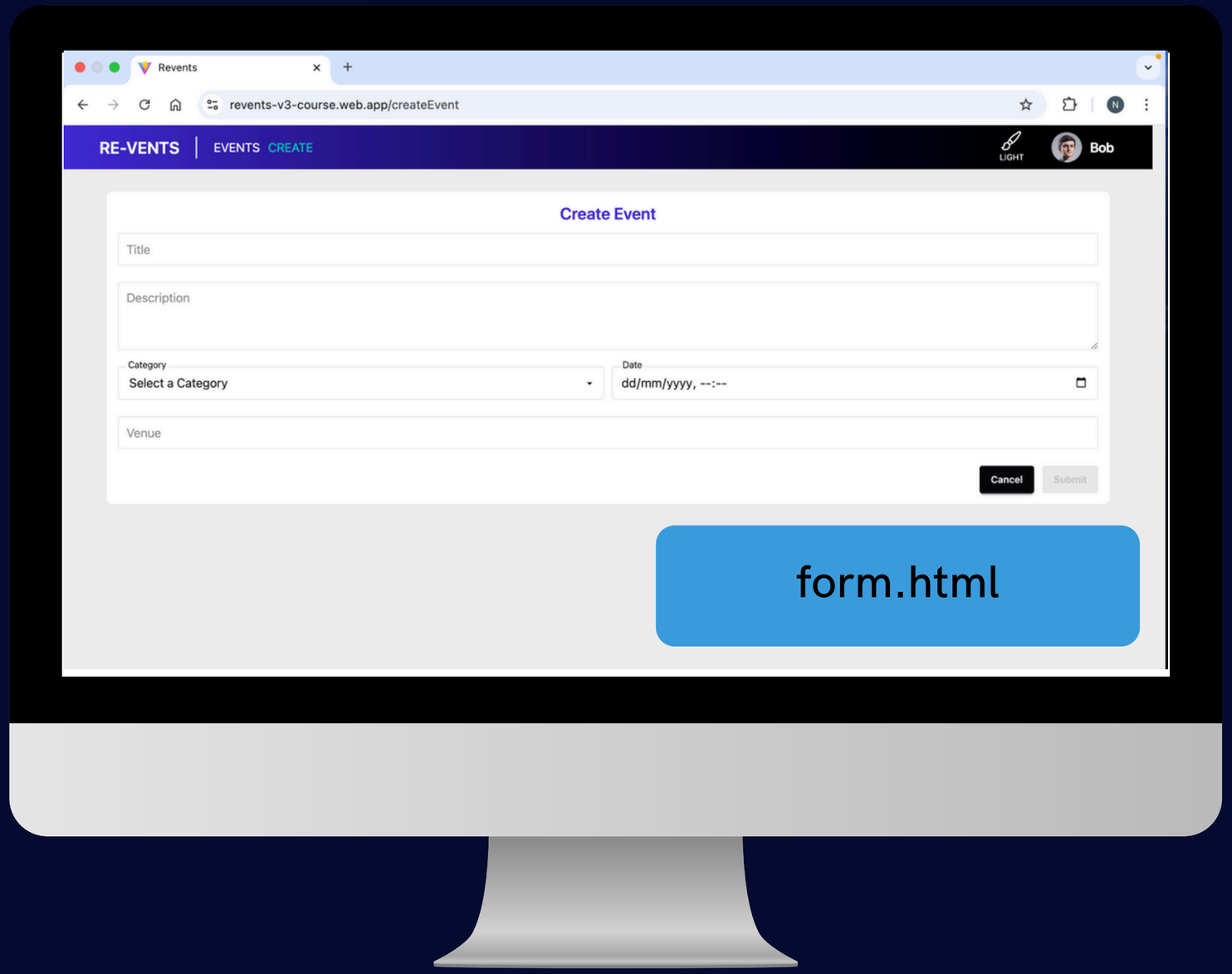


Single page applications (SPAs)


Revents
revents-v3-course.web.app
RE-VENTS
EVENTS CREATE
LIGHT
Bob
Welcome to Re-vents
View the events
Learn more
index.html


Revents
revents-v3-course.web.app/events
RE-VENTS
EVENTS CREATE
LIGHT
Bob
Future Activity 1 updated
Hosted by Jane
01 May 2025 9:38 AM
Attending
1 person going that you follow
View
Future Activity 2
Hosted by Tom
31 May 2025 9:38 AM
1 person going that you follow
View
Future Activity 3
Hosted by Tom
Event filters
All Events
I'm going
I'm hosting
Start date
April 2025
MON
TUE
WED
THU
FRI
SAT
SUN
events.html


Revents
revents-v3-course.web.app/createEvent
RE-VENTS
EVENTS CREATE
LIGHT
Bob
Create Event
Title
Description
Category
Select a Category
Date
dd/mm/yyyy, --:--
Venue
Cancel
Submit
form.html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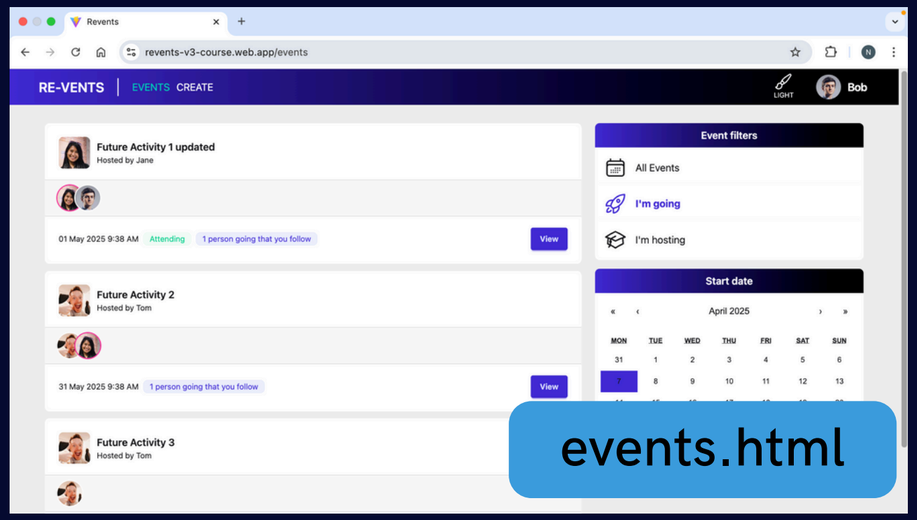
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I'm hosting
Start date
April 2025
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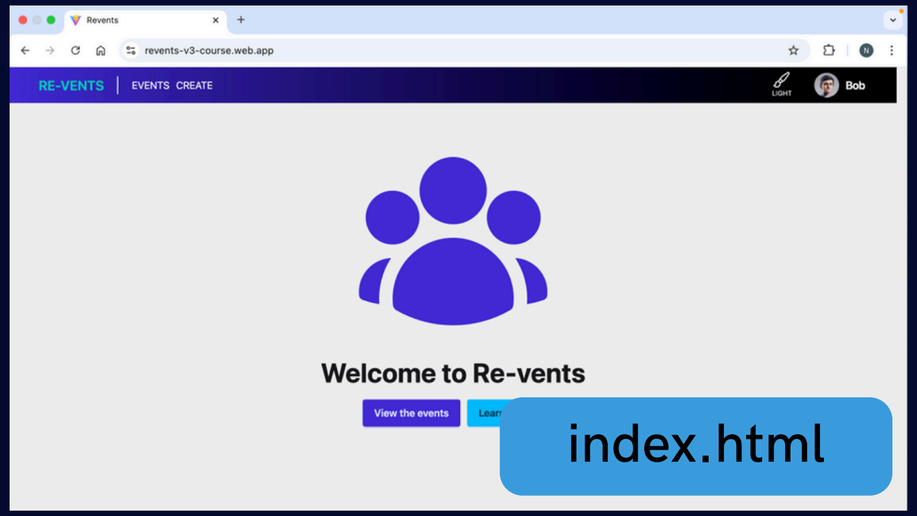
events.html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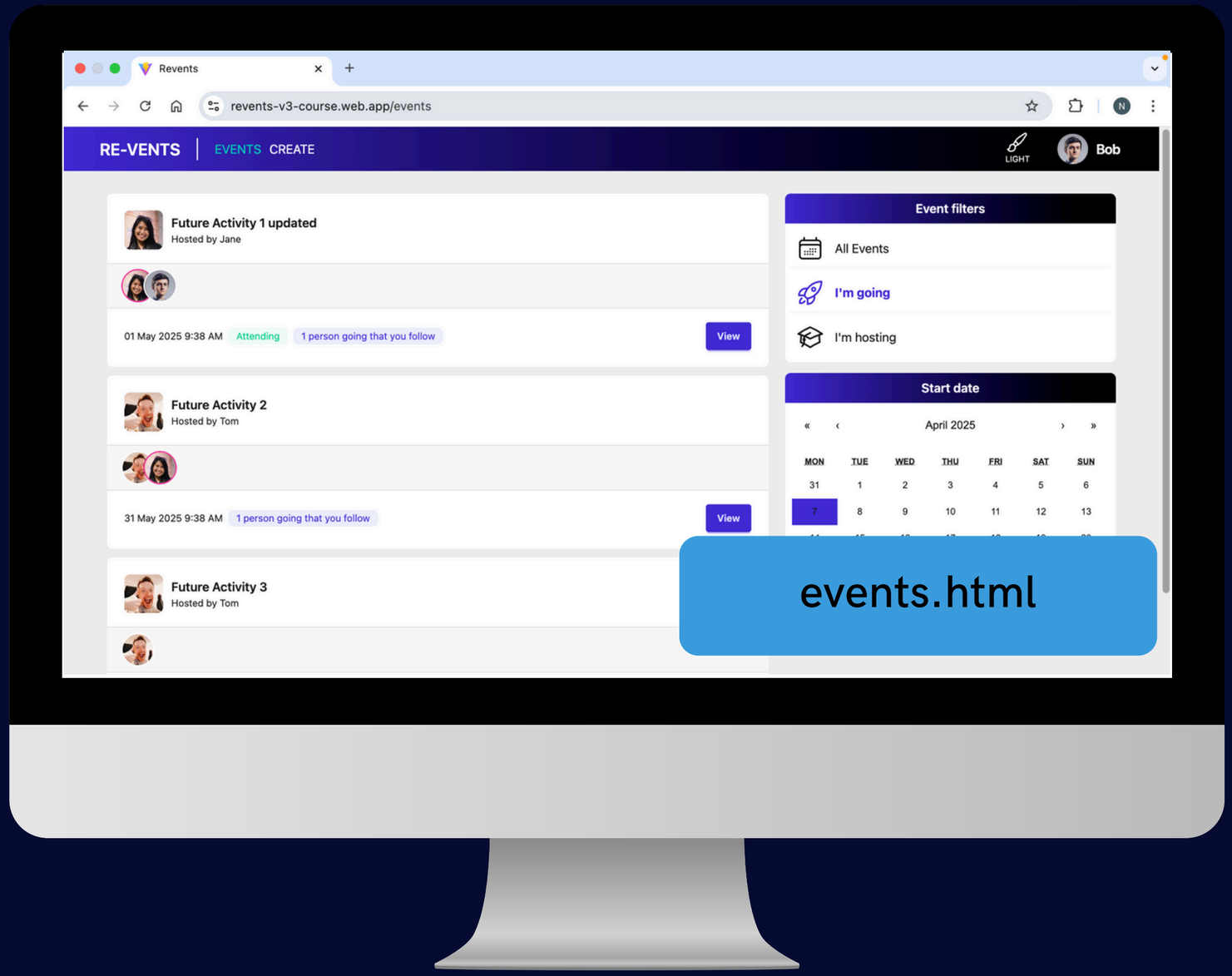
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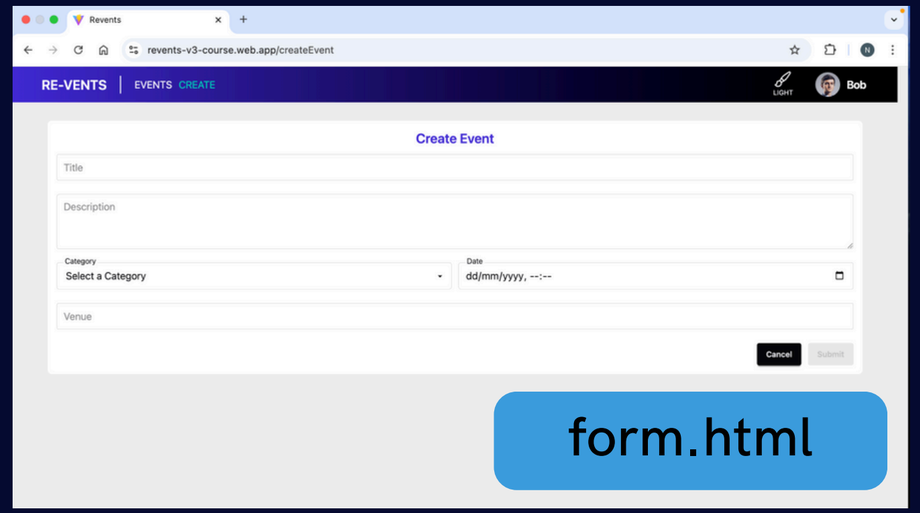
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dd/mm/yyyy, --:--
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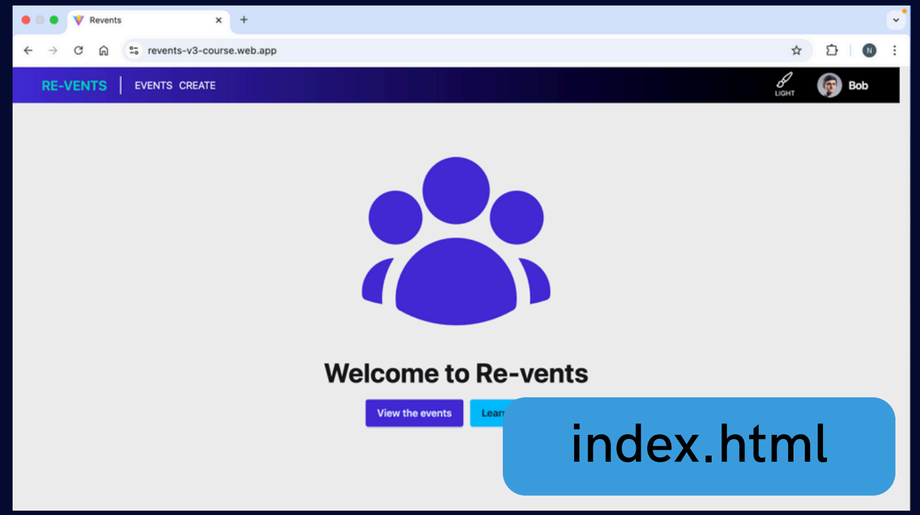
Submit
form.html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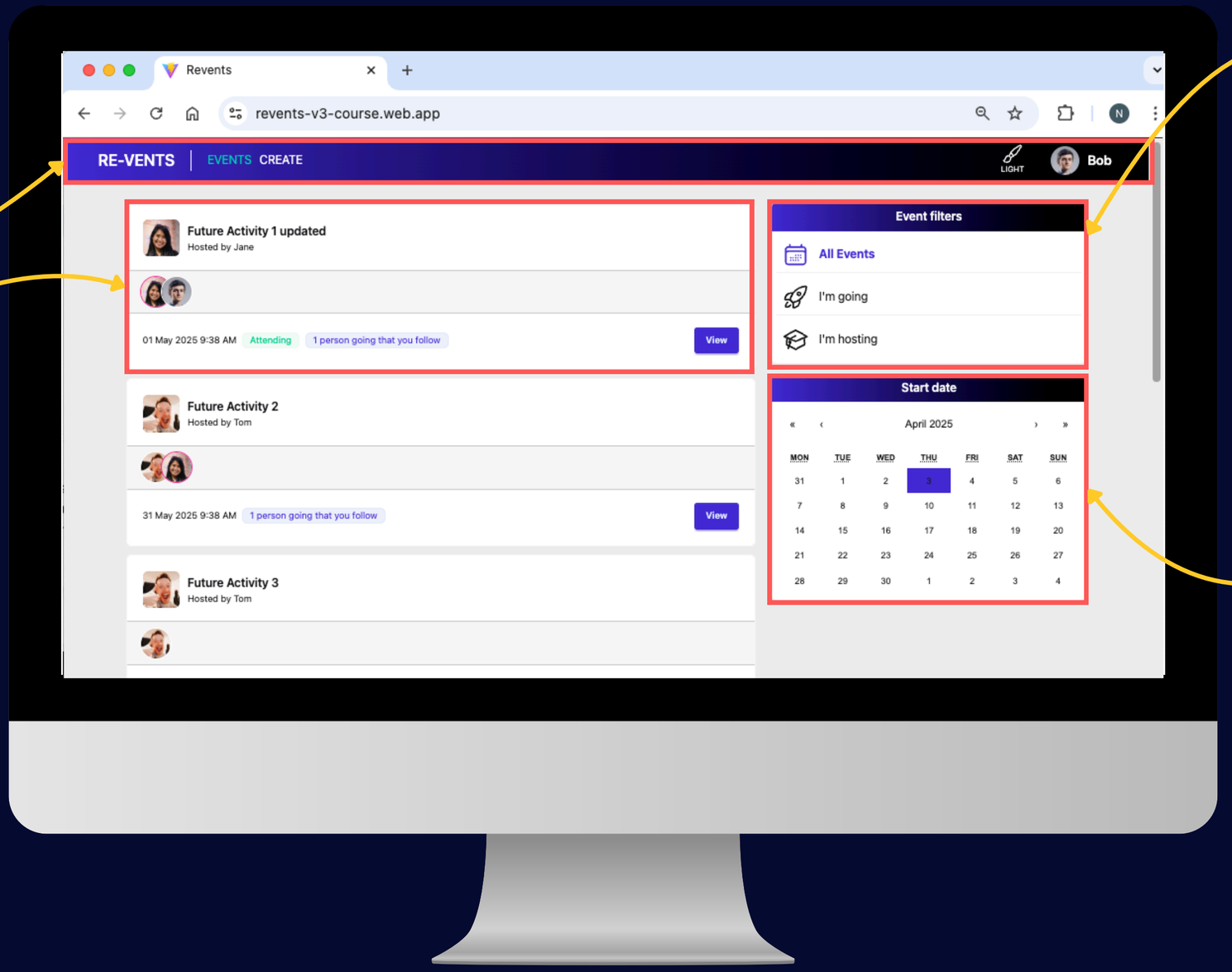
SPA

Nav Component

EventCard Component

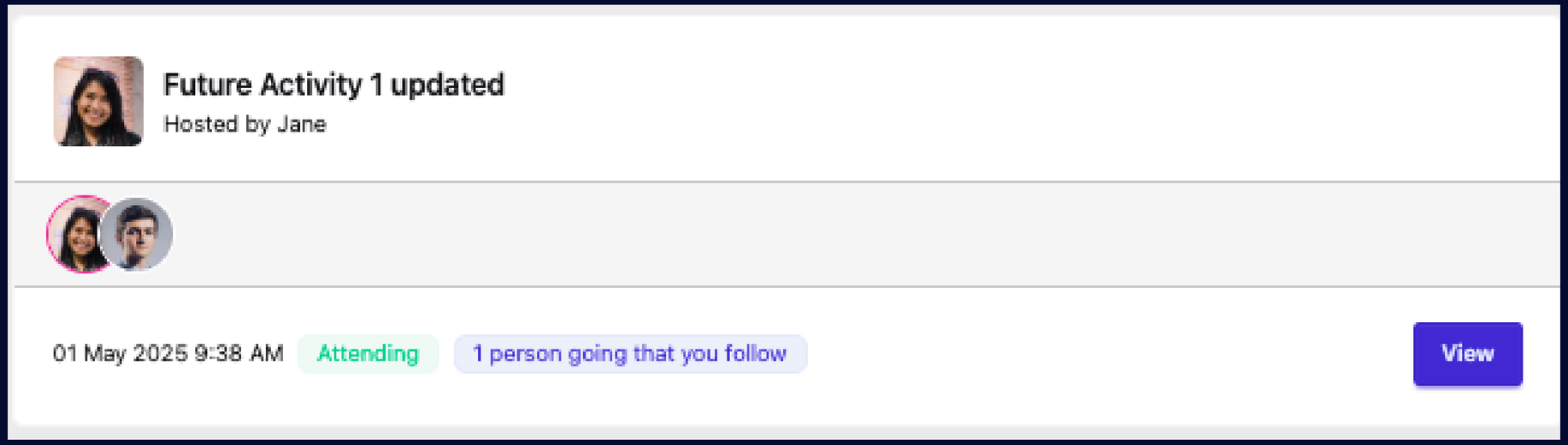
Filter Component

Calendar Component



Index.html

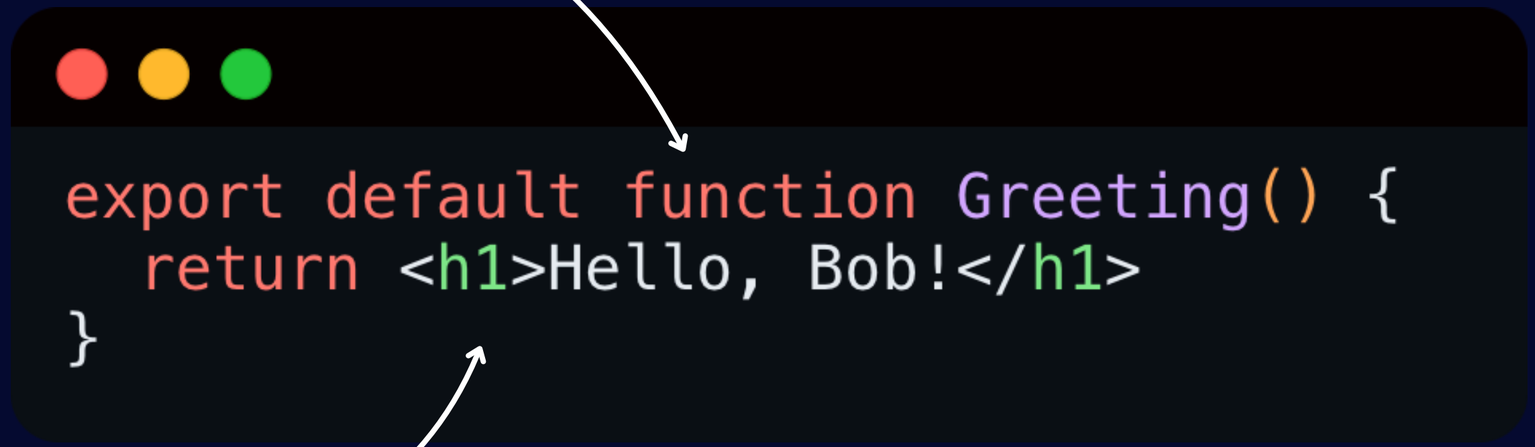
EventCard.tsx



HTML + CSS + JS

The anatomy of a component

Javascript function



Returns JSX

The anatomy of a component

Can receive props from parent

```
type GreetingProps = {
  name: string
}

export default function Greeting({ name }: GreetingProps) {
  return <h1>Hello, {name}!</h1>
}
```

Javascript code used in JSX inside curly brackets

Props passed as parameters to the function

The anatomy of a component

Can store state in memory of the component

Uses ‘className’ for css styling classes

State can be updated on button click event

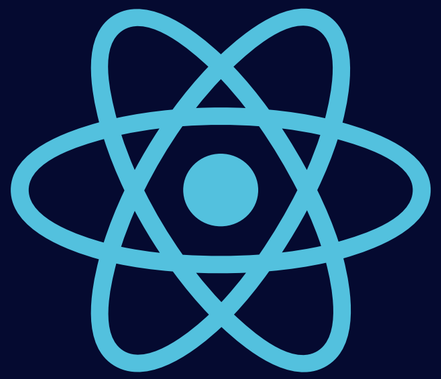
```tsx
import { useState } from 'react'

type GreetingProps = {
  name: string
}

export default function Greeting({ name }: GreetingProps) {
  const [isGreeting, setIsGreeting] = useState(true)

  return (
    <div className="p-4 border rounded">
      <h1 className="text-xl font-bold">
        {isGreeting ? `Hello, ${name}!` : `Goodbye, ${name}!`}
      </h1>
      <button
        onClick={() => setIsGreeting(!isGreeting)}
        className="mt-2 px-4 py-2 bg-blue-500 text-white rounded"
      >
        Toggle
      </button>
    </div>
  )
}
```

Component lifecycle



- Mounting
- Updating
- Unmounting

Component lifecycle

Mounting

Updating

Unmounting

Class component methods

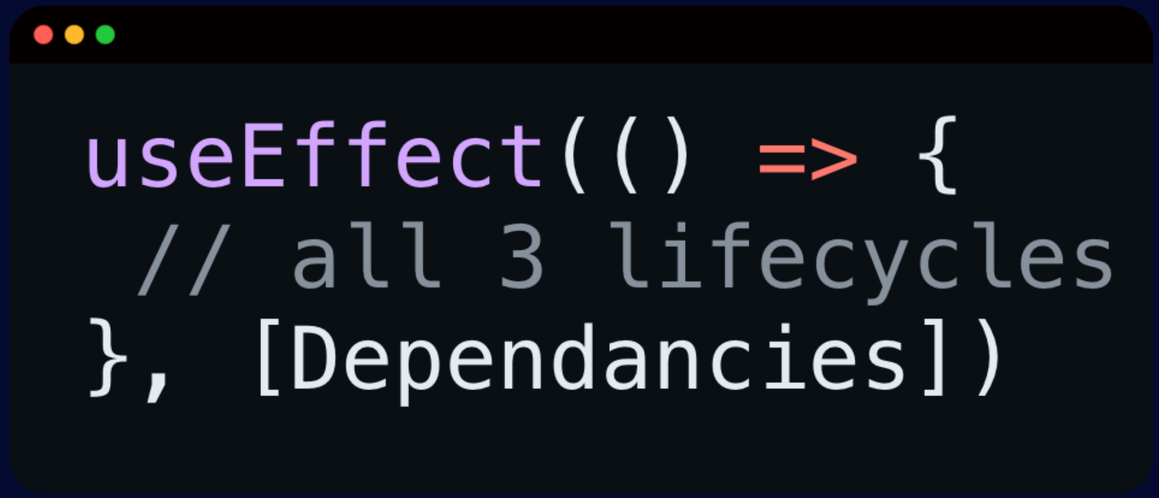
```
componentDidMount() {
  // Component has mounted.
}
```

```
componentDidUpdate() {
  // Component has finished updating
}
```

```
componentWillUnmount() {
  // Component is being removed from DOM
}
```

Component lifecycle

- Mounting
- Updating
- Unmounting



Hooks

useState	Adds local state to functional components.
useEffect	Runs side effects (e.g. data fetching, subscriptions).
useContext	Accesses values from React context.
useMemo	Memoizes expensive calculations.
useCallback	Memoizes a function so it doesn’t re-create on every render
useRef	Stores mutable values that persist across renders (often DOM refs)

Up next

Decisions made for this app

Decision fatigue

Decision fatigue

React is lightweight and unopinionated

Multiple ways to do the same thing

Developer environment

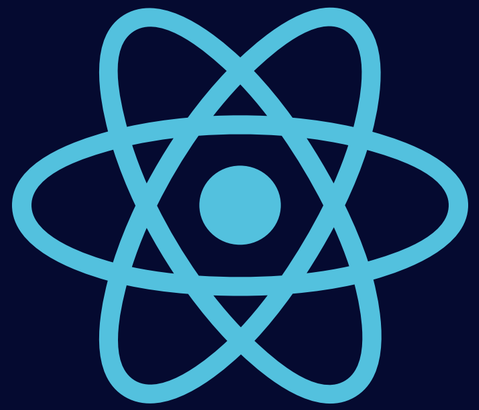
Alternatives

NextJS

React Router

Tanstack start

State management



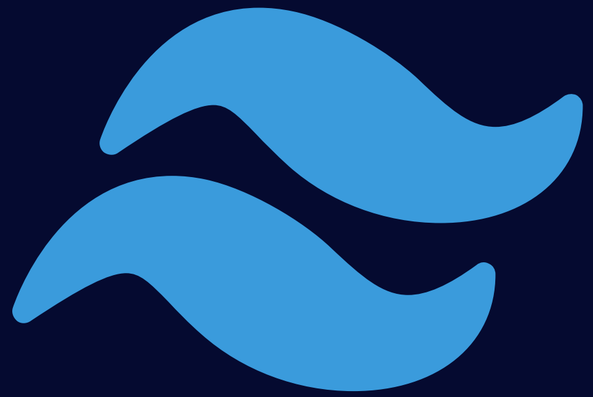
Plain react

React context

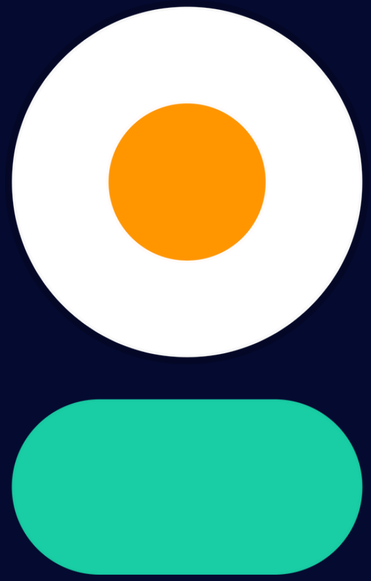
Redux

Centralised state

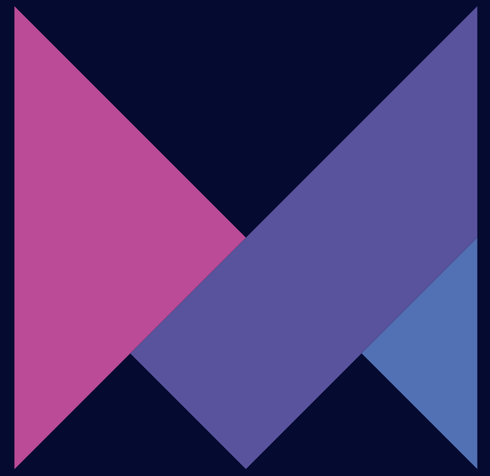
Styling



Tailwind



DaisyUI



Motion

“Backend”