# **Single Page Application (SPA)**

- A single HTML page w/JS to change contents
  - Can appear to be many "pages" to user
- React is not only way to make SPA
- React does not have to be a SPA
- SPA sometimes desirable
  - When complex JS state
  - No reload JS when no real page navigation

### **Navigation in a SPA**

- Core SPA issue
  - Browser navigation reloads HTML + JS
- Links and Forms?
  - Change state and contents
    - Looks like page change
  - Do NOT actually navigate
    - $\circ$  Keeps base HTML + JS
    - Apply changes in content

# Prevent forms and links from navigating

#### Links and Forms

- .preventDefault() on event
  - onSubmit (forms) or onClick (buttons)
- Update state so render changes look
  - Looks like a new page

### **Simple vs Complex**

- Faking page navigation has lots of details
- Libraries are made to handle this **routing** 
  - Ex: react-router
- We aren't using any such libraries
  - Not because the libraries aren't good
  - Learning the concepts, not one library
  - You can then learn any library
    - AFTER this course

### Simple Example

- We want to show the user the current "page"
- So some variable is used to decide what to render
  - We will have a "page" state

## **Simple Navigation**

- Changing page needs to change page state
  - Pass the setter

- Simplified example!
  - Learn the concept, not the specific syntax

# **Using the Setter**

#### **Details to Consider**

- What to use as href?
  - # vs #something vs a path
  - How does this impact UX?
- What about Back button?
- What about Reloading the page?
  - Or saving/sending the url?
- Can have different ways to call state change
  - Should preventDefault() unless a hashref
  - Way to change state needs to be passable

#### **Core SPA Concepts**

- Everything is one HTML file
  - Even when generated from many .jsx
  - Remember that's what the browser sees!
- **state** is a vital concept
  - Changed behavior is either CSS or state!
    - o Or both
  - Functionality is a lot of state
    - No clear line between UI and Functionality in webapps