



Universidad de Oviedo



S O F T W A R E
A R C H I T E C T U R E

Software Architecture

Lab. 03

React

Solid

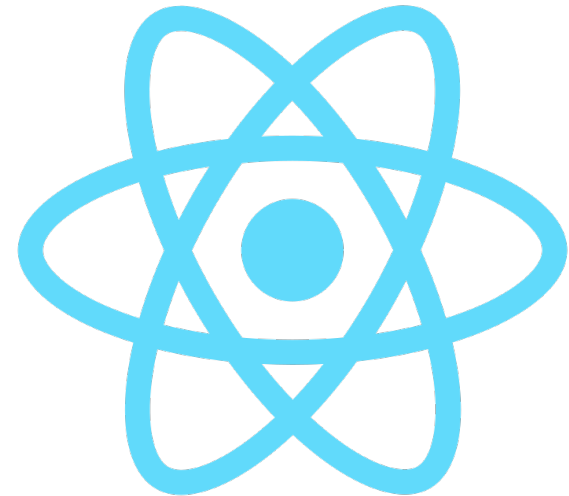
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What is React.js?

React is a JavaScript library for building user interfaces for the web as well as mobile applications

- Open source
- Created by Facebook
- Based on components



Why React?

These are the main reasons for using react:

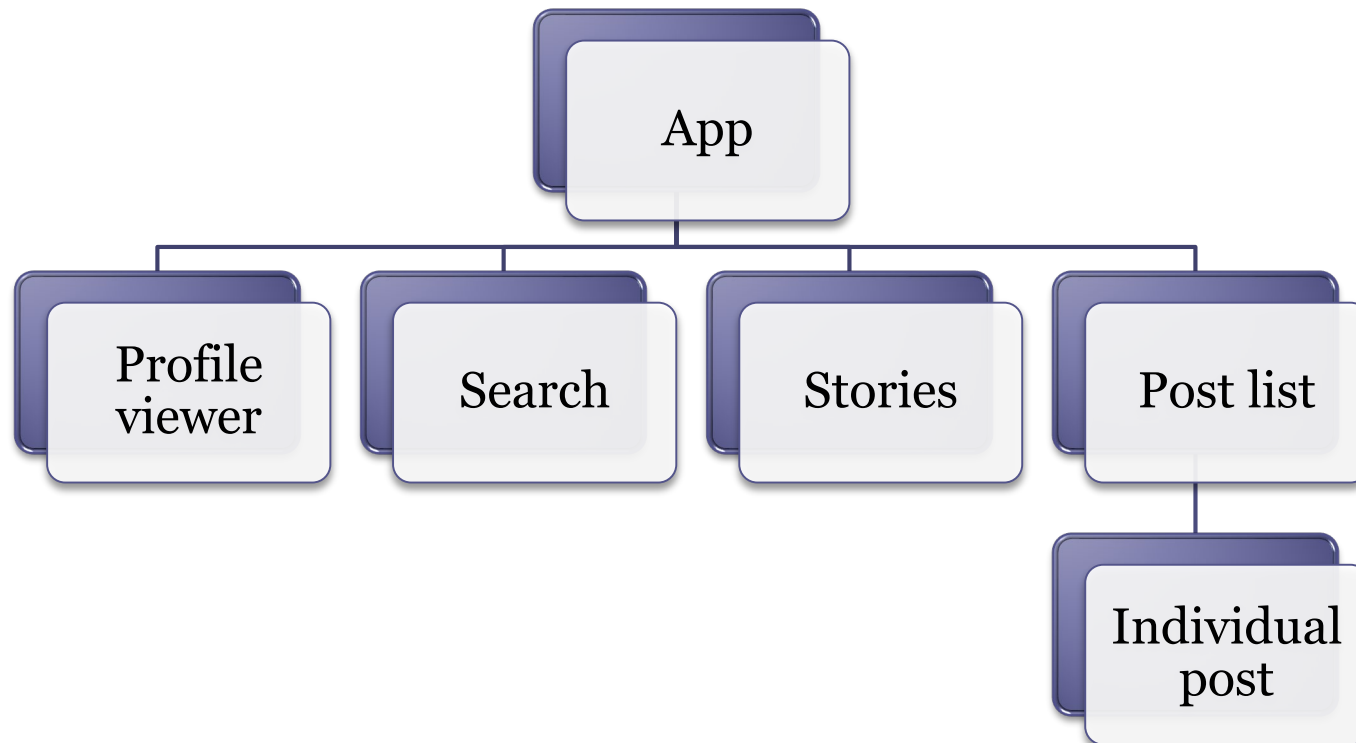
- Simplicity and easy to learn
- Reusable components
- Native approach (React Native)
- Widely used with lots of resources and powerful tools for the development process
- High testability

Components

Pages are modelled using components

A component is a part of the user interface

Example: Instagram



Components

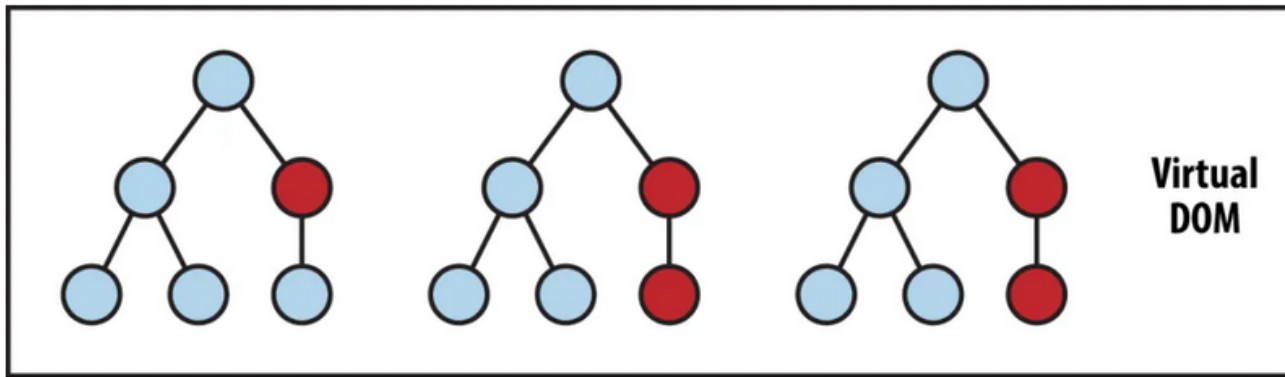
A component can be implemented as a JavaScript class

- It has a state
- And a render method that controls what is displayed in the UI
- When the state changes, react updates the element and its child's in memory
- This element representation in memory is called Virtual DOM

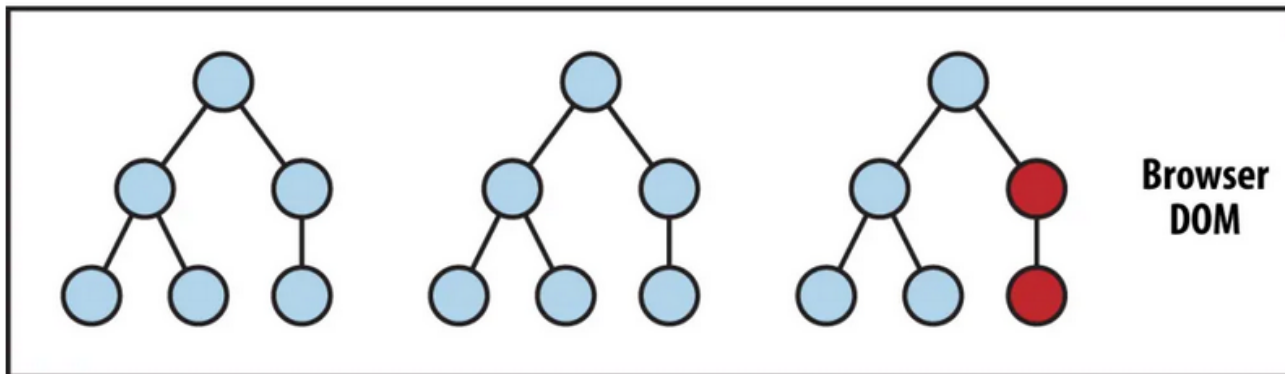
```
class ProfileViewer{  
  state = {}  
  render(){  
  
  }  
}
```

React **reacts**
to changes

Virtual DOM



State Change → Compute Diff → Re-render



source: <https://www.oreilly.com/library/view/learning-react-native/9781491929049/ch02.html>

We also have Hooks!

It replaces classes by functions

- In the following example, we use the `useState` hook to handle the name changes in the app
- Once the button is clicked, the state is changed, the virtual DOM updated, and the page is automatically refreshed

```
const App = () => {  
  const [name, setName] = useState('World');  
  return (  
    <div className="App">  
      <h1>Hello, {name}!</h1>  
      <button onClick={() => setName('James')}>  
        Click me to change the name  
      </button>  
    </div>  
  );  
};
```

SOLID

Is a new technology for organizing apps, information and identities in a decentralized way

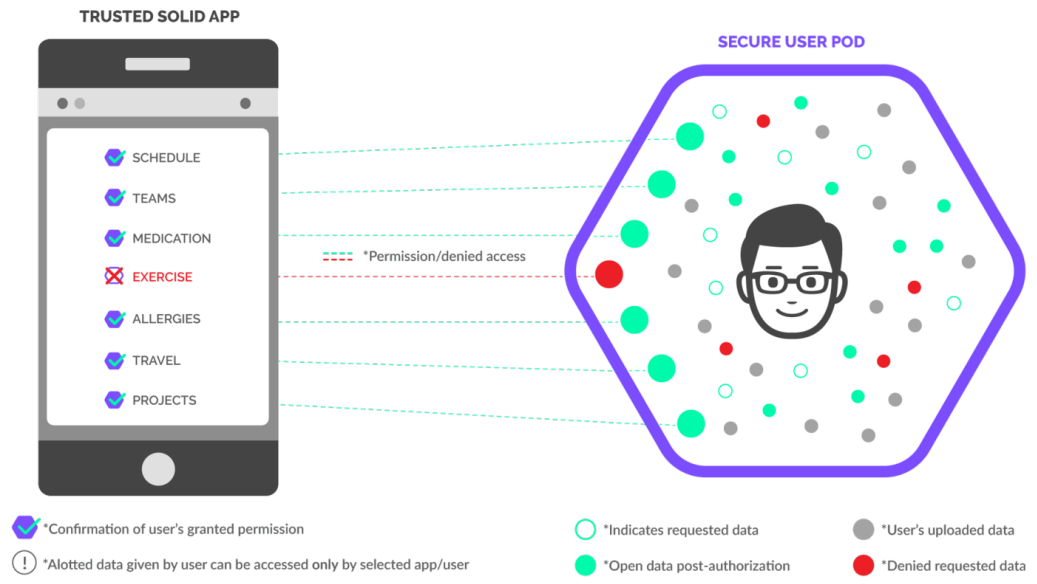
- Developed by MIT
- Created by Tim Berners-Lee



Lets create a POD

For creating a POD, we need a POD provider. We can use an external one or host our own POD server

- <https://inrupt.net/>



How to combine Solid and React?

We have a set of components already created that allows us to easily create a Solid application using React

- React components
<https://github.com/inrupt/solid-ui-react>
- Example project
<https://github.com/pglez82/solid-react-example>
- Solid Documentation
<https://docs.inrupt.com/>

End of presentation