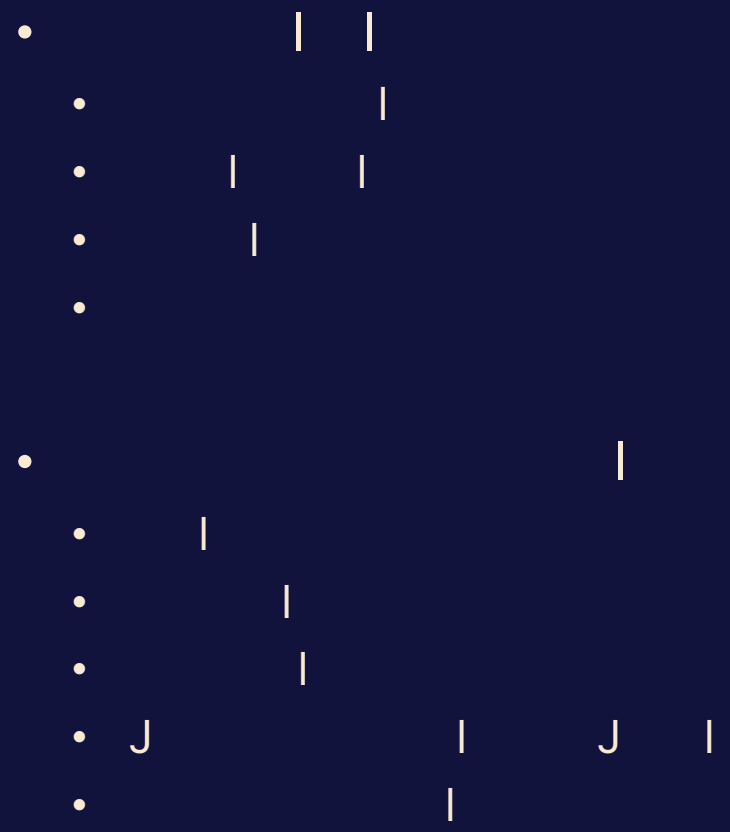
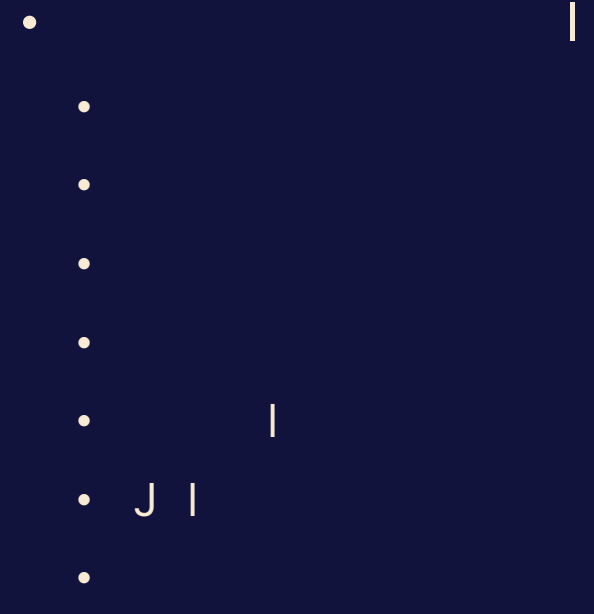
PRACTICAL REACT WITH TYPESCRIPT

Agenda





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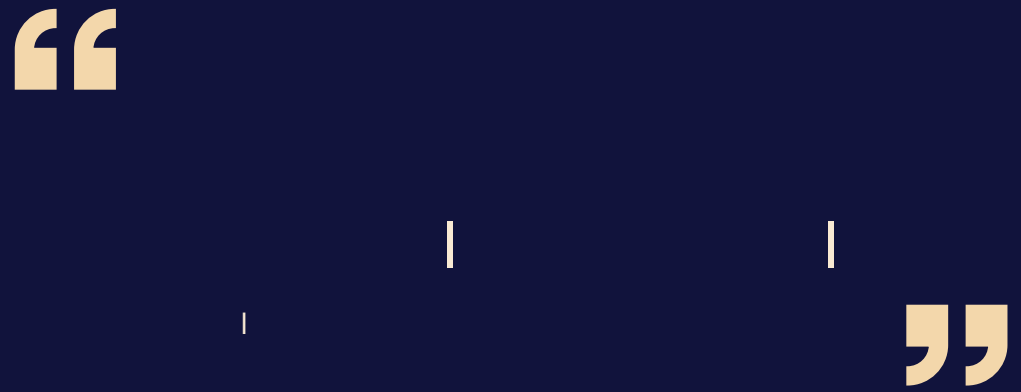
React basics



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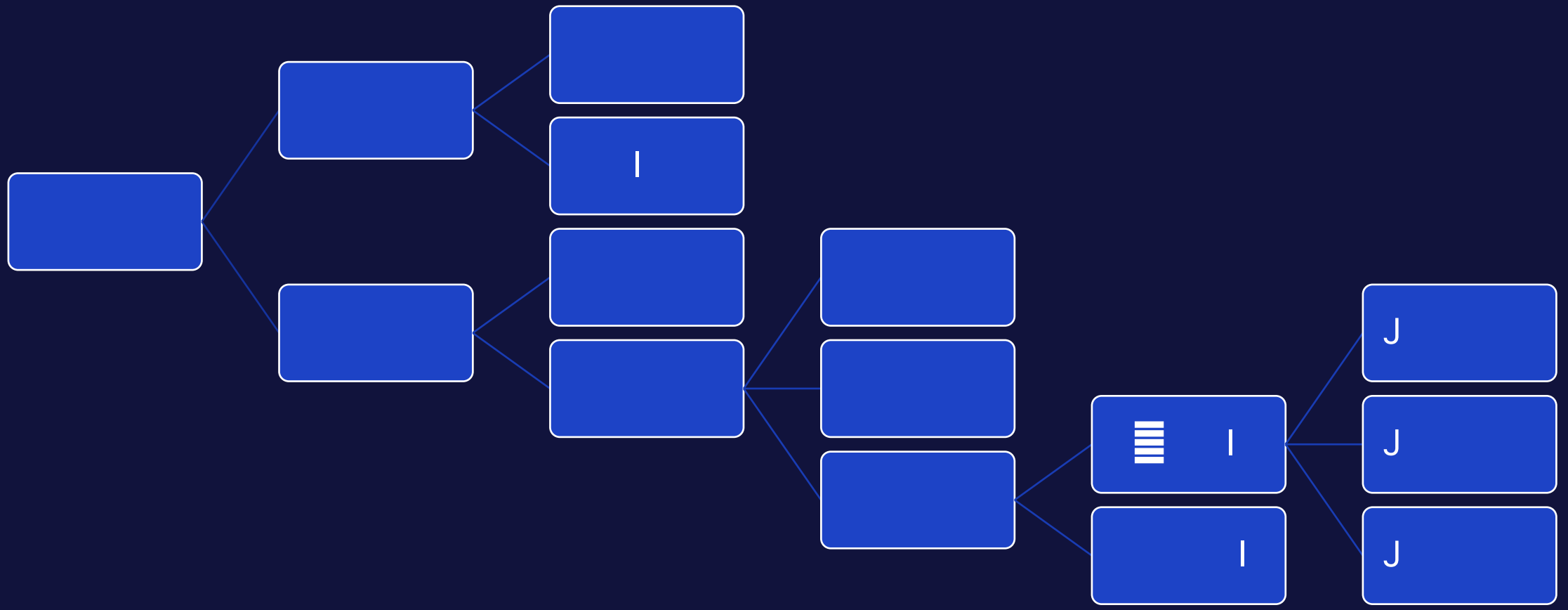
Anatomy of React



bouvet

TextField

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<> BooleanField

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bouvet

Anatomy of a component

```tsx
export interface TextFieldProps {
  label: string
}
```

props

```tsx
export const TextField = ({ label }: TextFieldProps) => {
  const id = useId()
  const [value, setValue] = useState("")

  return (
    <div>
      <label htmlFor={id}>{label}</label>
      <input id={id} type="text" value={value} onChange={(evt) => setValue(evt.target.value)} />
      <p>{value}</p>
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  )
}
```

component

Anatomy of a component

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bouvet

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```

use* | hooks
|

bouvet

Anatomy of a component

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useState

Anatomy of a component

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                        |       |
                         |  jsx      |
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bouvet

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htmlFor label id

Anatomy of a component

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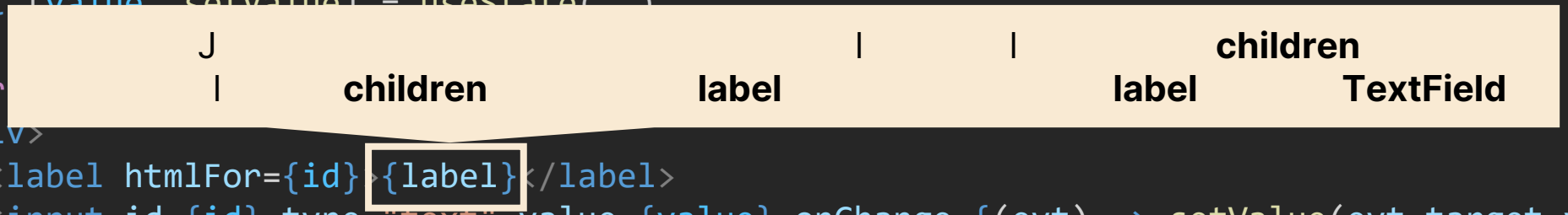

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Anatomy of a component

useState

destructure

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exp
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Anatomy of a component

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    </div>
  )
}
```

value

input

onChange

function

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Anatomy of a component

- **Component:**

- **Props**
- **Hooks**
- **State**
- **Children**
- **JSX**
- **{}**

JSX

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Anatomy of an event

```tsx
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  )
}
```

input*

0 | | | **input** | **onChange** J J | **input**

Anatomy of an event

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    </div>
  )
}
```

event handler

setter

Anatomy of an event

```tsx
export interface TextFieldProps {
  label: string
}
```

State change | re-render updated data

```tsx
export const TextField = ({ label }: TextFieldProps) => {
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```

bouvet

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      <p>{value}</p>
    </div>
  )
}
```

value

updating the UI

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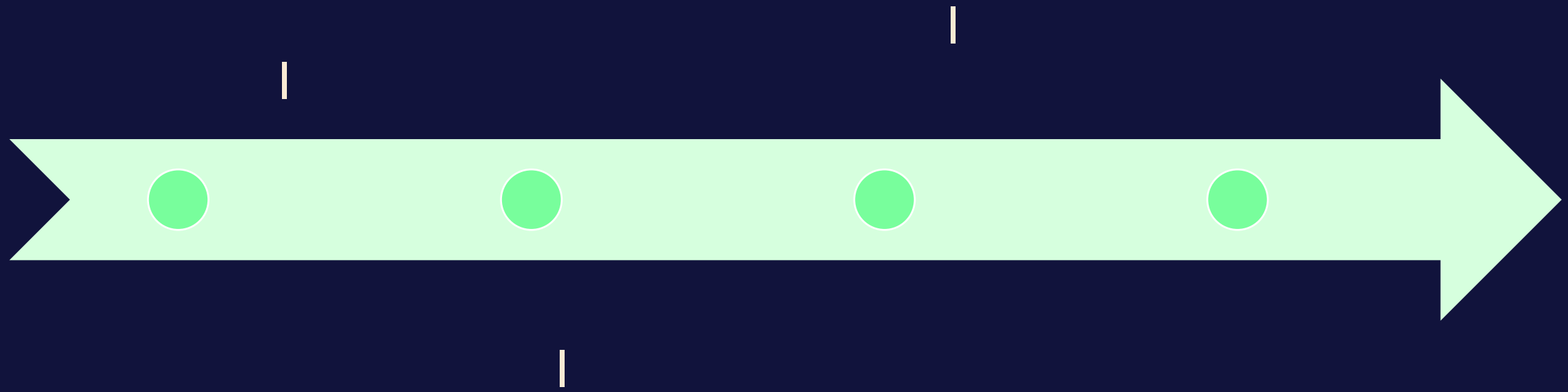
Anatomy of an event



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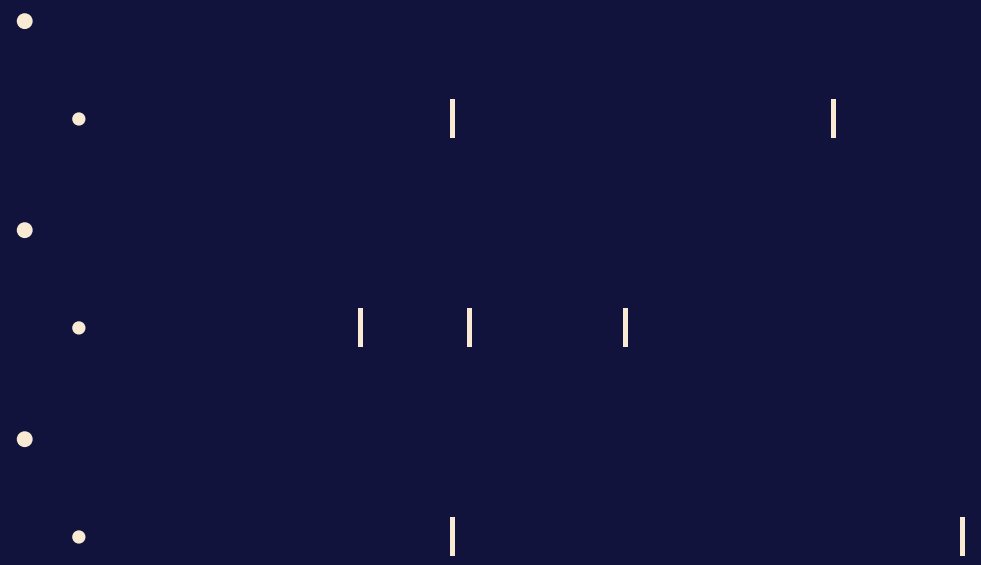
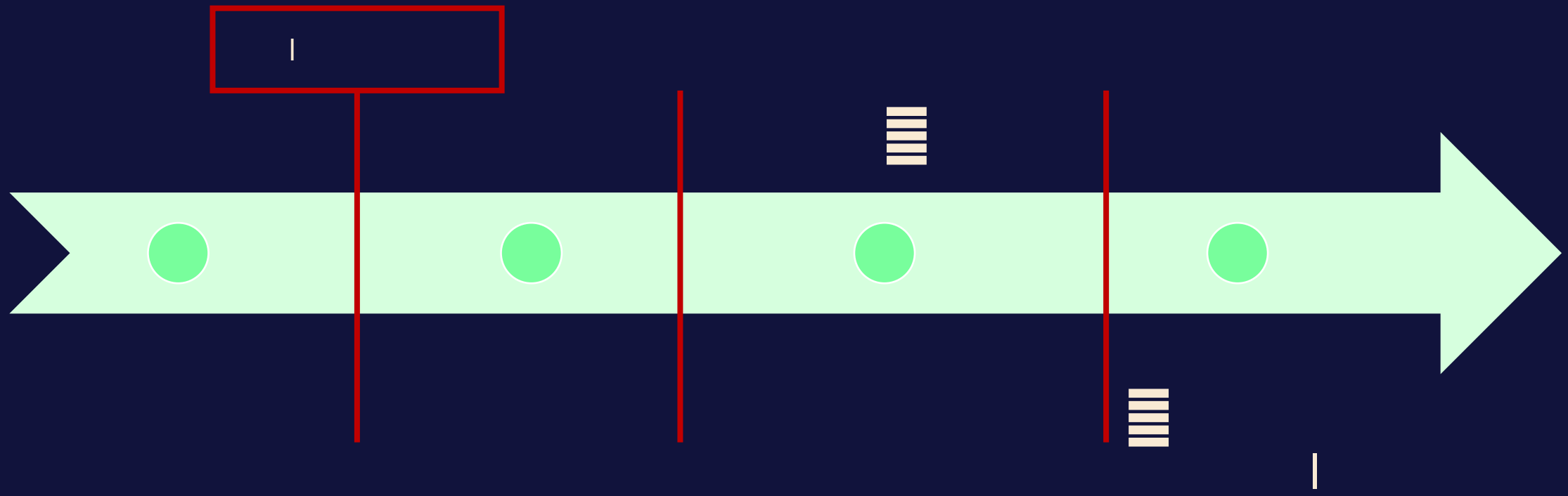
Component lifecycle



Component lifecycle

TextField



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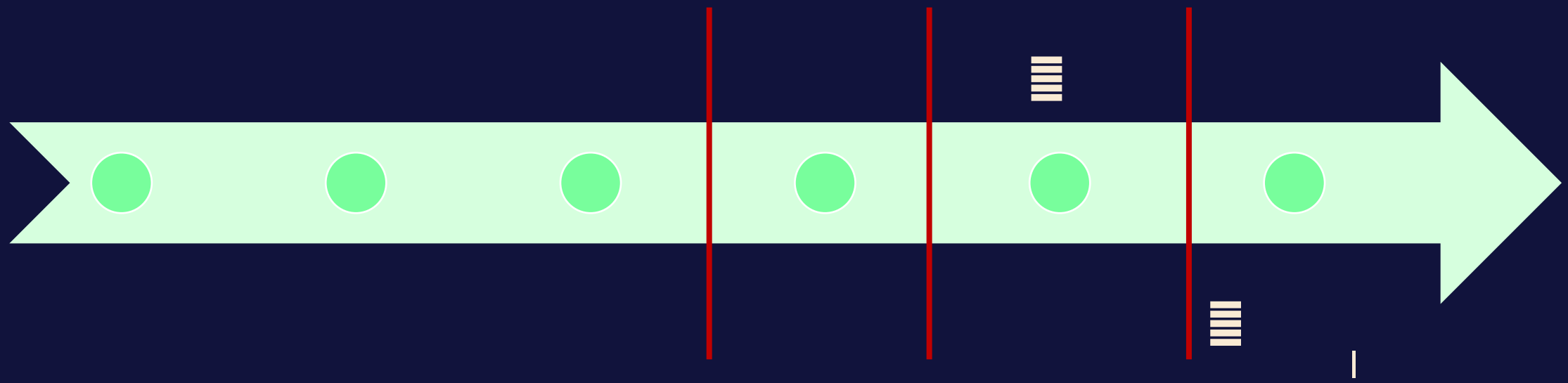
Component lifecycle

TextField



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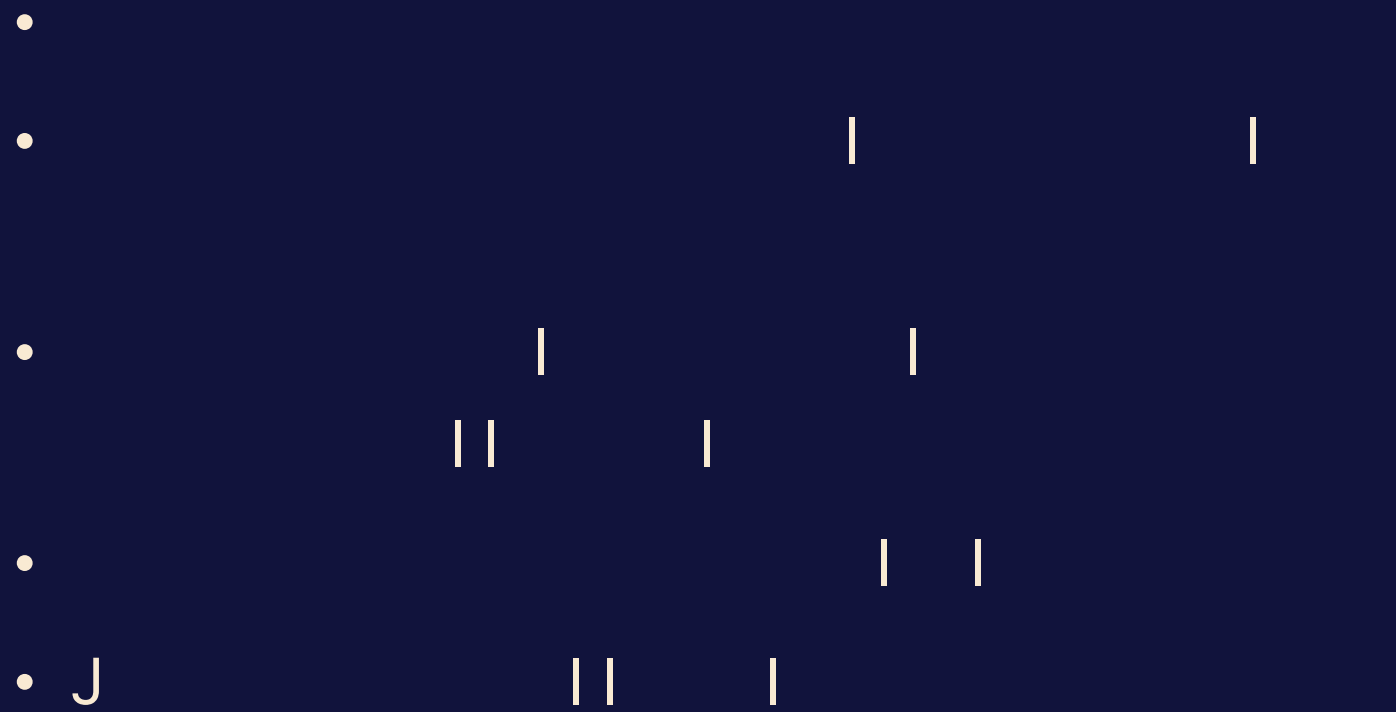
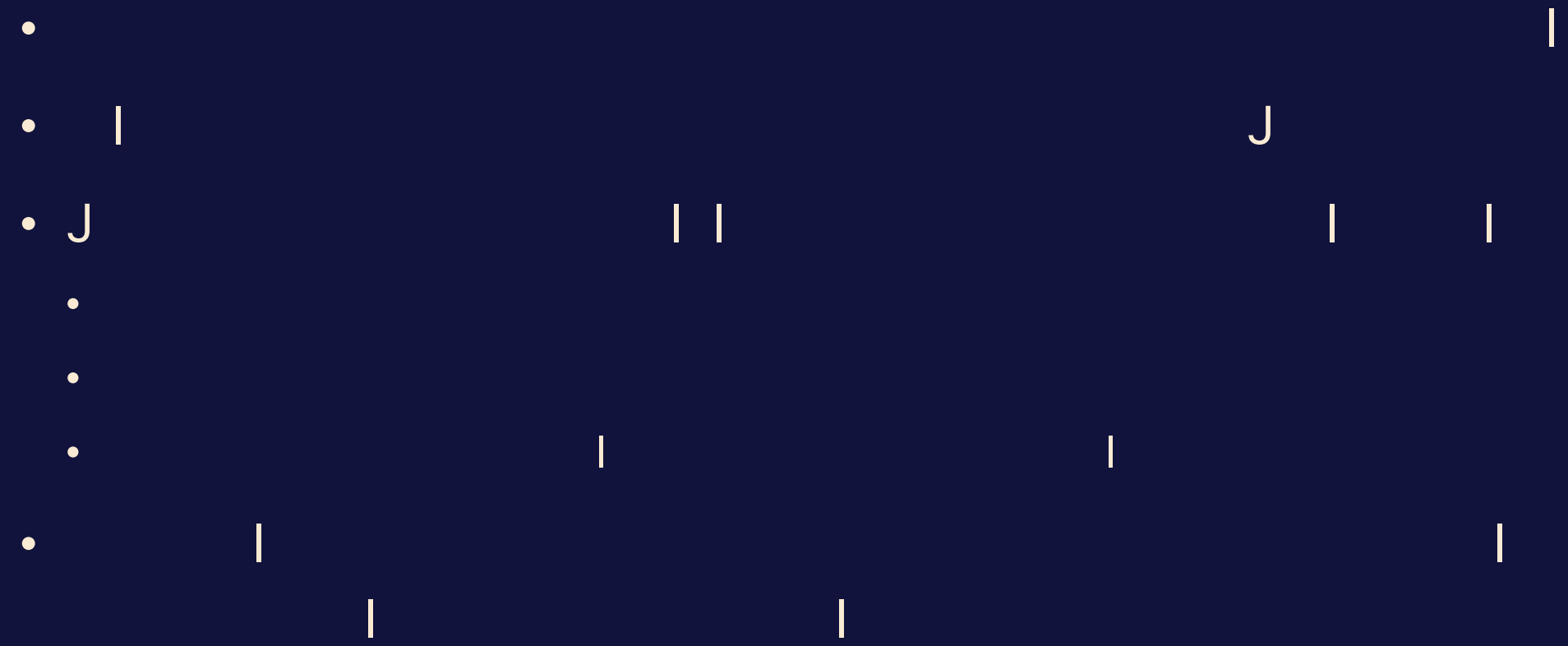
ClickUntil



<> NumericField



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<> ClickUntilForm

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Styling

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Style TextField

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<> Style components

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EoD 1

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Immutability

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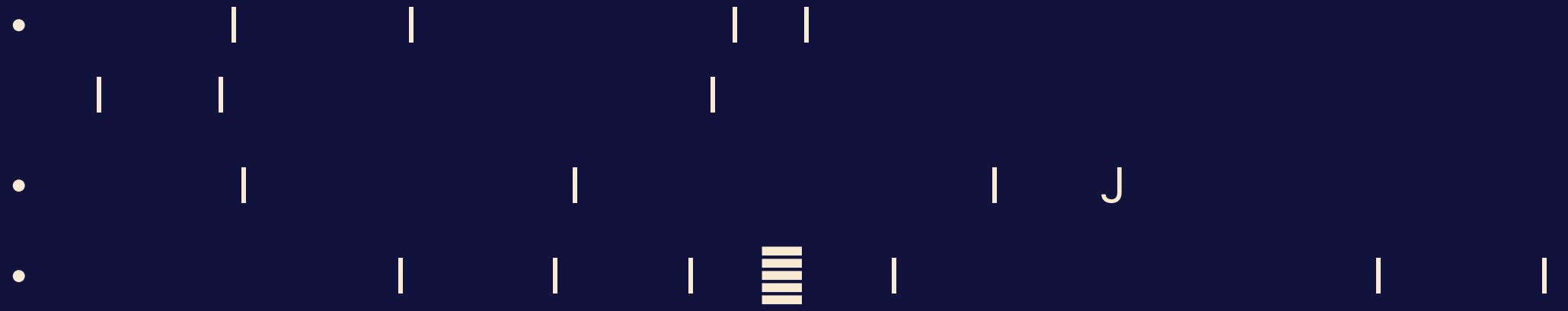
UserDetails



UserDetails2

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Loops

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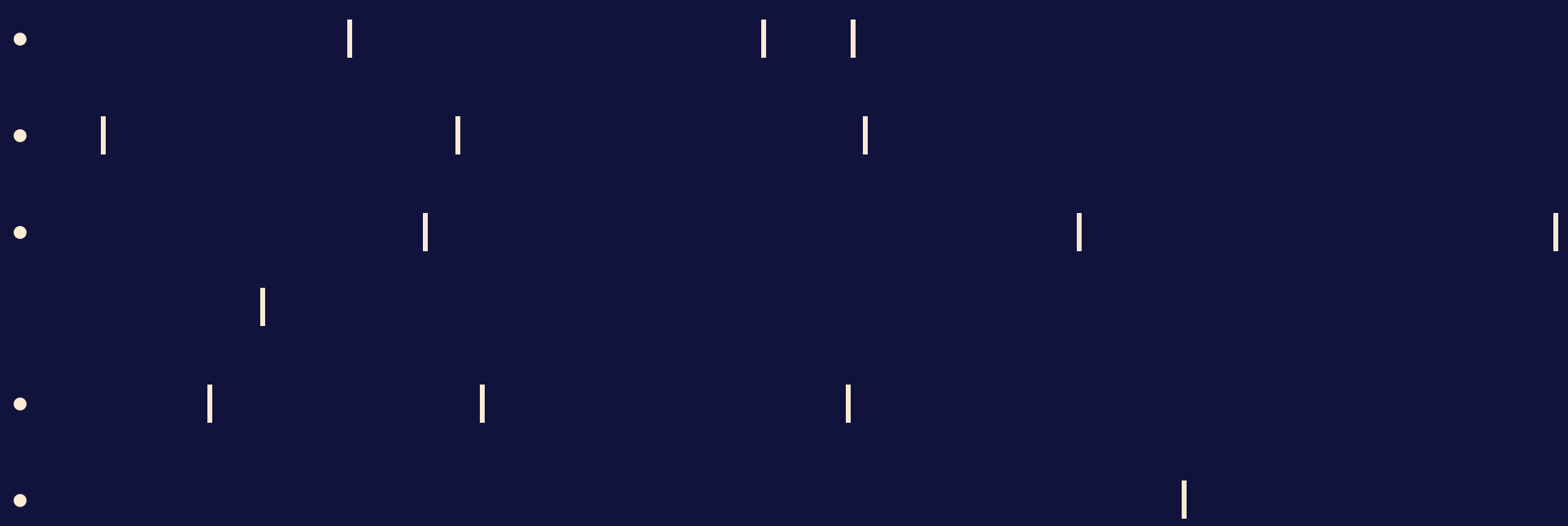
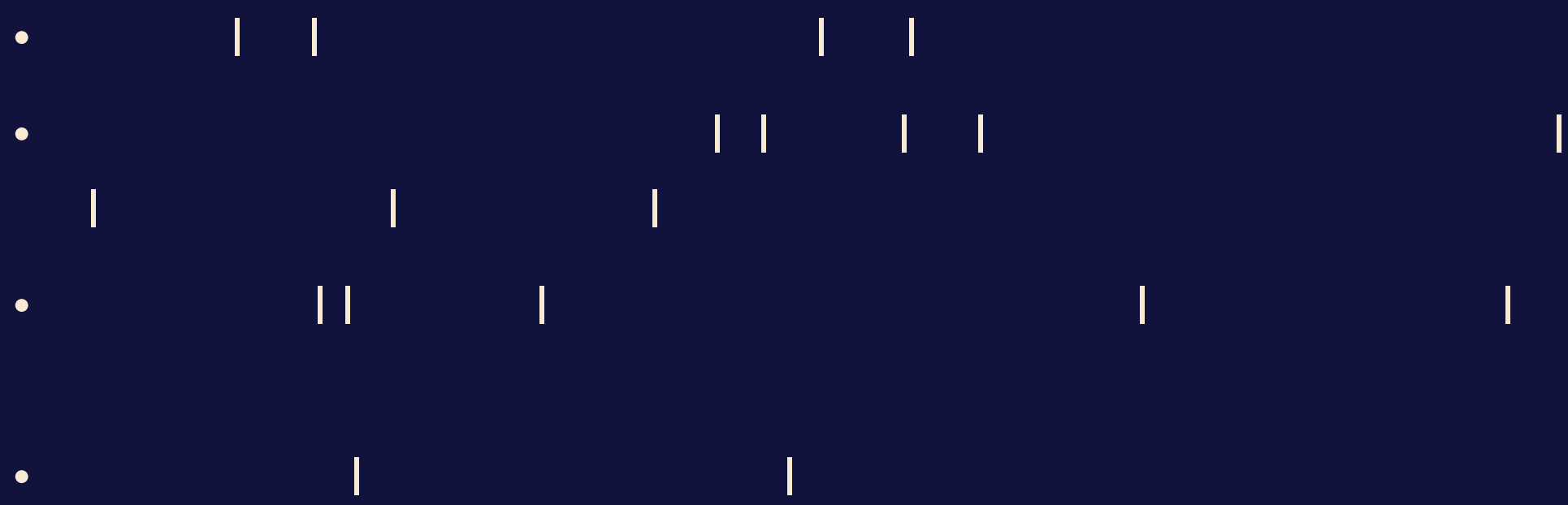
ListData component



<> UsersTable



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Hooks

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Most common react hooks

- **useId:**
- **useState:**
- **useMemo:**
- **useEffect:**
- **useRef:** **does not**

bouvet

useRandom

bouvet

<> useWindowTitle

bouvet

<> useLocalStorage

bouvet

TypeScript Generics

bouvet

TypeScript Generics

```ts
interface ContainerFor<TType> {
  id: string
  value: TType
}
```

```ts
const stringContainer: ContainerFor<string> = {
  id: "123",
  value: "foo"
}

const booleanContainer: ContainerFor<boolean> = {
  id: "123",
  value: true
}

interface Name {
  firstName: string
  lastName: string
}
const objectContainer: ContainerFor<Name> = {
  id: "123123",
  value: {
    firstName: "Test",
    lastName: "Testington"
  }
}
```

TypeScript Generics

```ts
interface ContainerFor<TType extends string | boolean> {
  id: string
  value: TType
}
```

```ts
const stringContainer: ContainerFor<string> = {
  id: "123",
  value: "foo"
}

const booleanContainer: ContainerFor<boolean> = {
  id: "123",
  value: true
}
```

TypeScript Generics

```ts
interface GenericInterface<T> {
  id: string
  value: T
}

type GenericType<T> = {
  id: string
  value: T
}

const genericFn = <T, T2>(firstArg: T, secondArg: T2) => {
  //...
}

function genericFn2<T, TReturn>(firstArg: T): TReturn {
  //...
}
```

bouvet

TypeScript Generics with React

```tsx
export interface GenericComponentProps<TType> {
  label: string
  value: TType
}

export const GenericComponent = <TType,>(props: GenericComponentProps<TType>) => {
  // ..
}
```

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<> ChoiceField

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EoD 2

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Organize the workspace

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Contexts

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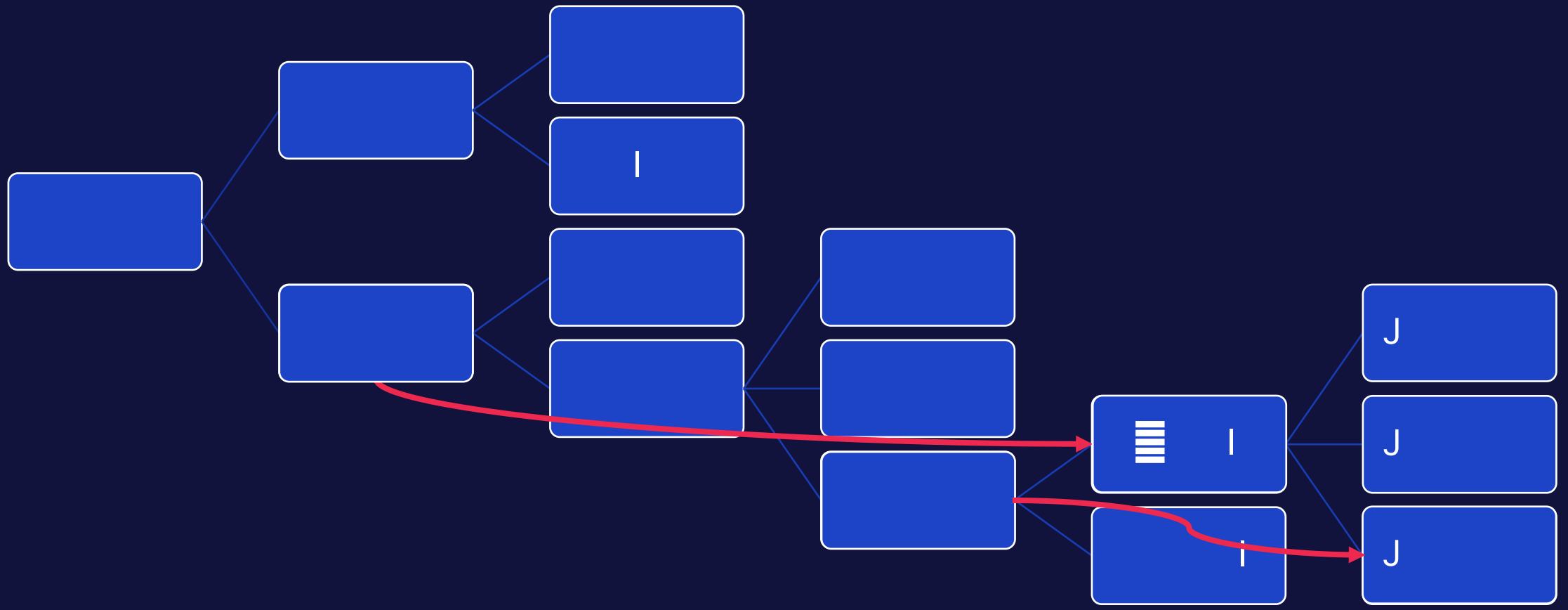
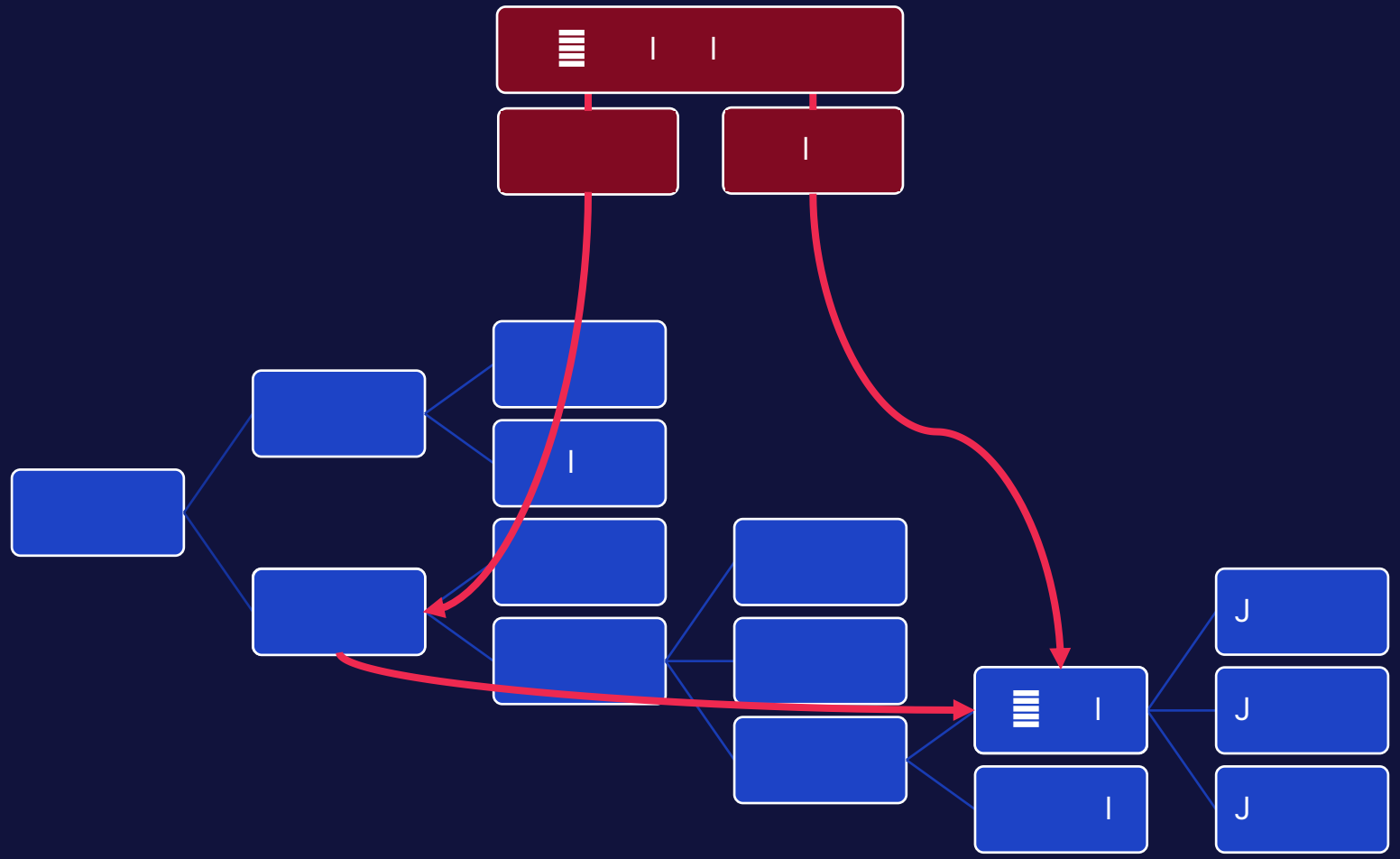
Anatomy of Context



Anatomy of Context



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UsersContext

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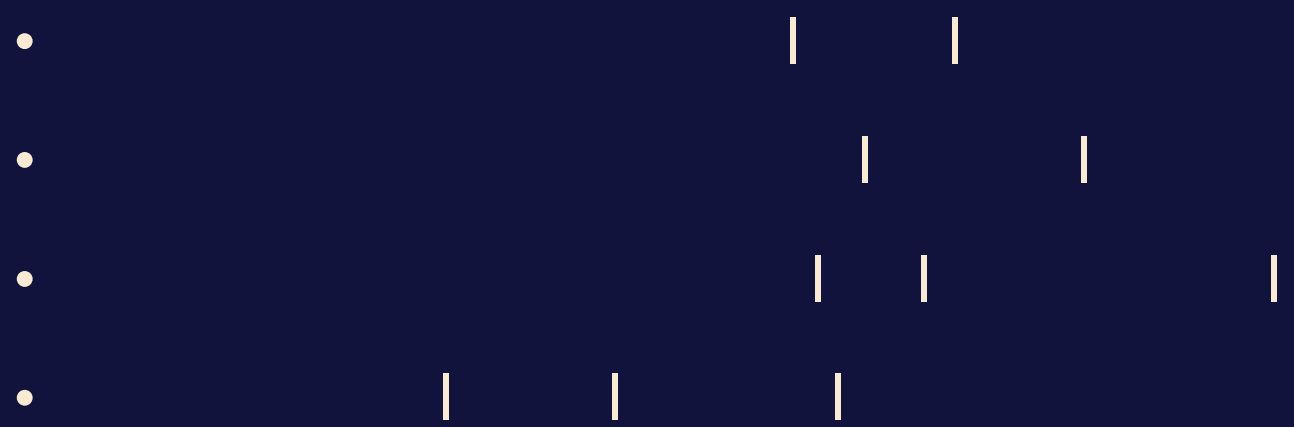
<> DisableFieldsContext



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Communication with a server

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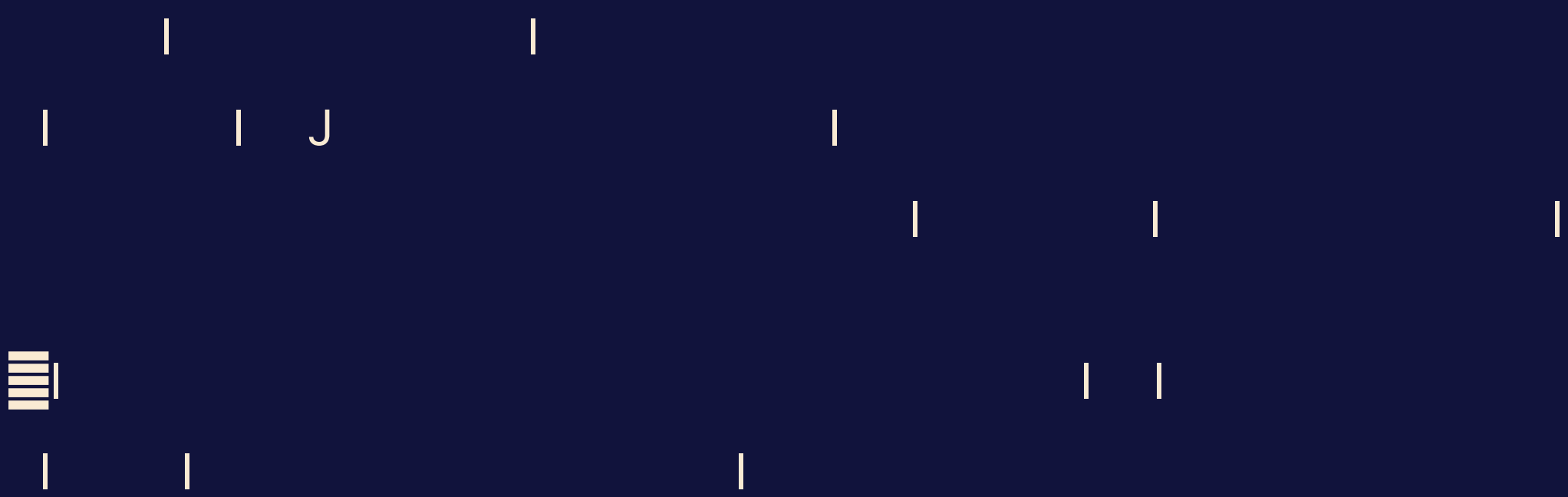
ServerSideUserTable



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Generating clients

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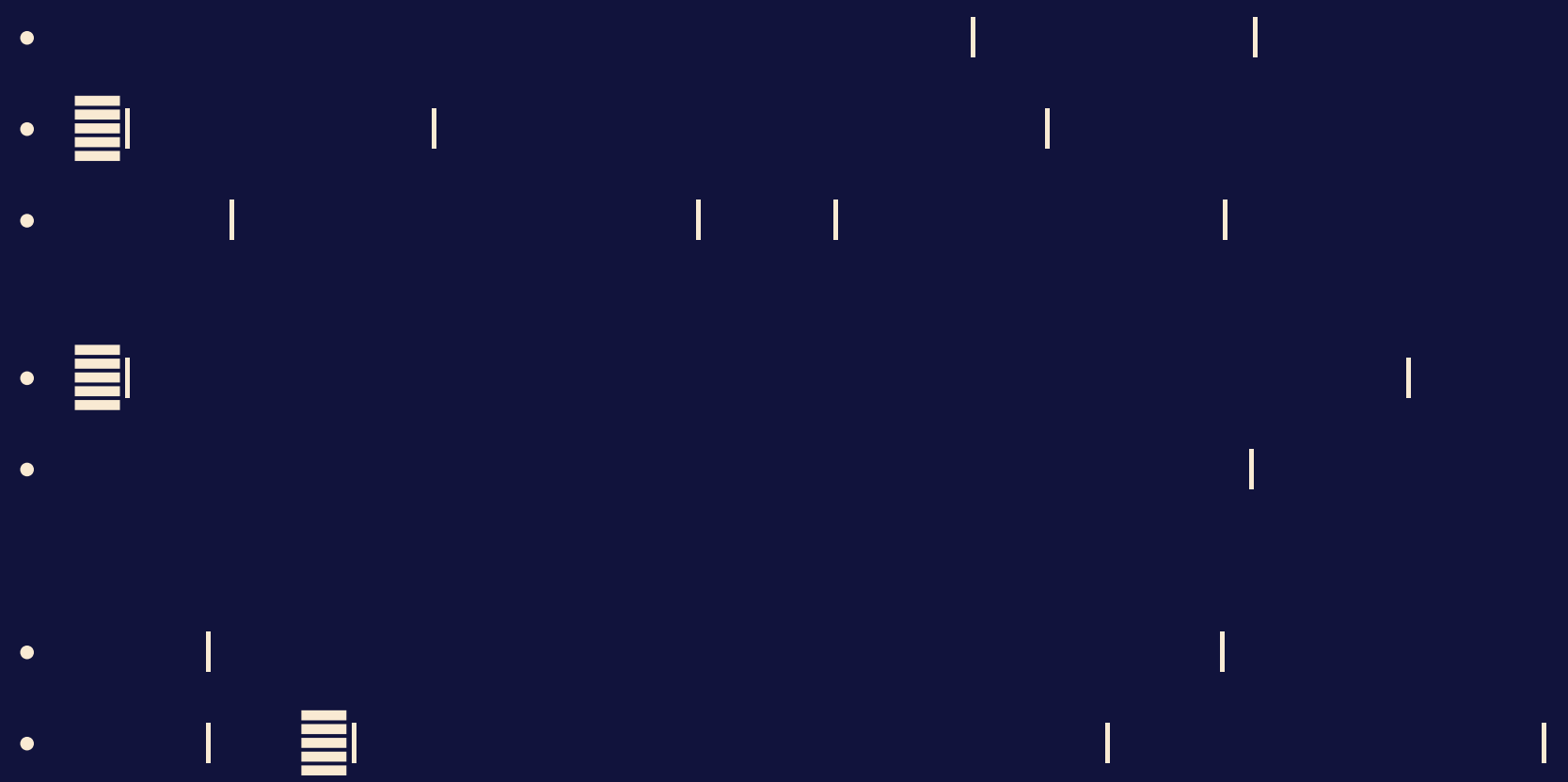
<> GroupsTable



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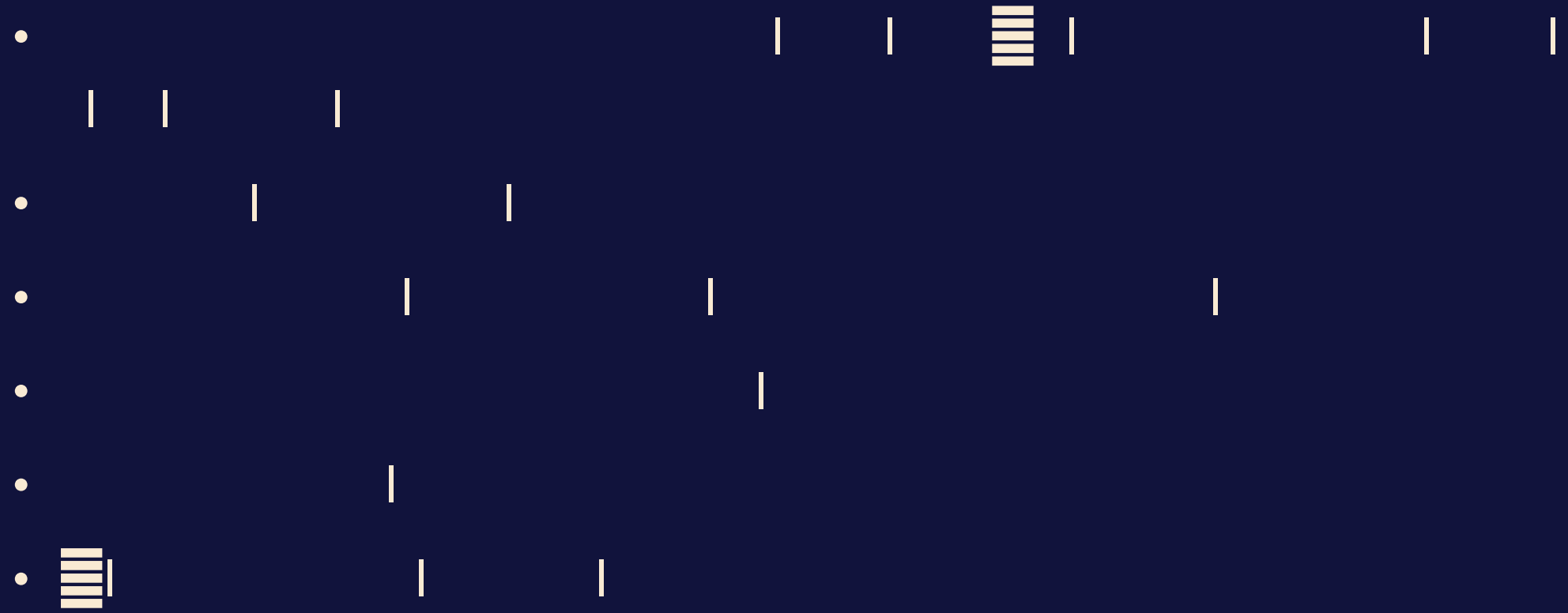
<> UserDetails



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Routing

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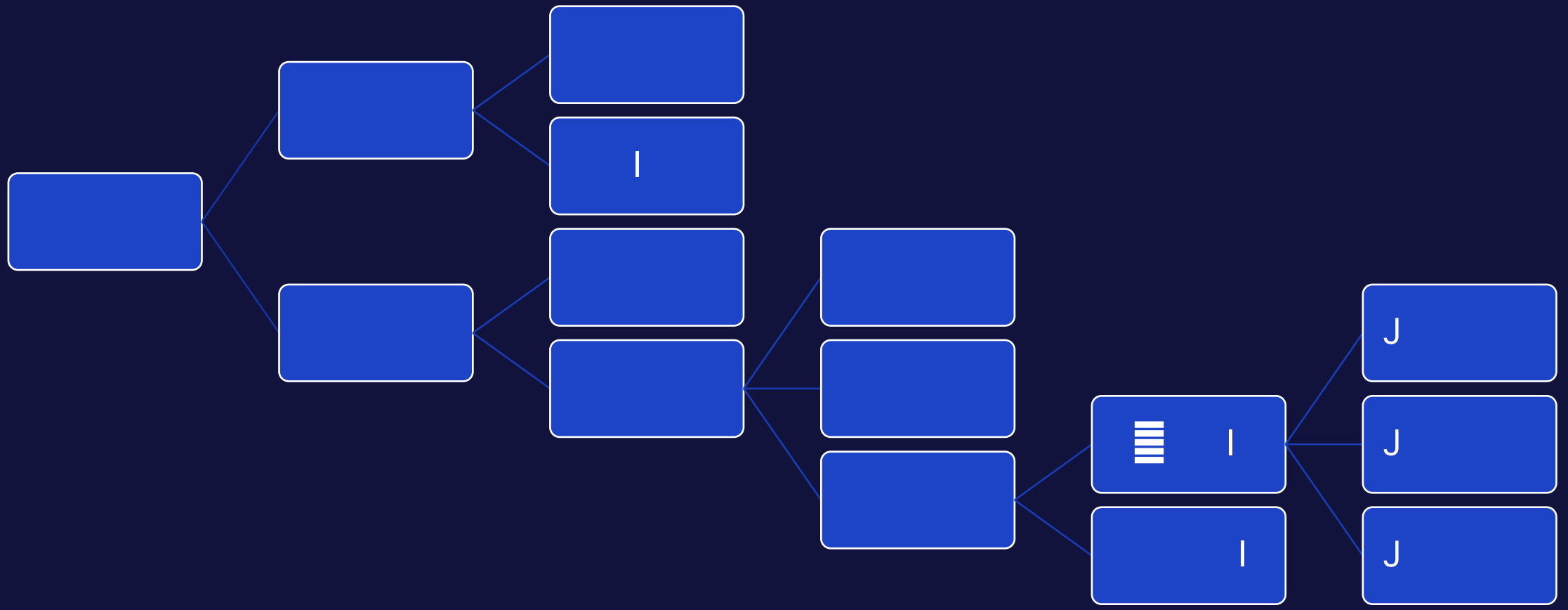
Anatomy of routing



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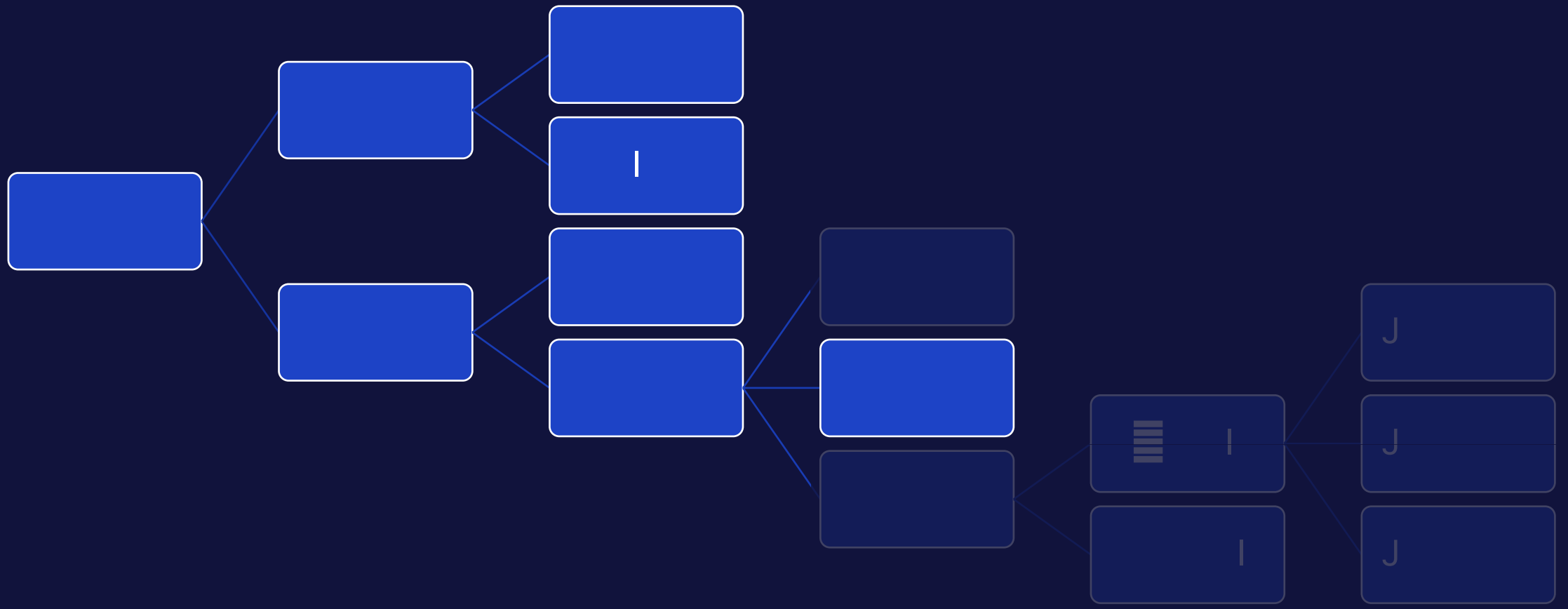
Anatomy of

Anatomy of routing

/login



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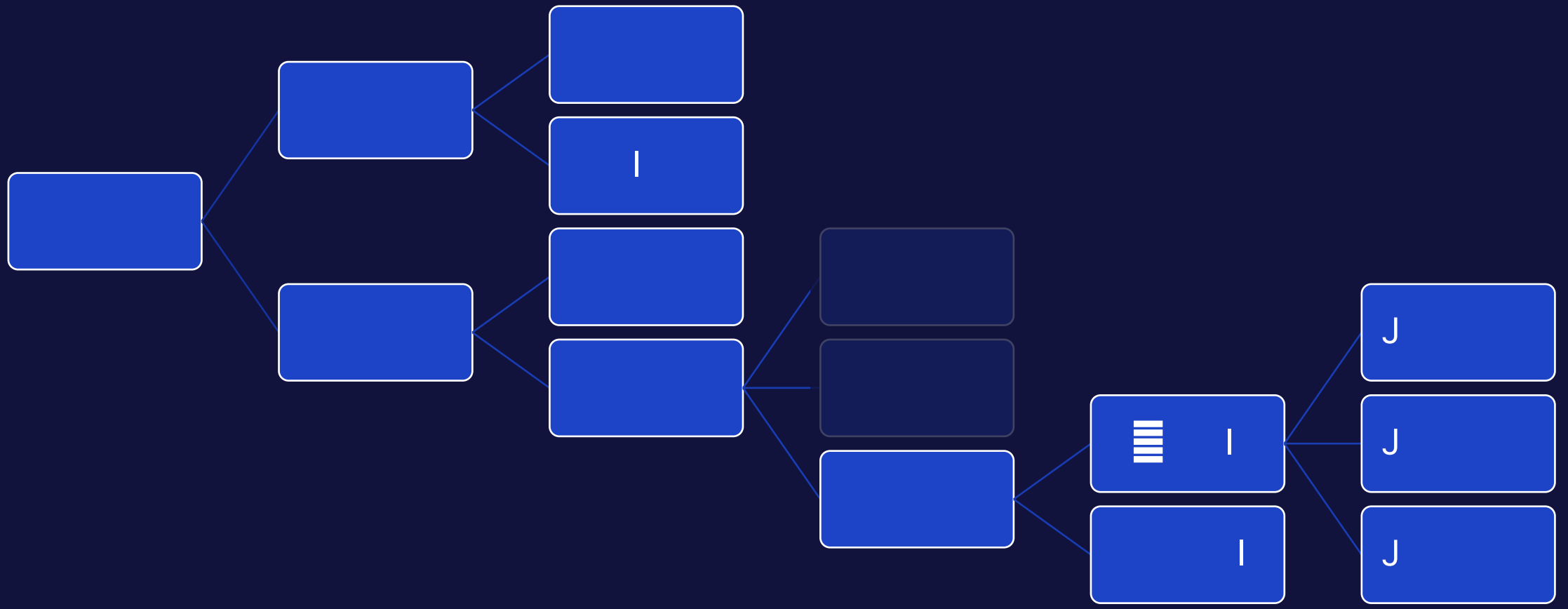
Anatomy of routing

/profile



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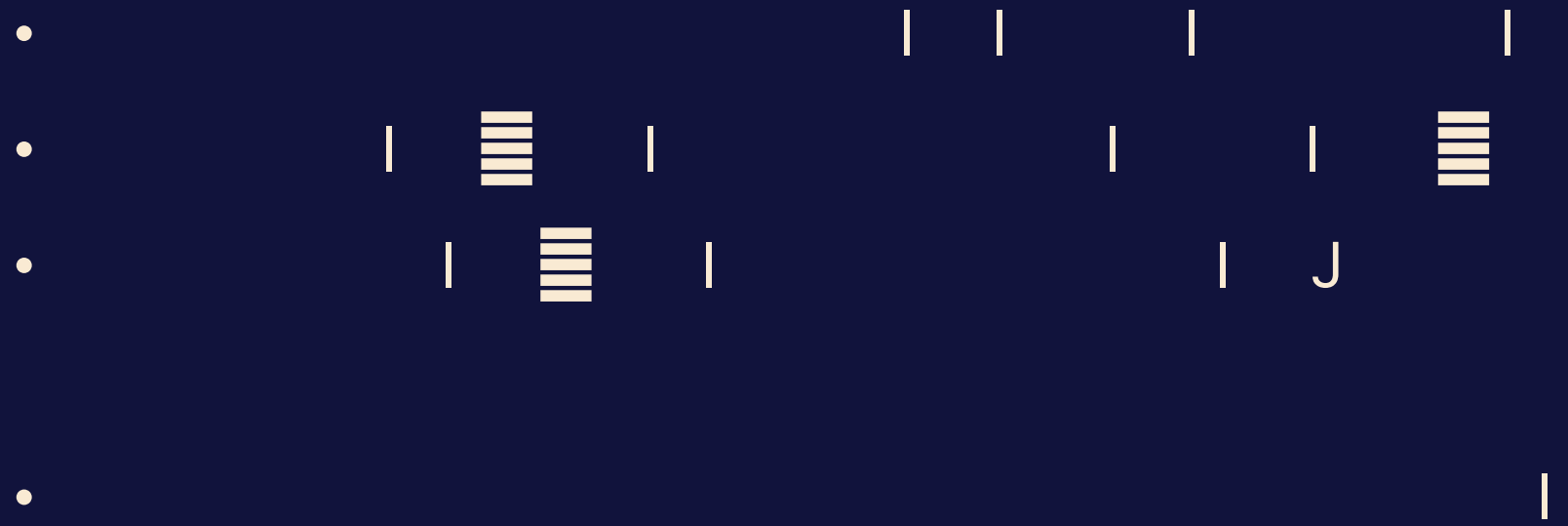
HomePage and UserDetailsPage



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GroupDetails and Navigation

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MainLayout

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<> NoNavigationLayout

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Component composition

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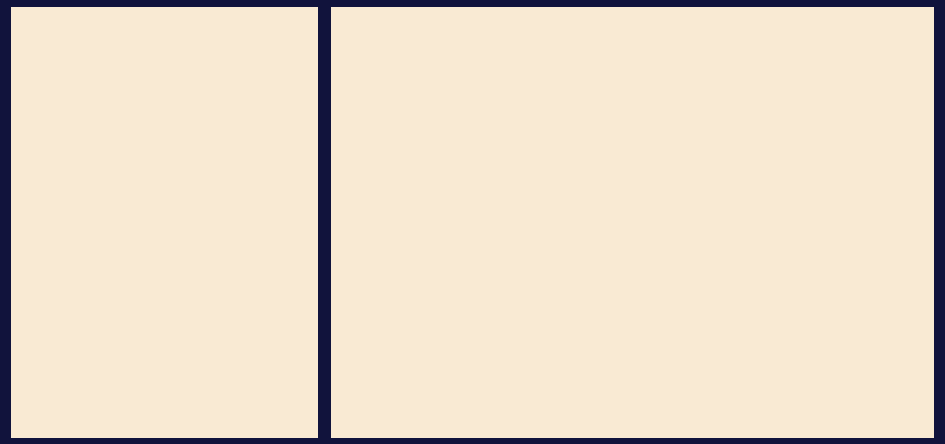
MainSidebar



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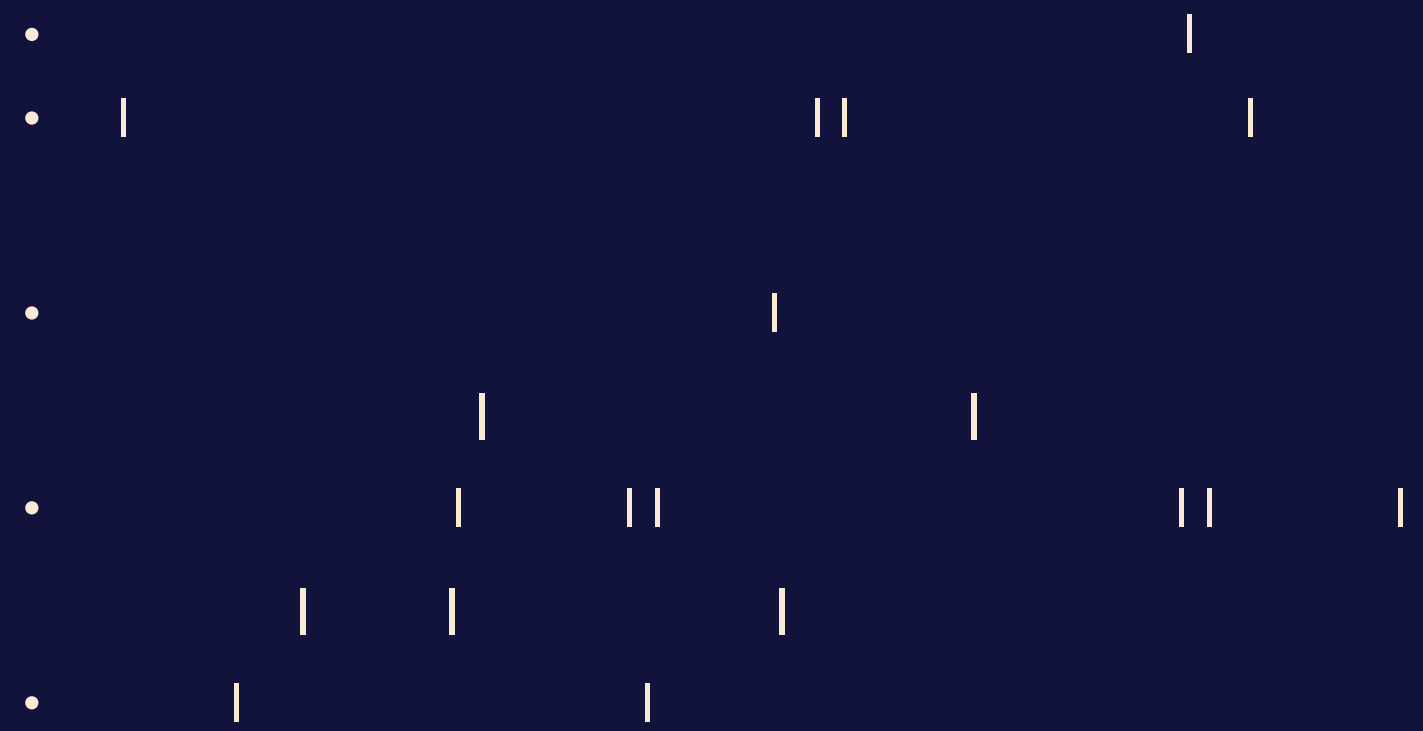
Optimizations

- **Avoid unecessary re-renders**



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QA

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