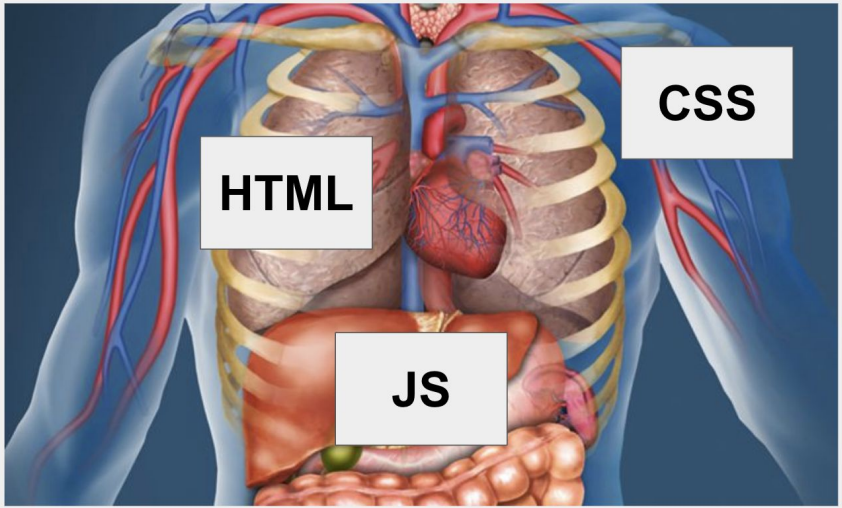
Intro to

Allen Ding + Akshaj Kadaveru

Recap



HTML

```
// index.html

<div class="title">
   Hello World!
</div>
```

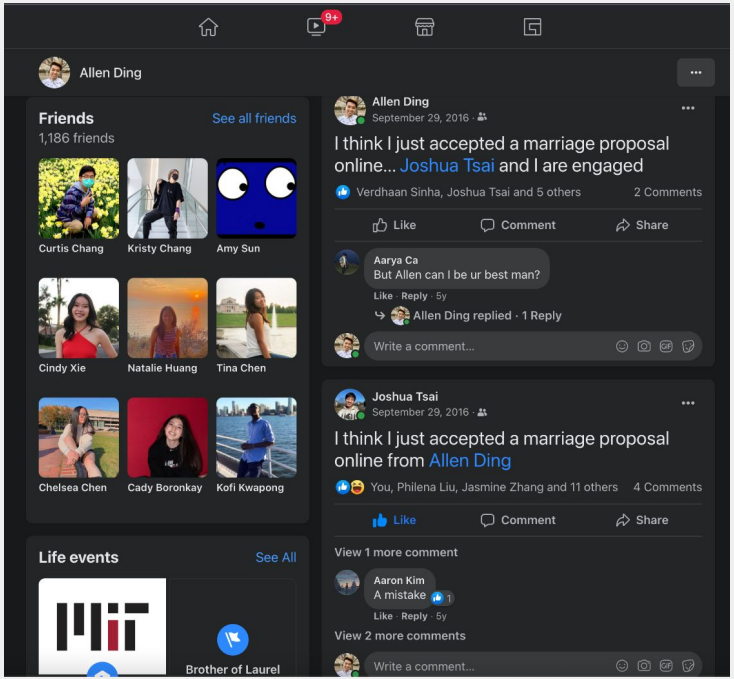
CSS

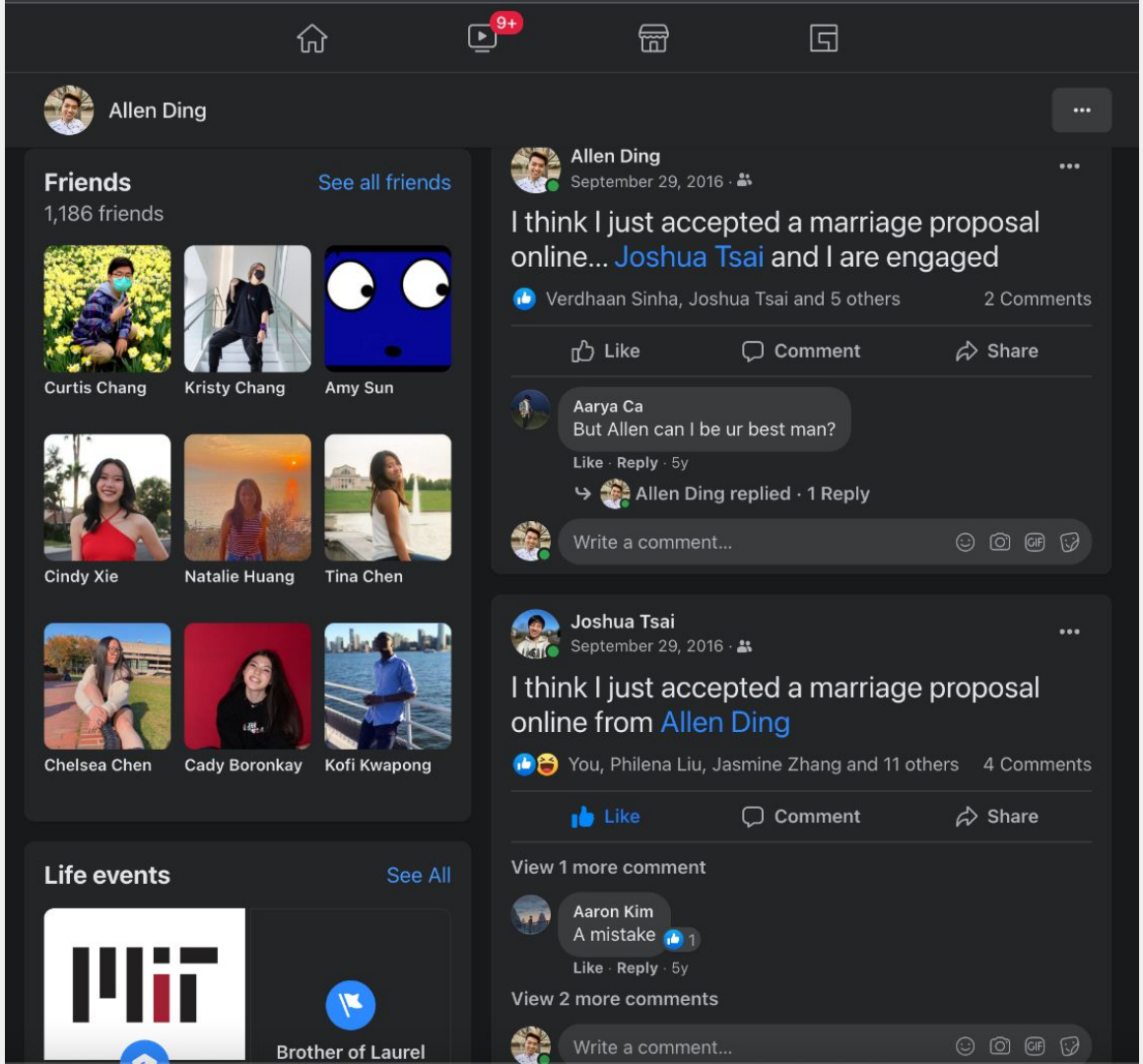
```
// styles.css

.title {
    font-size: 18px;
    margin: 12px;
}
```

JavaScript

```
// main.js

const logHello = () => {
  console.log("Hello World !")
}
```

```
<div class="friendsSection">
        <div class="friends-header">
                <h3>Friends</h3>
                <a href="allfriends.html">See all friends</a>
                <p>1,186 friends</p>
        </div>
        ...
</div>
<div>
        <div class="header">
                <img src="allending.png" />
                <h3>Allen Ding</h3>
                <p>September 29, 2016</p>
        </div>
        <div class="post-text">
                I think I just accepted a marriage proposal online... Akshaj
and I are engaged
        </div>
</div>
<div>
        <div class="header">
                <img src="akshajpic.png" />
                <h3>Akshaj Kadaveru</h3>
                <p>September 30, 2016</p>
        </div>
        <div class="post-text">
                I think I just accepted a marriage proposal online from
Allen Ding
        </div>
</div>
... (10000 more posts)
<div class="lifeEventsSection">
        <h3>Life Events</h3>
        <a href="seealllifeevents.html">See all</a>
        <a href="www.mit.edu"> <img src="MIT.png" /> </a>
        <a href="www.event2.com"> <img src="event2.png /> </a>
</div>
...
```




9+
Allen Ding
Friends
See all friends
1,186 friends
Curtis Chang
Kristy Chang
Amy Sun
Cindy Xie
Natalie Huang
Tina Chen
Chelsea Chen
Cady Boronkay
Kofi Kwapong
Life events
See All
Brother of Laurel
Allen Ding
September 29, 2016 ·
I think I just accepted a marriage proposal online... Joshua Tsai and I are engaged
Verdhaan Sinha, Joshua Tsai and 5 others
2 Comments
Like
Comment
Share
Aarya Ca
But Allen can I be ur best man?
Like · Reply · 5y
Allen Ding replied · 1 Reply
Write a comment...
Joshua Tsai
September 29, 2016 ·
I think I just accepted a marriage proposal online from Allen Ding
You, Philena Liu, Jasmine Zhang and 11 others
4 Comments
Like
Comment
Share
View 1 more comment
Aaron Kim
A mistake
1
Like · Reply · 5y
View 2 more comments
Write a comment...

```
<div class="friendsSection">
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...
```
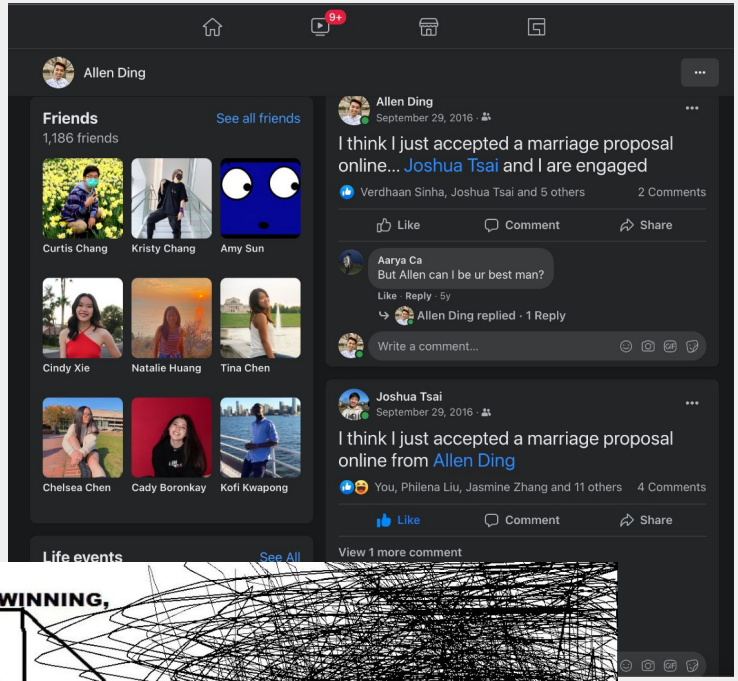
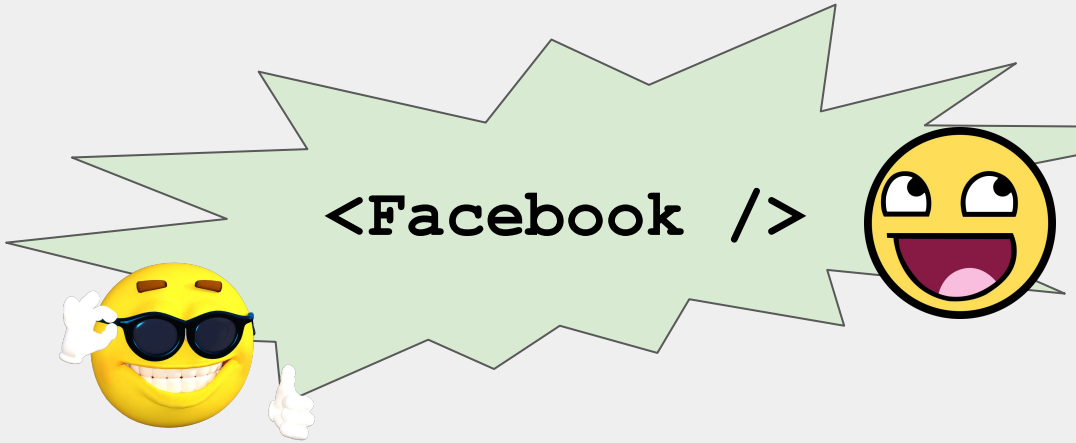
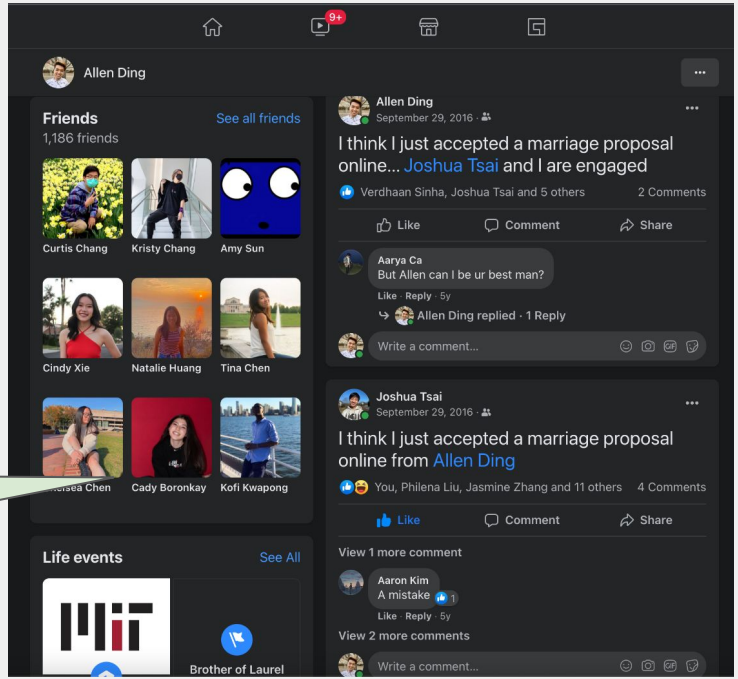



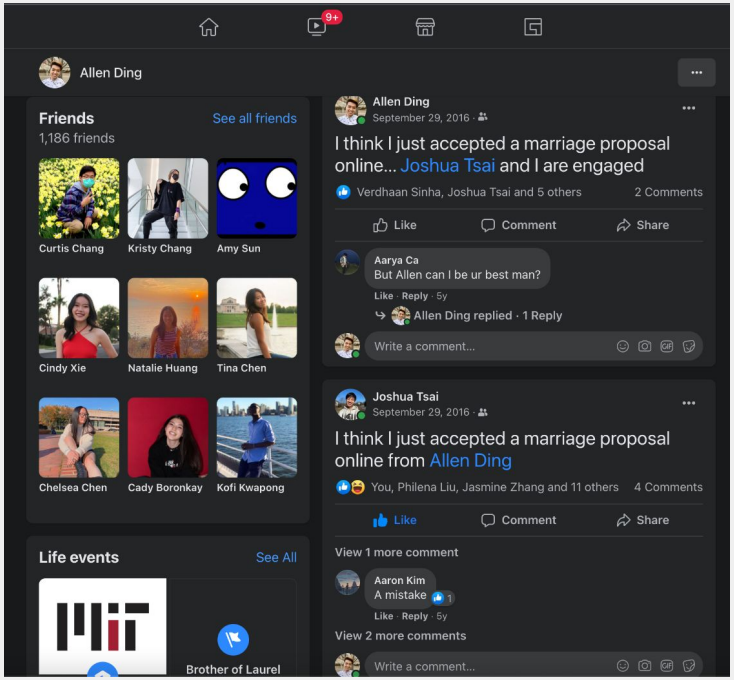
Easy way of writing Facebook





But where is the Facebook tag defined?

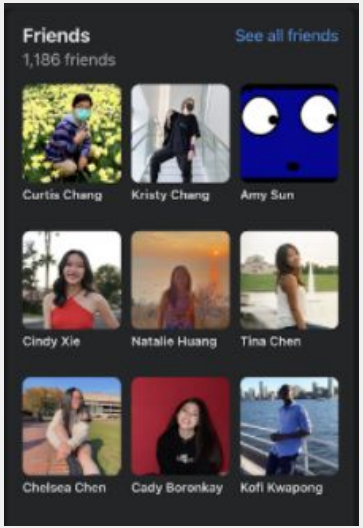
```
// Facebook.js

<div>
    <NavBar />
    <Friends />
    <Feed />
</div>
```

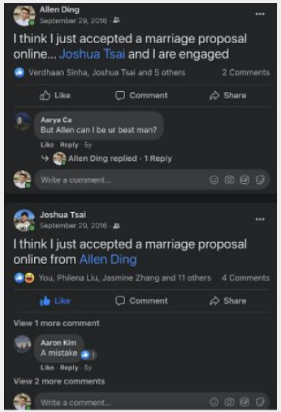


But where are the NavBar, Friends, and Feed tags defined?

```
// NavBar.js

<div>
    <img src='facebook.png'
/>
    <SearchBar />
    <img src='akshaj.png'>
    <p>Akshaj</p>
</div>
```

```
// Friends.js

<div>
    <img src='friend1.png' />
    <img src='friend2.png' />
    <img src='friend3.png' />
    <img src='friend4.png' />
</div>
```






```
// Feed.js

<div>
    <Post />
    <Post />
    <Post />
    <Post />
</div>
```

React

These 'fake HTML tags' are called Components

<Facebook />

<NavBar />

Components

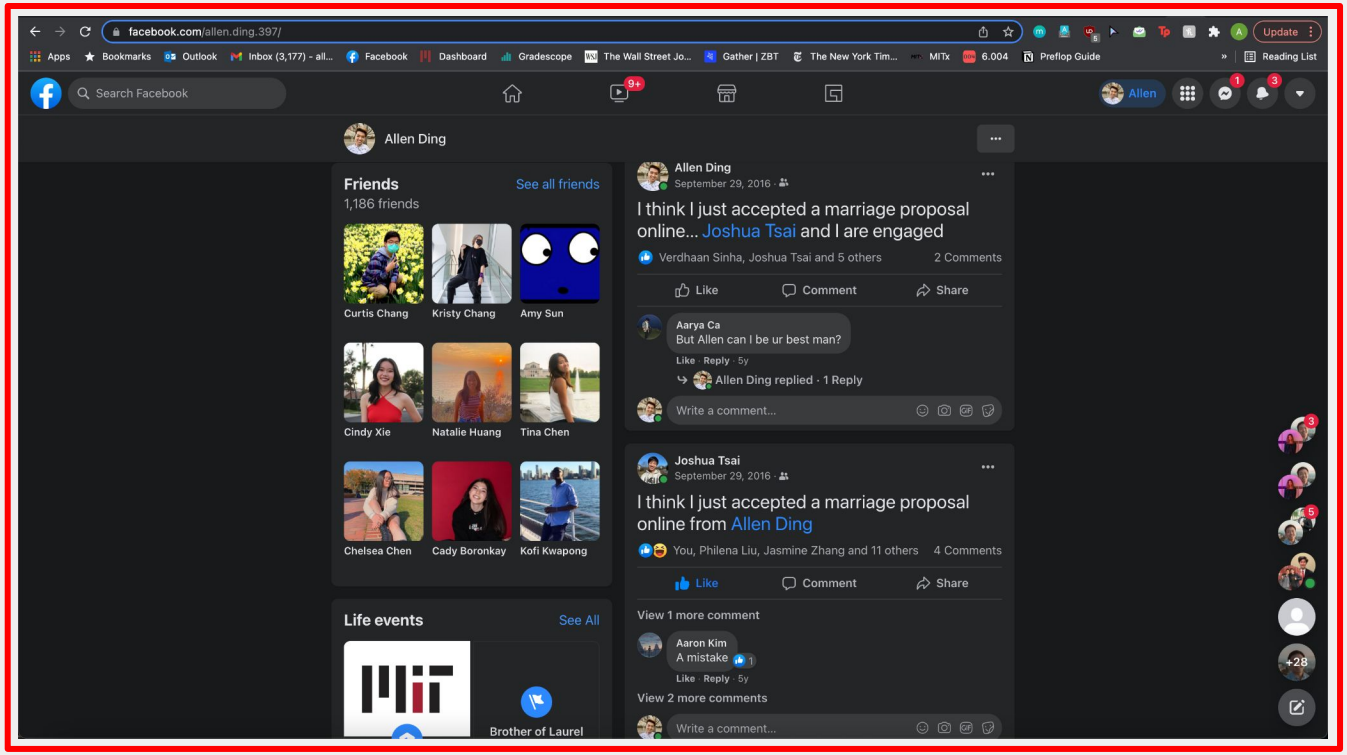
<Post />

<Feed />

<Sidebar />

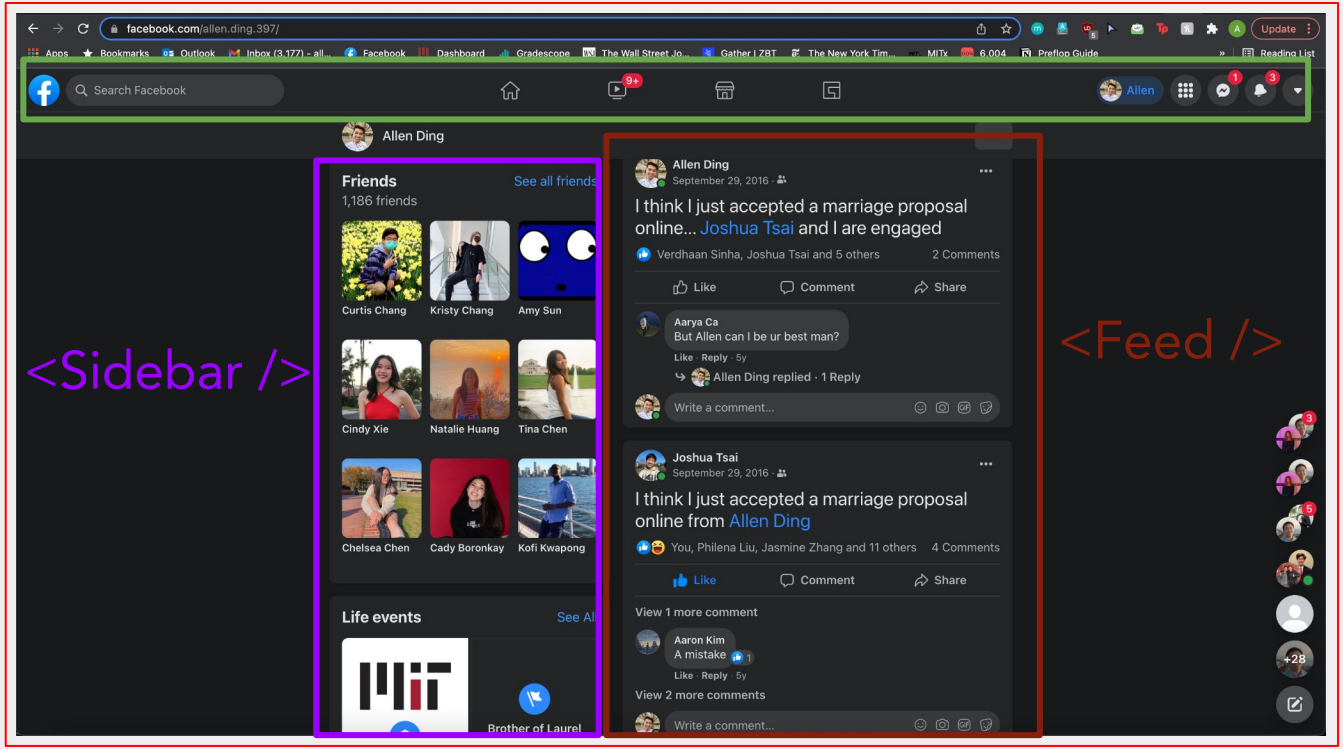
React Apps are "components of components"

The App component (<App />)

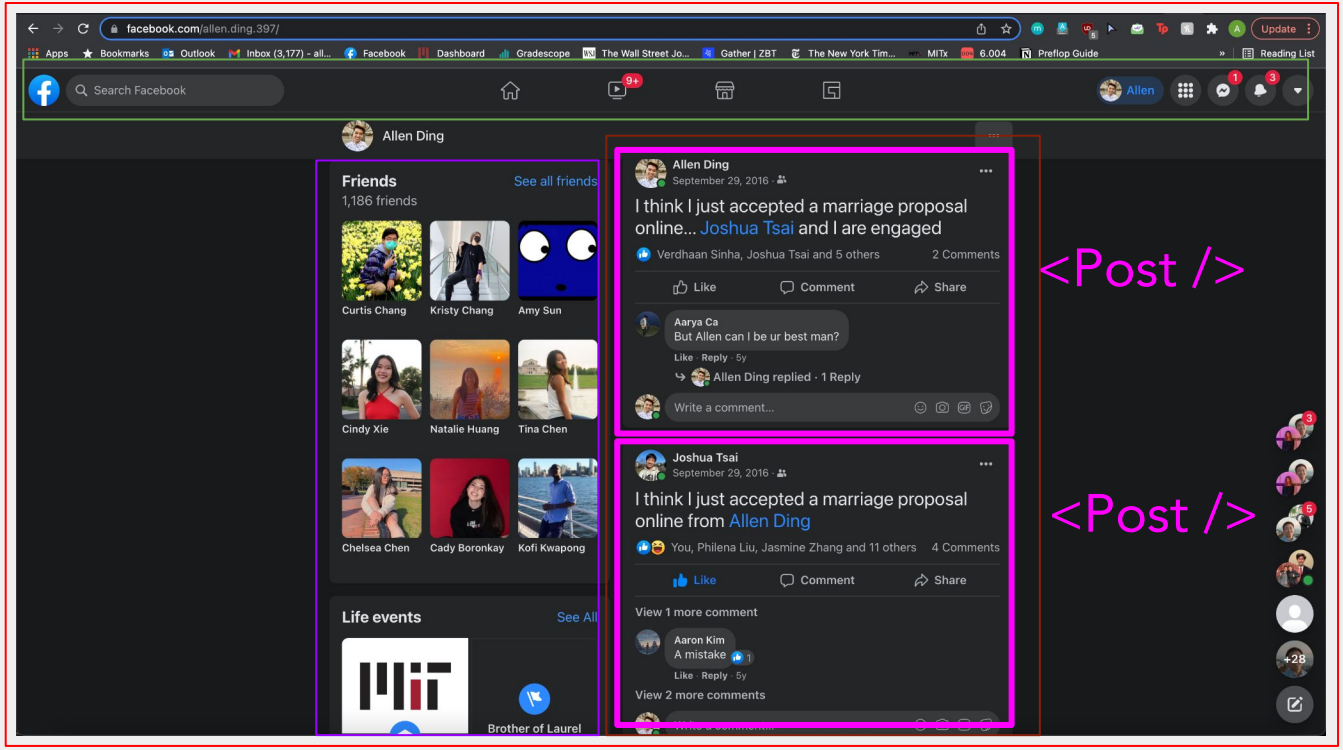


React Apps are "components of components"

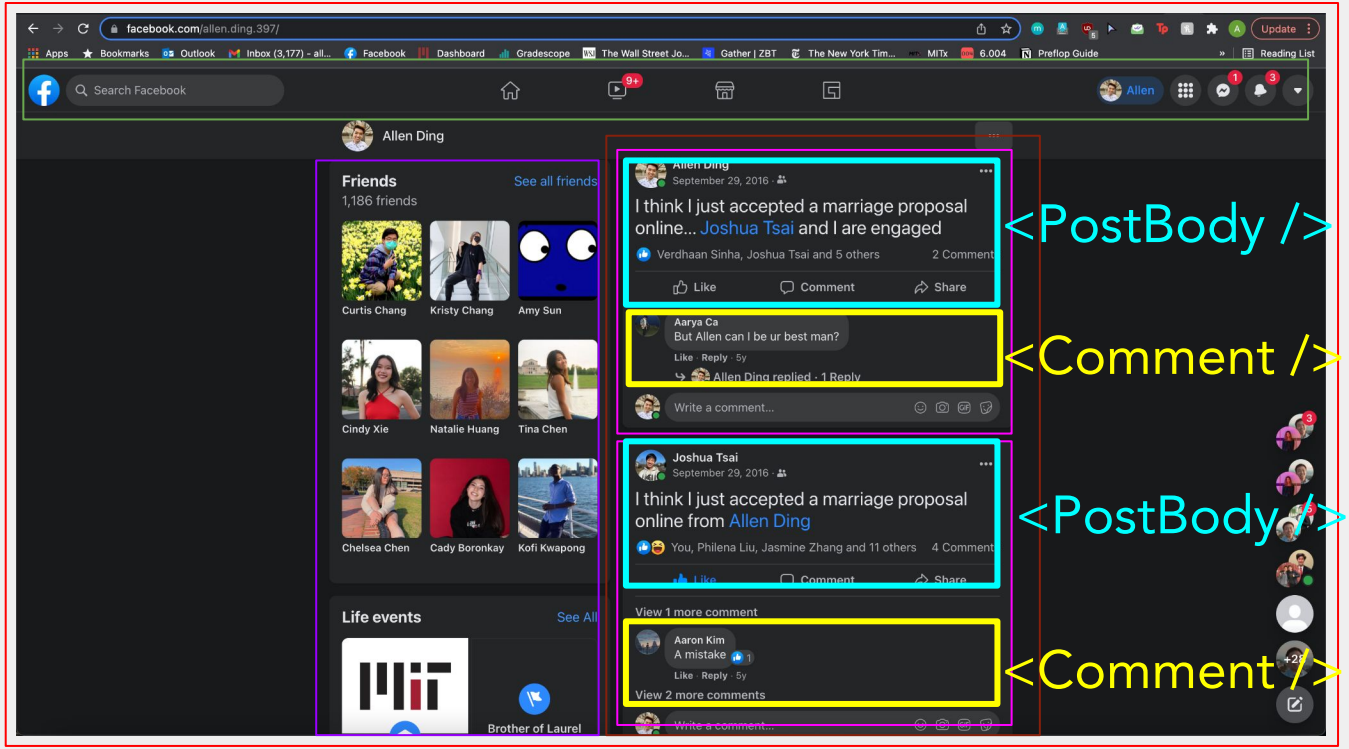
<Navbar />



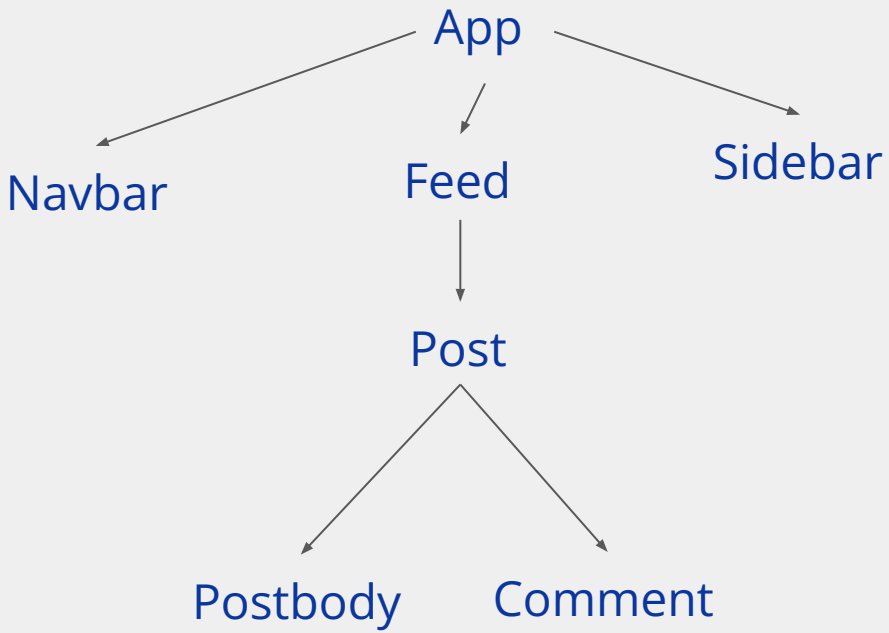
React Apps are "components of components"

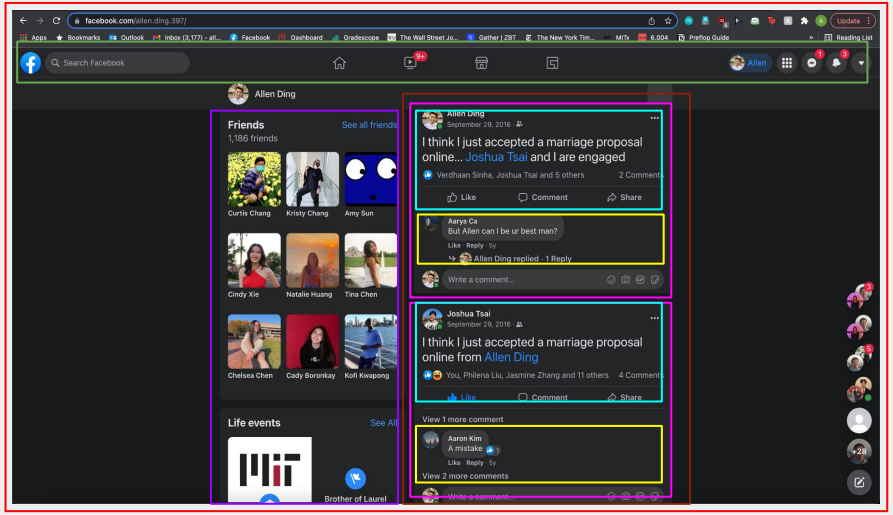


React Apps are "components of components"



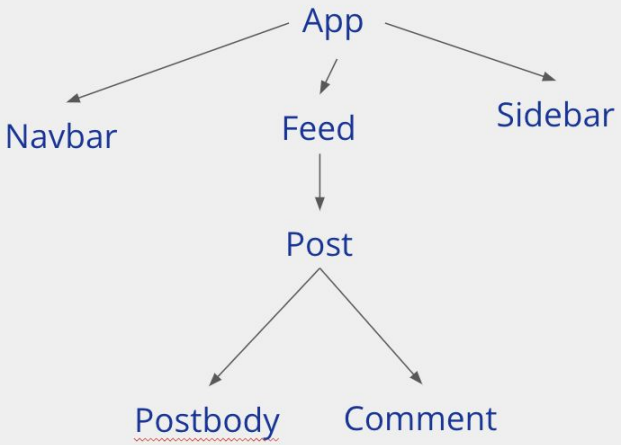
Component Tree Structure





Recap: Components

- React is a Framework that lets you **divide up your website into reusable components**
- Each component is kind of like a 'custom HTML tag' that you define
- Your app can be divided into a 'tree' of components



Recap: Components

Huh Whaddaya mean reusable ???

- React is a Framework that lets you **divide up your website into reusable components**
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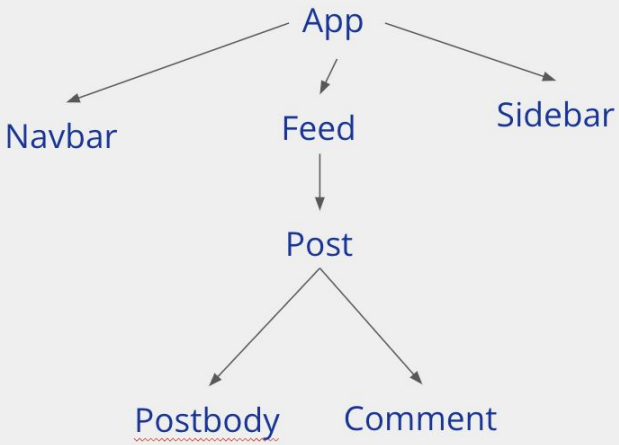
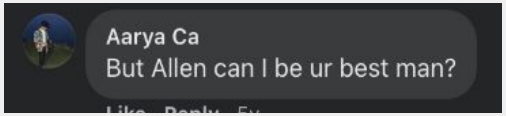


Comment Component



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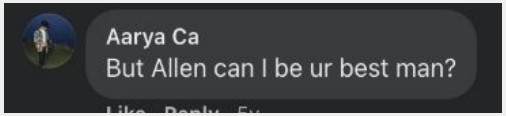
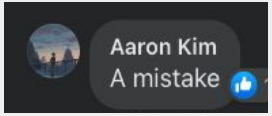
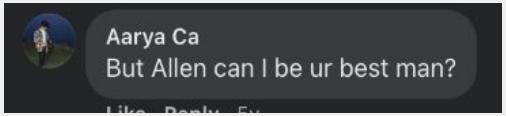
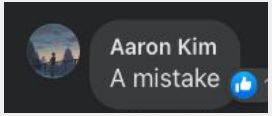
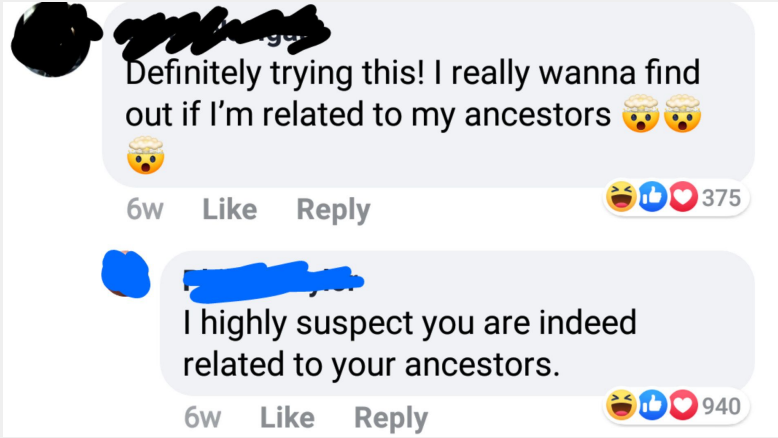




Comment Component

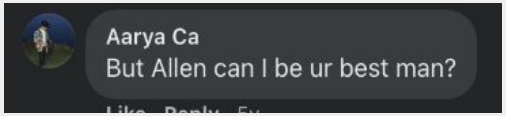


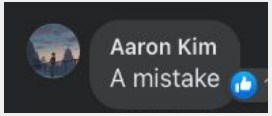


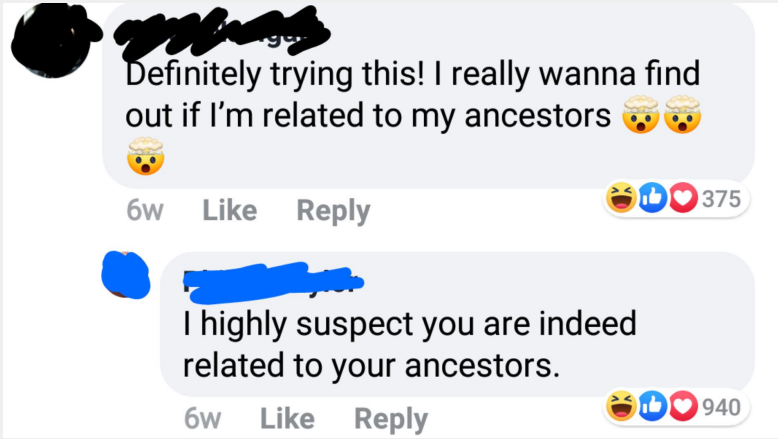


Comment Component

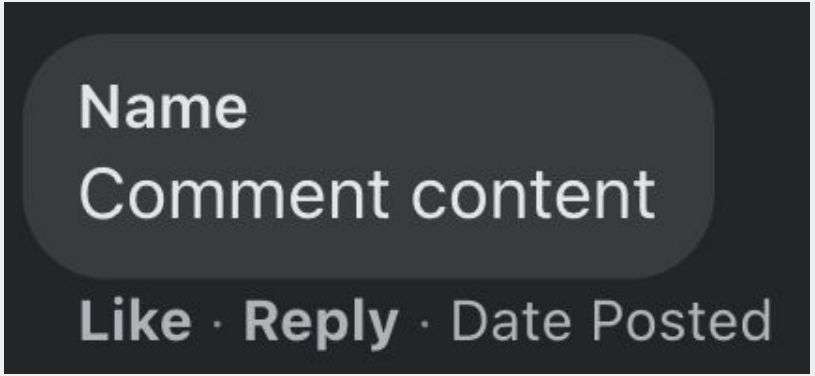
How can we generalize this?







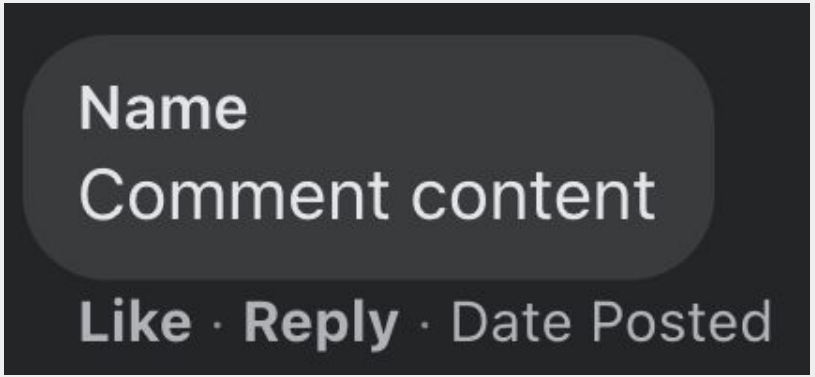
Comment Component



Comment Component

This is a visualization of the comment component!

- Describes how *comment* is going to be rendered on screen
- Is a skeleton for all comments



Comment Component

This is a visualization of the comment component!

- Describes how *comment* is going to be rendered on screen
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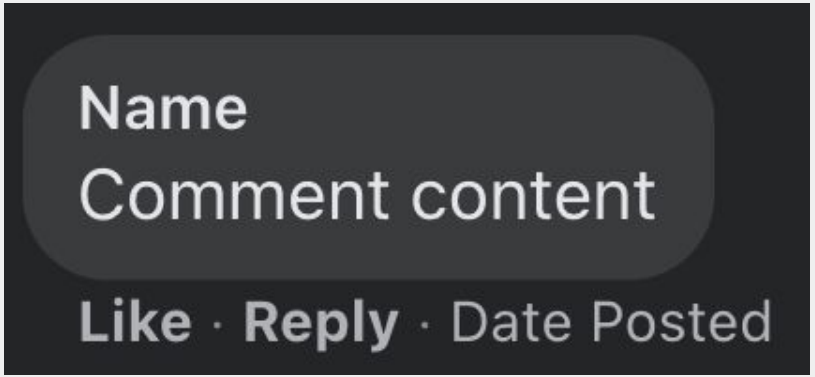
How do comments contain content then?



Props ('Inputs')

Inputs passed from a parent to a child component

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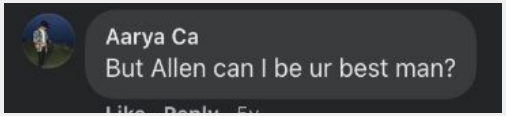
Parent → Child

Props ('Inputs')

Inputs passed from a parent to a child component

Parent

Child



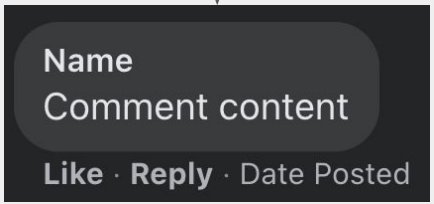
Rendered Comment

Props ('Inputs')

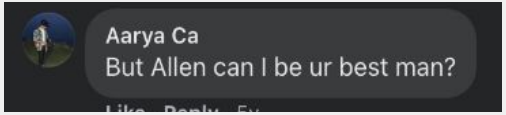
Inputs passed from a parent to a child component

Parent

props: Name,
Comment Content,
Date Posted



Child



Rendered Comment

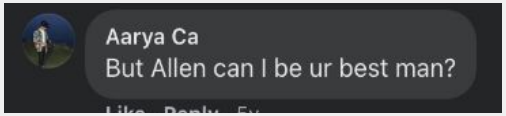
Props ('Inputs')

Inputs passed from a parent to a child component

Parent

Child

props are immutable!!!



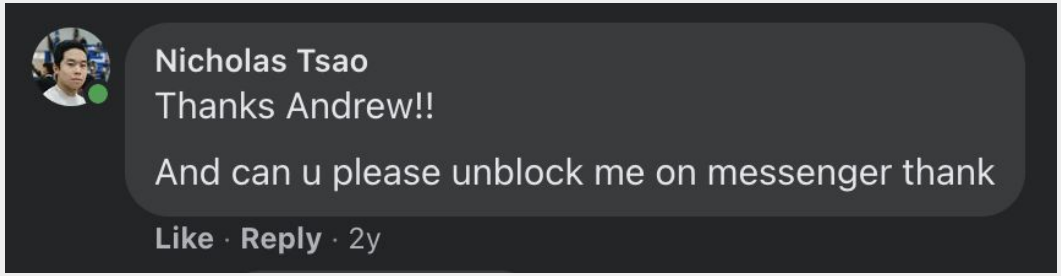
Rendered Comment

Comment Component

Now we have our reusable comment component

- We pass *props* in from parent to child
- Allows our skeleton to render comments with content

Are we done?

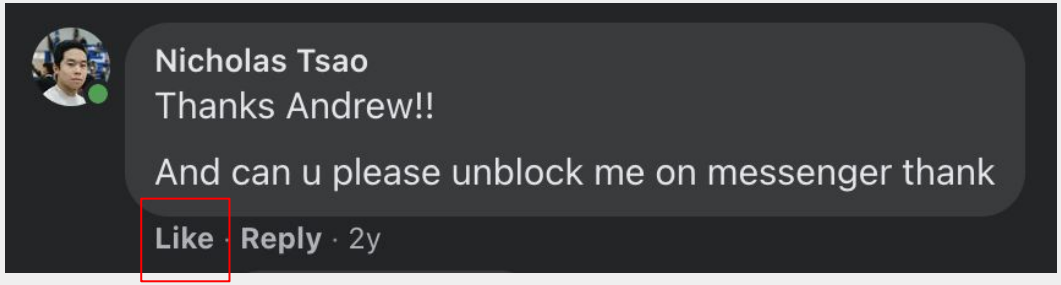


Comment Component

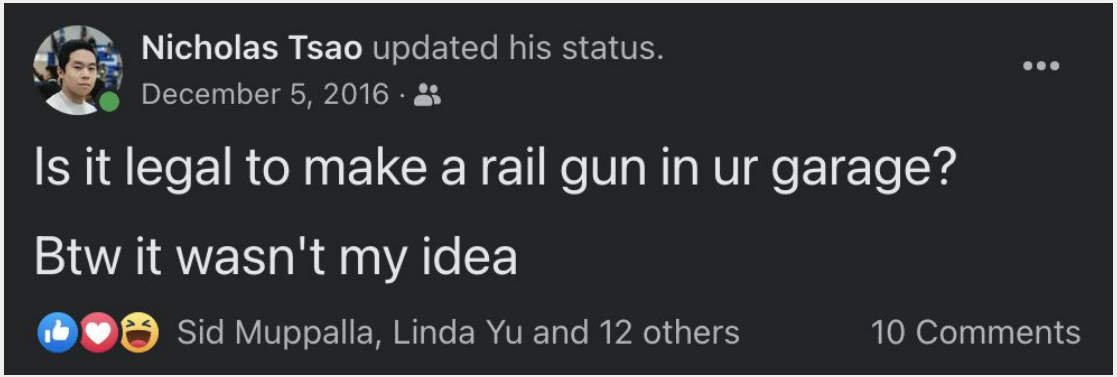
Now we have our reusable comment component

- We pass *props* in from parent to child
- Allows our skeleton to render comments with content

Are we done? No; we cannot like comments!



When we like something, how do we store this information? Can we code this using props?

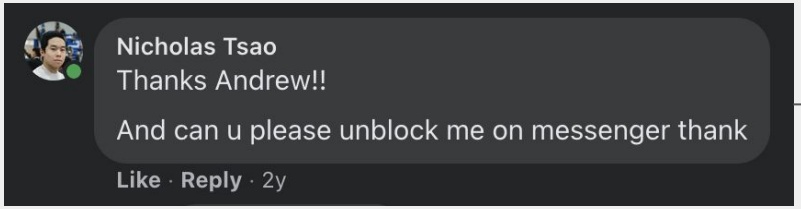


State

Private information maintained by a component.

state:

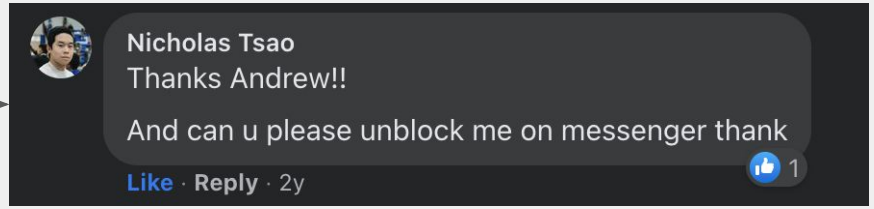
Likes: 0



Like

state:

Likes: 1

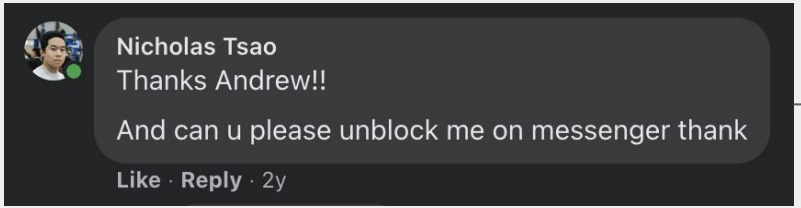


State

Private information maintained by a component.

state:

Likes: 0



Like

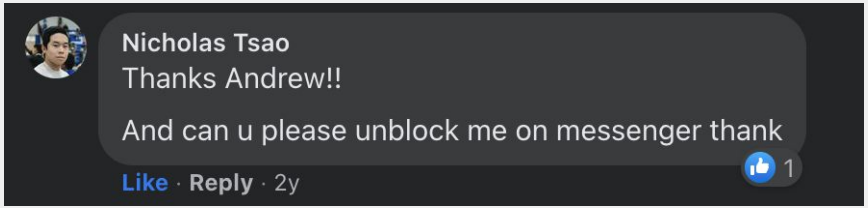
state:

Likes: 1

Comment Component

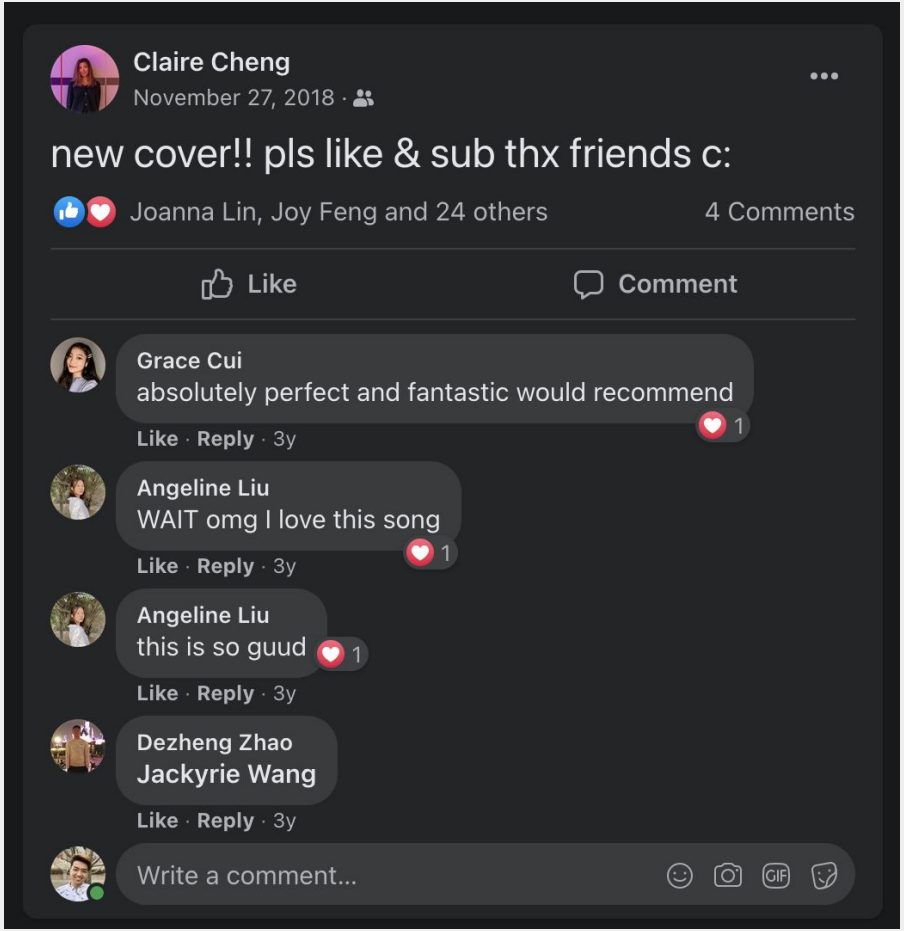
Now we have our reusable comment component

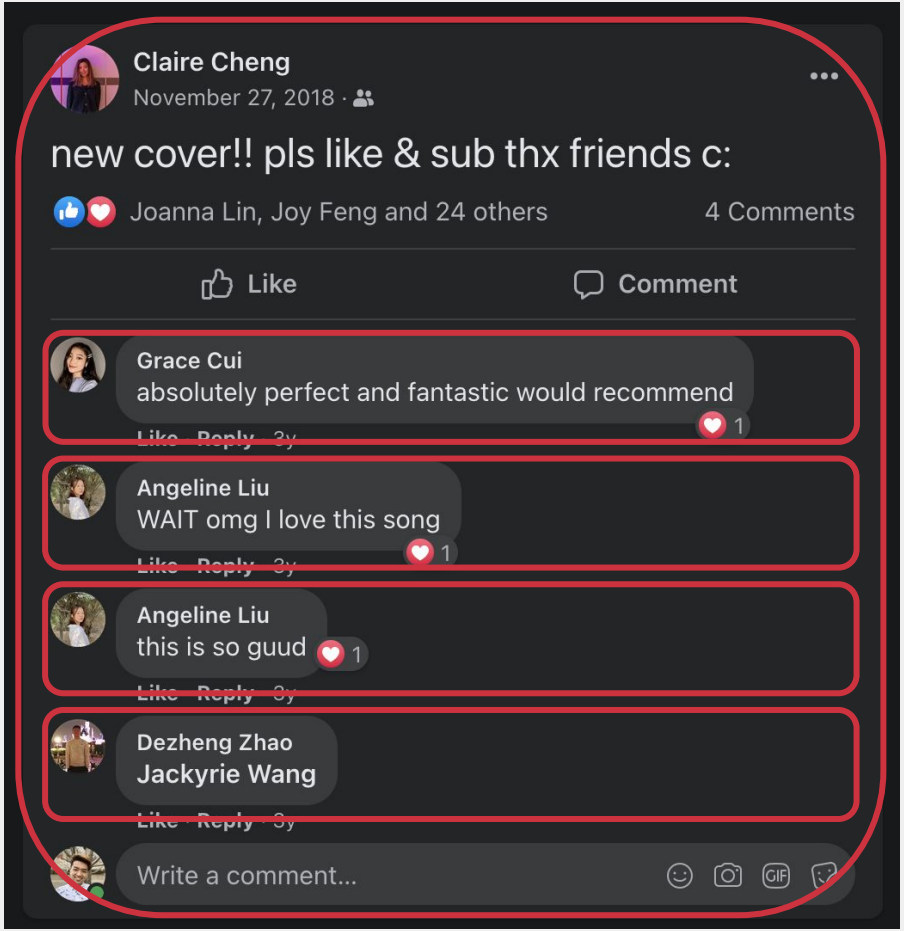
- We pass *props* in from parent to child
- Allows our skeleton to render comments with content
- *State* keeps track of private information that can be changed and influence how your app renders



Writing ReactJS Components

www.facebook.com


Claire Cheng
November 27, 2018 ·
new cover!! pls like & sub thx friends c:
Joanna Lin, Joy Feng and 24 others
4 Comments
Like
Comment
Grace Cui
absolutely perfect and fantastic would recommend
1
Like · Reply · 3y
Angeline Liu
WAIT omg I love this song
1
Like · Reply · 3y
Angeline Liu
this is so guud
1
Like · Reply · 3y
Dezheng Zhao
Jackyrie Wang
Like · Reply · 3y
Write a comment...
GIF


Claire Cheng
November 27, 2018 ·
new cover!! pls like & sub thx friends c:
Joanna Lin, Joy Feng and 24 others
4 Comments
Like
Comment
Grace Cui
absolutely perfect and fantastic would recommend
1
Like · Reply · 3y
Angeline Liu
WAIT omg I love this song
1
Like · Reply · 3y
Angeline Liu
this is so guud
1
Like · Reply · 3y
Dezheng Zhao
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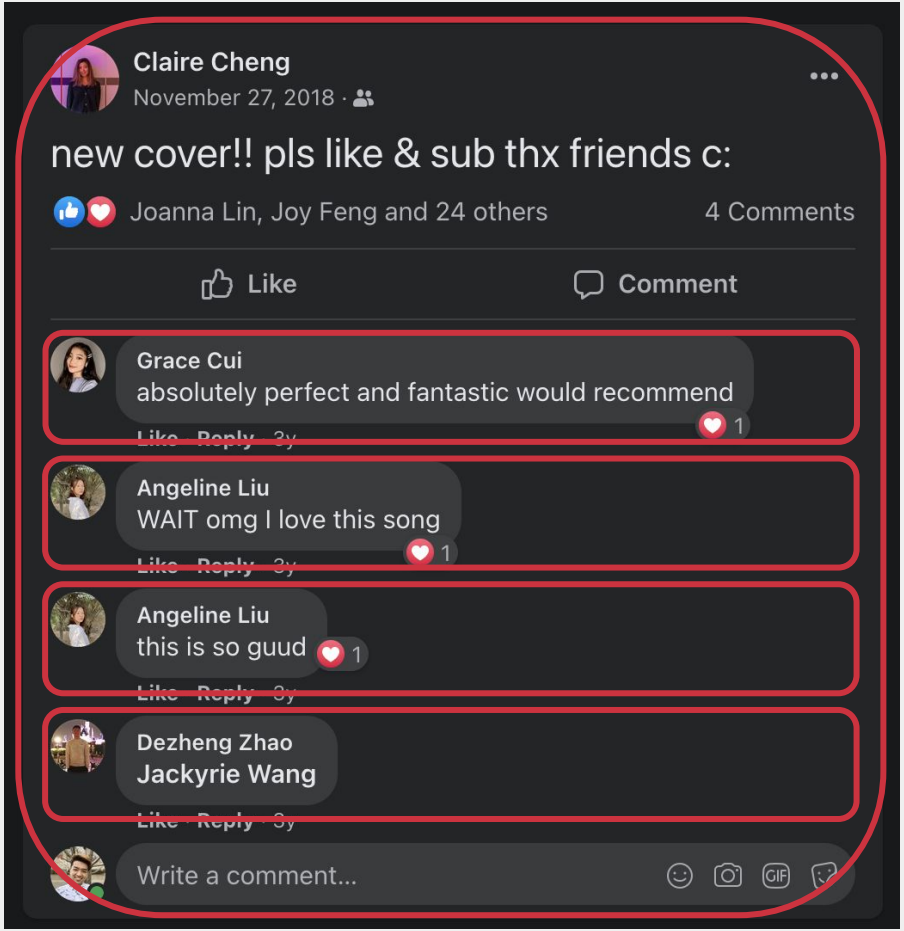


Component Tree

App

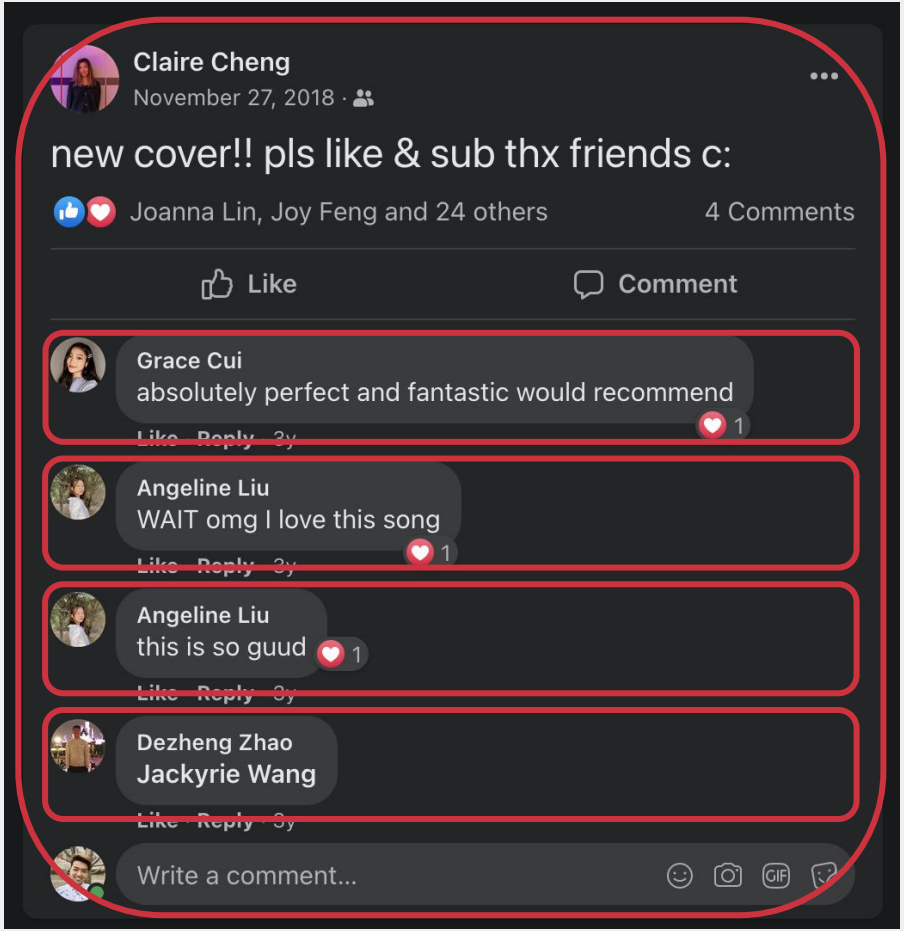
Post

Comment

Comment

Comment

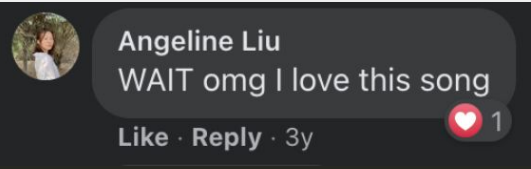
Comment



Post — State: postContent, [commentContent], isLiked

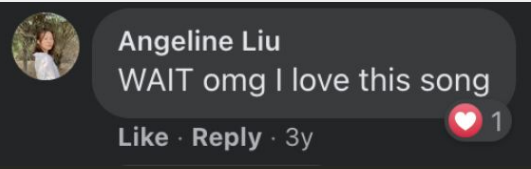
Comment — Props: commentContent, State: isLiked

```jsx
import React, { useState } from "react";

const Comment = (props) => {



  return (


  );
};

export default Comment;
```

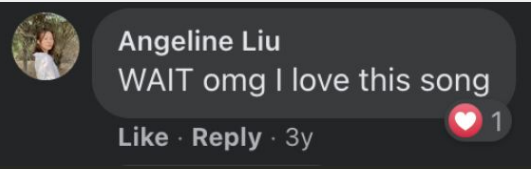


```jsx
import React, { useState } from "react";

const Comment = (props) => {



  return (


  );
};

export default Comment;
```

Comment component is a *function* that takes in props as an input



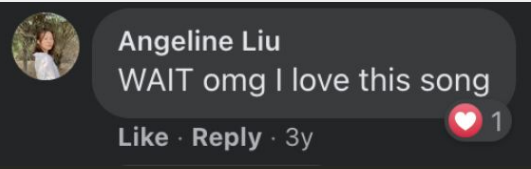
```jsx
import React, { useState } from "react";

const Comment = (props) => {



  return (


  );
};

export default Comment;
```



Expects a return type of HTML like code

What you return will describe how the component appears

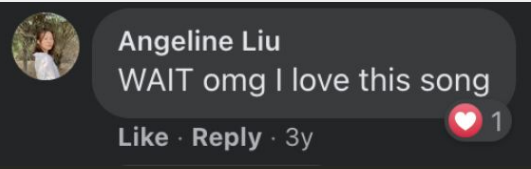
```jsx
import React, { useState } from "react";

const Comment = (props) => {
  const [isLiked, setIsLiked] = useState(false);



  return (



  );
};

export default Comment;
```



Set initial states

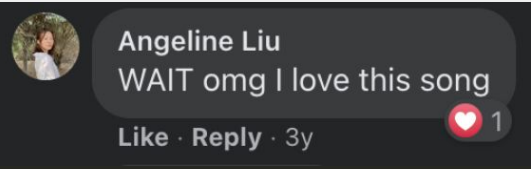
Declares isLiked to False, and specifies “setIsLiked” as the function to update the state

```jsx
import React, { useState } from "react";

const Comment = (props) => {
  const [isLiked, setIsLiked] = useState(false);



  return (
    <div id="claireComment" className="comment-text">


    </div>
  );
};

export default Comment;
```



Return a div; style it appropriately

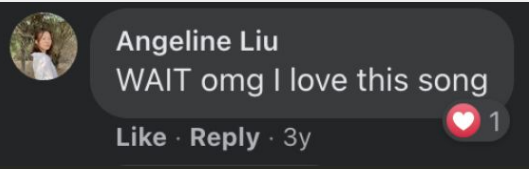
```
1   import React, { useState } from "react";
2
3   const Comment = (props) => {
4     const [isLiked, setIsLiked] = useState(false);
5
6
7
8
9
10    return (
11      <div id="claireComment" className="comment-text">
12
13
14      </div>
15    );
16  };
17
18  export default Comment;
```



Note: we use className to access CSS classes

Return a div; style it appropriately

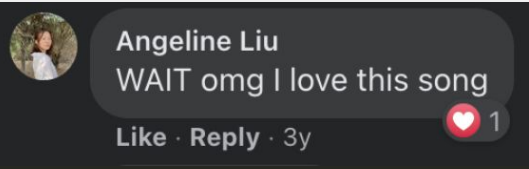
```jsx
import React, { useState } from "react";

const Comment = (props) => {
  const [isLiked, setIsLiked] = useState(false);



  return (
    <div id="claireComment" className="comment-text">
      WAIT omg I love this song

    </div>
  );
};

export default Comment;
```



Note: we use className to access CSS classes

Return the content of the comment

```jsx
import React, { useState } from "react";

const Comment = (props) => {
  const [isLiked, setIsLiked] = useState(false);



  return (
    <div id="claireComment" className="comment-text">
      {props.content}

    </div>
  );
};

export default Comment;
```



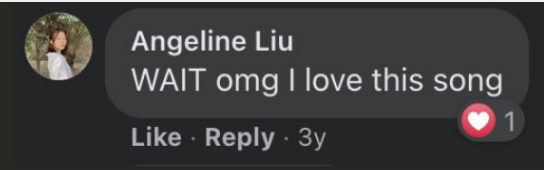
Note: we use className to access CSS classes

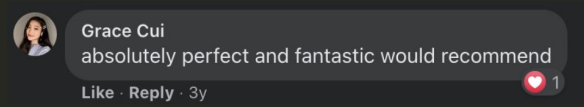
Access the content of the comment, which is passed in through props

```jsx
import React, { useState } from "react";

const Comment = (props) => {
  const [isLiked, setIsLiked] = useState(false);



  return (
    <div id="claireComment" className="comment-text">
      {props.content}

    </div>
  );
};

export default Comment;
```

Note: we use className to access CSS classes

Access the content of the comment, which is passed in through props

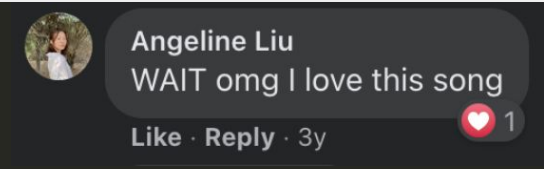


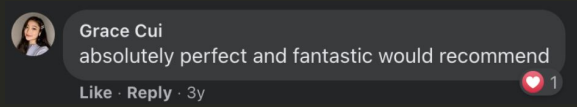


```jsx
import React, { useState } from "react";

const Comment = (props) => {
  const [isLiked, setIsLiked] = useState(false);



  return (
    <div id="claireComment" className="comment-text">
      {props.content}

    </div>
  );
};

export default Comment;
```

Note: we use className to access CSS classes

Access the content of the comment, which is passed in through props





```jsx
import React, { useState } from "react";

const Comment = (props) => {
  const [isLiked, setIsLiked] = useState(false);



  return (
    <div id="claireComment" className="comment-text">
      {props.content}

    </div>
  );
};

export default Comment;
```

Note: we use className to access CSS classes

Now this component is reusable!

```
1   import React, { useState } from "react";
2
3   const Comment = (props) => {
4     const [isLiked, setIsLiked] = useState(false);
5
6
7
8
9
10    return (
11      <div id="claireComment" className="comment-text">
12        {props.content}
13
14      </div>
15    );
16  };
17
18  export default Comment;
```

Note: we use className to access CSS classes

Access the content of the comment, which is passed in through props

( ) allows us to write HTML code inside JavaScript

{} allows us to return to JavaScript inside the HTML environment inside the JavaScript class

weblab.to/react-guide-1

Akshaj Kadaveru

Add to story | Edit profile | ...

Intro

Lives in **Fairfax, Virginia**

Pronounces name AHKS-hahj KUH-DUH-VAY-ROO

Edit Details

Add Hobbies

Add Featured

Photos

See All Photos

Akshaj Kadaveru updated his cover photo.
December 1, 2020 ·

Sign up for web.lab at https://portal.weblab.to/
Learning web dev is one of the most fun ways to spend an IAP.. I had a blast last year!! You'll go from no experience to web dev god in a month 😃

Daniel Sun, Vincent Huang and 48 others — 7 Comments

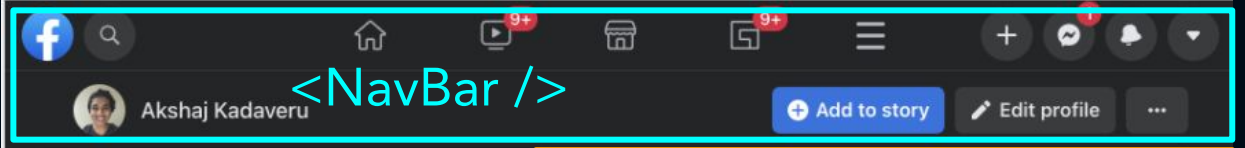
Like | Comment | Share

Deekshita Kacham
I CANT WAIT!!
Love · Reply · 1y

Jenny Pan
nice pfp akshaj
Love · Reply · 1y

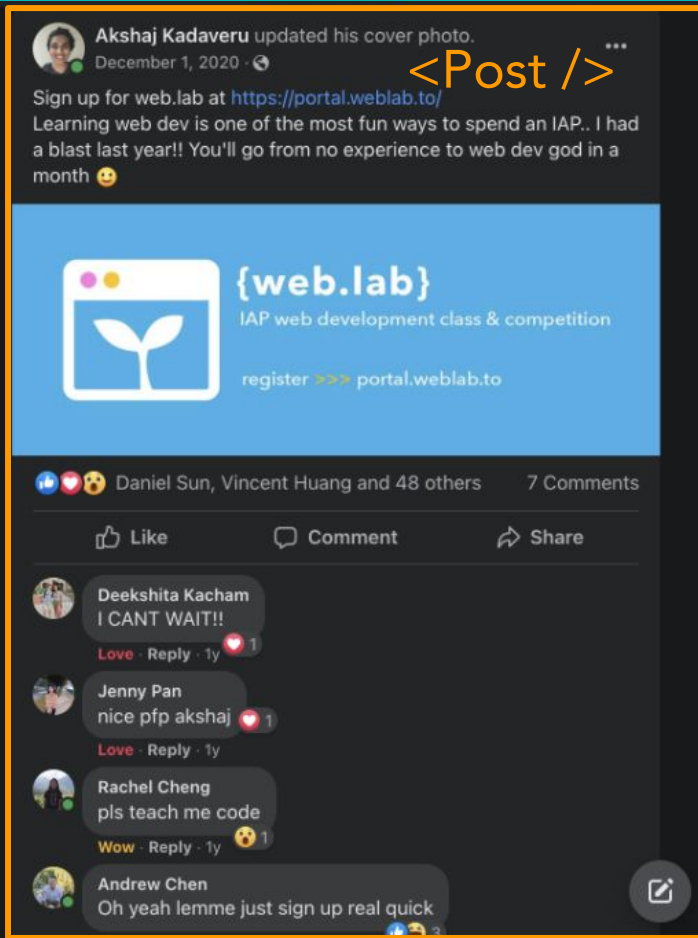
Rachel Cheng
pls teach me code
Wow · Reply · 1y

Andrew Chen
Oh yeah lemme just sign up real quick


Akshaj Kadaveru
<NavBar />
Add to story
Edit profile

Intro
<Intro />
Lives in Fairfax, Virginia
Pronounces name AHKS-hahj KUH-DUH-VAY-ROO
Edit Details
Add Hobbies
Add Featured

Photos
<Photos />
See All Photos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{web.lab}
IAP web development class & competition
register >>> portal.weblab.to
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Love · Reply · 1y
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pls teach me code
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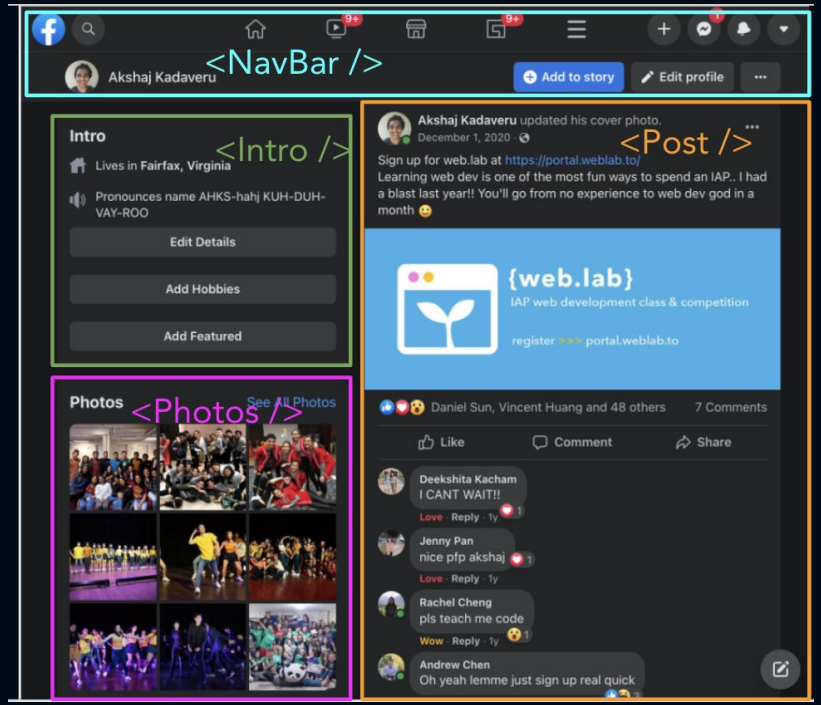
Oh yeah lemme just sign up real quick

App.js



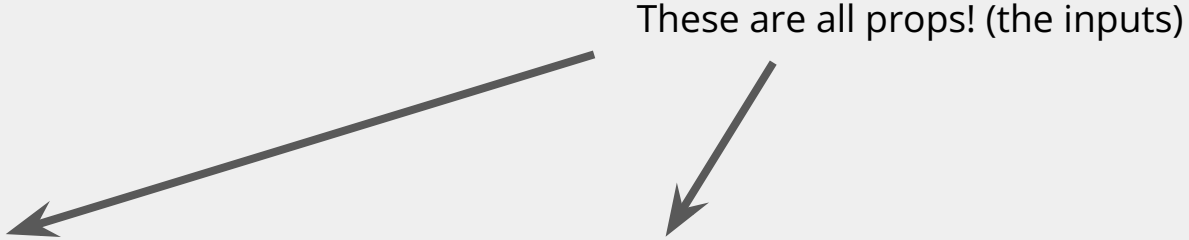

```jsx
import React from "react";
import NavBar from "./NavBar.js";
import Intro from "./Intro.js";
import Photos from "./Photos.js";

const App = () => {
  return (
    <div>
      <NavBar />
      <div>
        <div>
          <Intro />
          <Photos />
        </div>
        <Post />
      </div>
    </div>
  );
};

export default App;
```

Props ('Inputs')

Inputs passed from a parent to a child component




```
<Post name="Akshaj" text="Welcome to web lab!" />
```

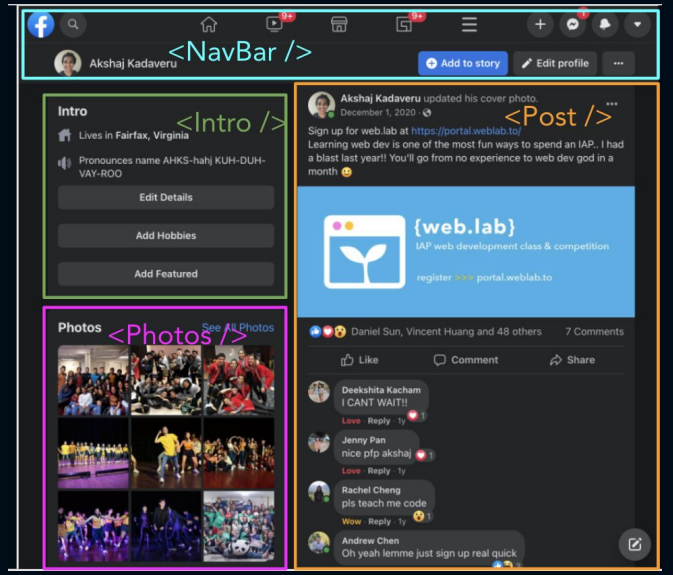
here, props = {name: "Akshaj", text: "Welcome to web lab!"}

App.js

```
import React from "react";
import NavBar from "./NavBar.js";
import Intro from "./Intro.js";
import Photos from "./Photos.js";

const App = () => {
  return (
    <div>
      <NavBar />
      <div>
        <div>
          <Intro city="Fairfax, Virginia" pronunciation="AHKS-hahj KUH-DUH-VAY-ROO" />
          <Photos links={["firstpic.jpg", "dancepic.jpg", "funnypic.jpg"]} />
        </div>
        <Post name="Akshaj Kadaveru" text="Sign up for web lab!" />
      </div>
    </div>
  );
};

export default App;
```



Intro.js

```jsx
import React from "react";
const Intro = () => {
  return (
    <div>
      <p>
        Lives in <b>Fairfax, Virginia</b>
      </p>
      <p>Pronounces name AHKS-hahj KUH-DUH-VAY-ROO</p>
      <button>Edit Details</button>
      <button>Add Hobbies</button>
      <button>Add Featured</button>
    </div>
  );
};

export default Intro;
```

Intro.js

```jsx
import React from "react";
const Intro = (props) => {
  return (
    <div>
      <p>
        Lives in <b>{props.city}</b>
      </p>
      <p>Pronounces name {props.pronunciation}</p>
      <button>Edit Details</button>
      <button>Add Hobbies</button>
      <button>Add Featured</button>
    </div>
  );
};

export default Intro;
```

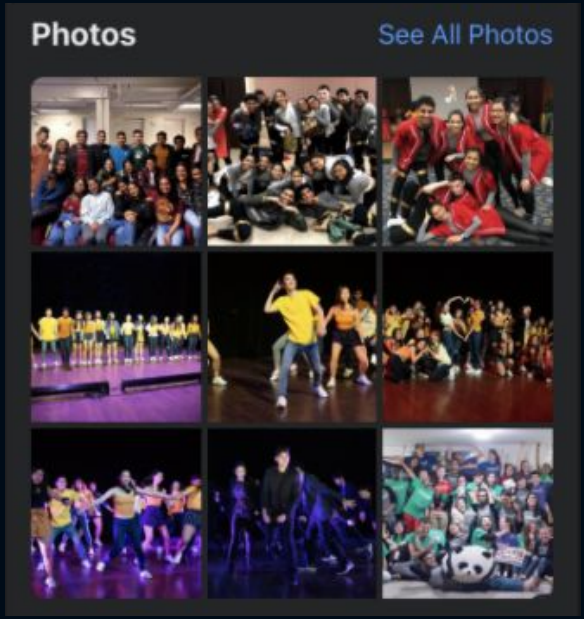
Intro.js

```jsx
import React from "react";
const Intro = (props) => {
  return (
    <div>
      <p>
        Lives in <b>{props.city}</b>
      </p>
      <p>Pronounces name {props.pronunciation}</p>
      <button>Edit Details</button>
      <button>Add Hobbies</button>
      <button>Add Featured</button>
    </div>
  );
};

export default Intro;
```

used in App.js: `<Intro city="Fairfax, Virginia" pronunciation="AHKS-hahj KUH-DUH-VAY-ROO" />`

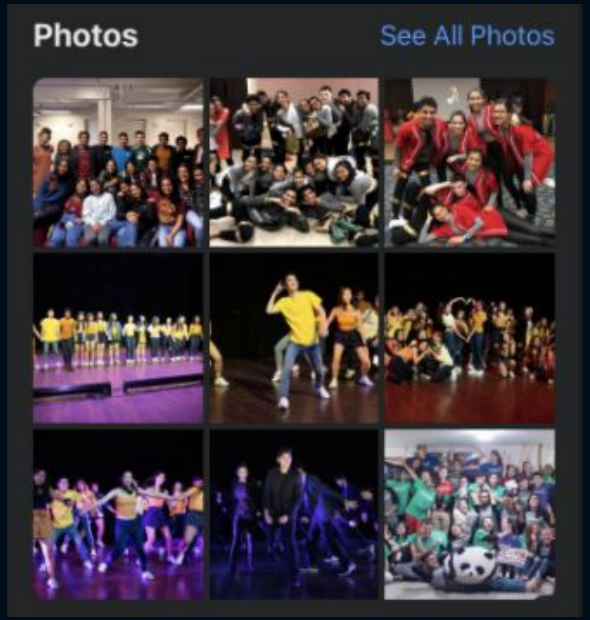
Photos.js




```
import React from "react";
const Photos = () => {
  const myLinks = ["firstpic.jpg", "dancepic.jpg", "funnypic.jpg"];
  const myImageTags = myLinks.map((photoLink) => {
    return <img src={photoLink} />;
  });
  return (
    <div>
      <h3>Photos</h3>
      {myImageTags}
    </div>
  );
};

export default Photos;
```

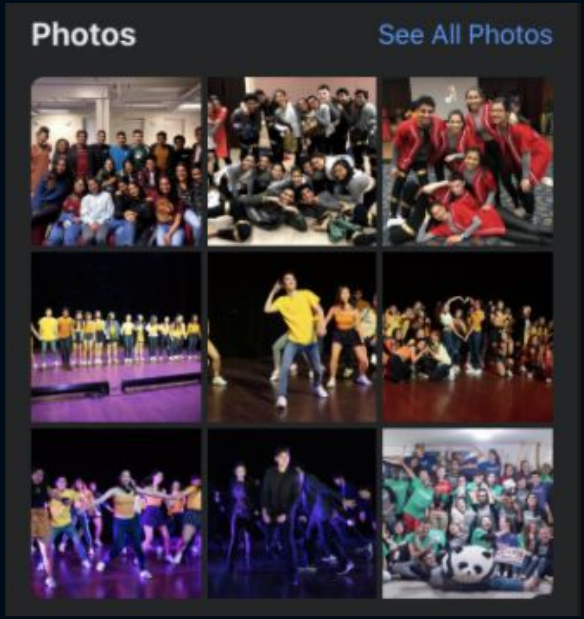
Photos.js




```
import React from "react";
const Photos = (props) => {
  const myImageTags = props.links.map((photoLink) => {
    return <img src={photoLink} />;
  });
  return (
    <div>
      <h3>Photos</h3>
      {myImageTags}
    </div>
  );
};

export default Photos;
```

Photos.js




```jsx
import React from "react";
const Photos = (props) => {
  const myImageTags = props.links.map((photoLink) => {
    return <img src={photoLink} />;
  });
  return (
    <div>
      <h3>Photos</h3>
      {myImageTags}
    </div>
  );
};

export default Photos;
```

used in App.js: `<Photos links={["firstpic.jpg", "dancepic.jpg", "funnypic.jpg"]} />`

Post.js

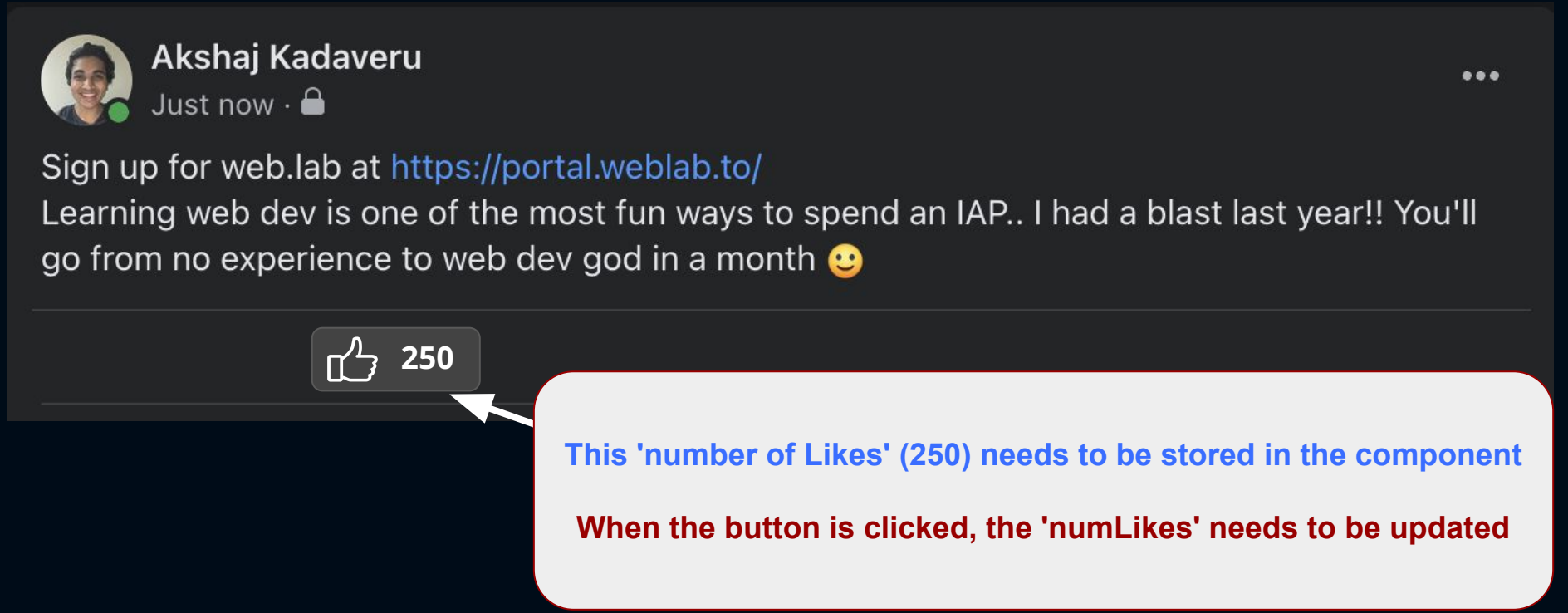
Akshaj Kadaveru

Just now · 🔒

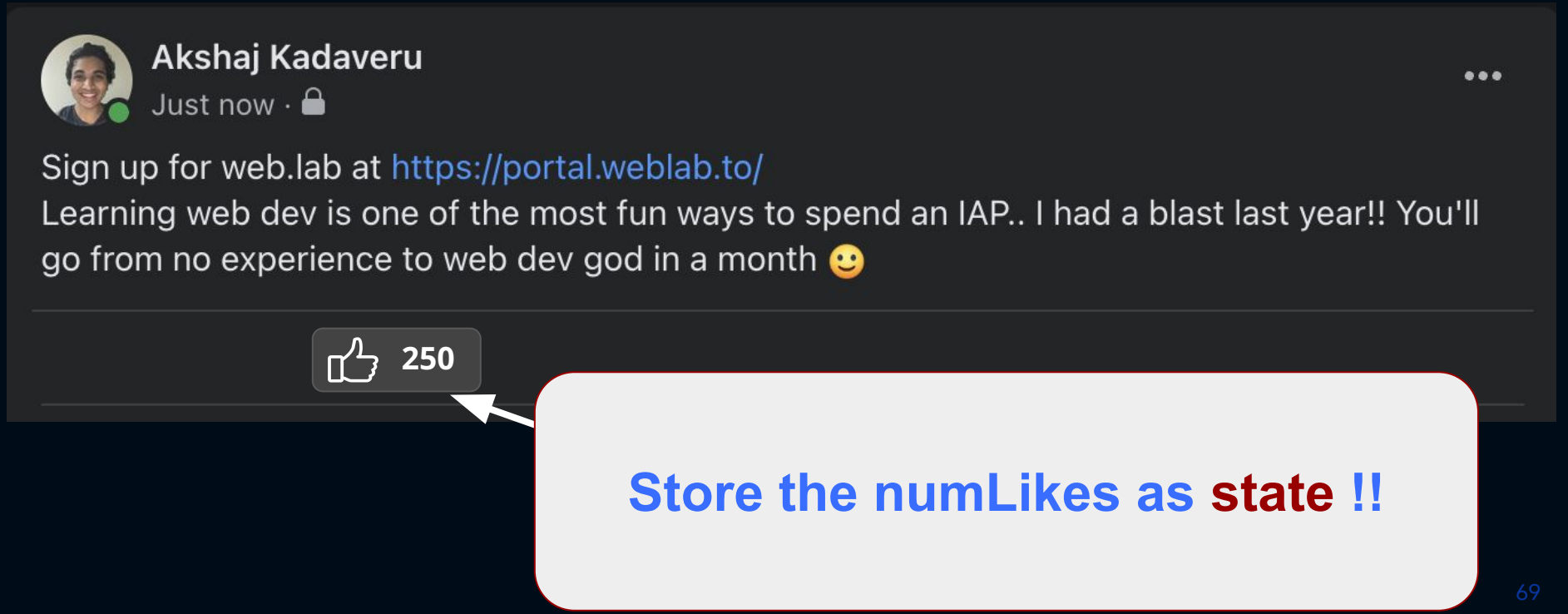
Sign up for web.lab at https://portal.weblab.to/
Learning web dev is one of the most fun ways to spend an IAP.. I had a blast last year!! You'll go from no experience to web dev god in a month 🙂

👍 250

Post.js


Akshaj Kadaveru
Just now ·
Sign up for web.lab at https://portal.weblab.to/
Learning web dev is one of the most fun ways to spend an IAP.. I had a blast last year!! You'll go from no experience to web dev god in a month 🙂
250
This 'number of Likes' (250) needs to be stored in the component
When the button is clicked, the 'numLikes' needs to be updated

Post.js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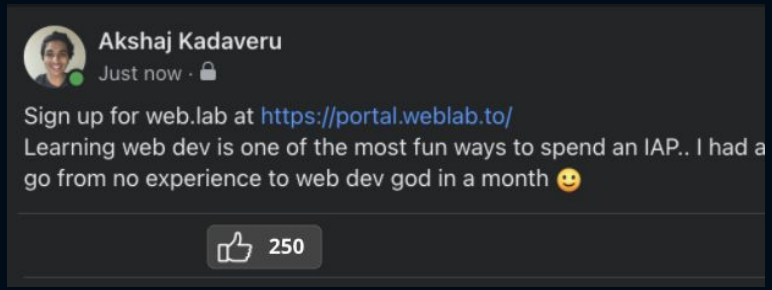
Learning web dev is one of the most fun ways to spend an IAP.. I had a blast last year!! You'll go from no experience to web dev god in a month 🙂
250
Store the numLikes as state !!

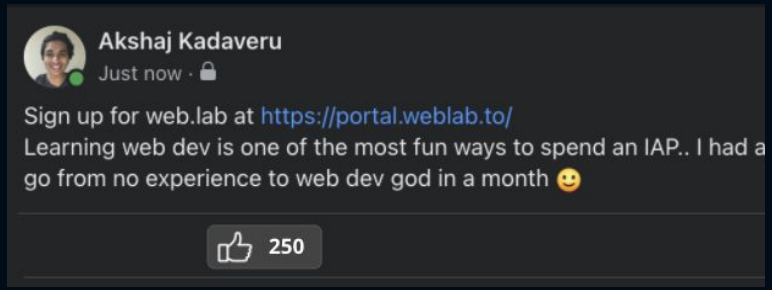
Post.js




```jsx
import React from "react";
const Post = () => {
  return (
    <div className="post">
      <h3>Akshaj Kadaveru</h3>
      <p>Sign up for web lab!</p>
      <button>
        <img src="likeIcon.png" />
        250
      </button>
    </div>
  );
};

export default Post;
```

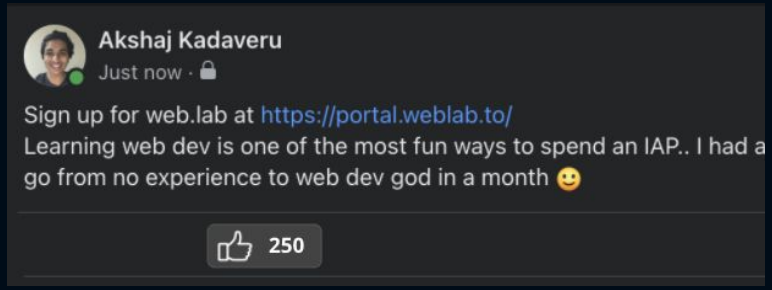
Post.js




```jsx
import React from "react";
const Post = (props) => {
  return (
    <div className="post">
      <h3>{props.name}</h3>
      <p>{props.text}</p>
      <button>
        <img src="likeIcon.png" />
        250
      </button>
    </div>
  );
};

export default Post;
```

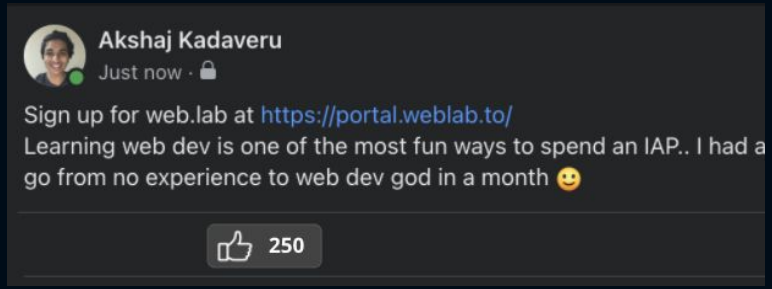
Post.js




```jsx
import React, { useState } from "react";
const Post = (props) => {
  const [numLikes, setNumLikes] = useState(0);
  return (
    <div className="post">
      <h3>{props.name}</h3>
      <p>{props.text}</p>
      <button
        onClick={() => {
          setNumLikes(numLikes + 1);
        }}
      >
        <img src="likeIcon.png" />
        {numLikes}
      </button>
    </div>
  );
};

export default Post;
```

Post.js




```jsx
import React, { useState } from "react";
const Post = (props) => {
  const [numLikes, setNumLikes] = useState(0);
  return (
    <div className="post">
      <h3>{props.name}</h3>
      <p>{props.text}</p>
      <button
        onClick={() => {
          setNumLikes(numLikes + 1);
        }}
      >
        <img src="likeIcon.png" />
        {numLikes}
      </button>
    </div>
  );
};

export default Post;
```

POV: It's your first time learning ReactJS
and the tutorial is showing HTML in .JS file

Recap: Writing Components

- We divide our app into components, and put one in each file
- Each component is a function with props as the input, and returns HTML-like code

- **( )** allows us to enter an HTML environment
- Inside the HTML environment, **{}** allows us to create a mini JS environment

Recap: Writing Components

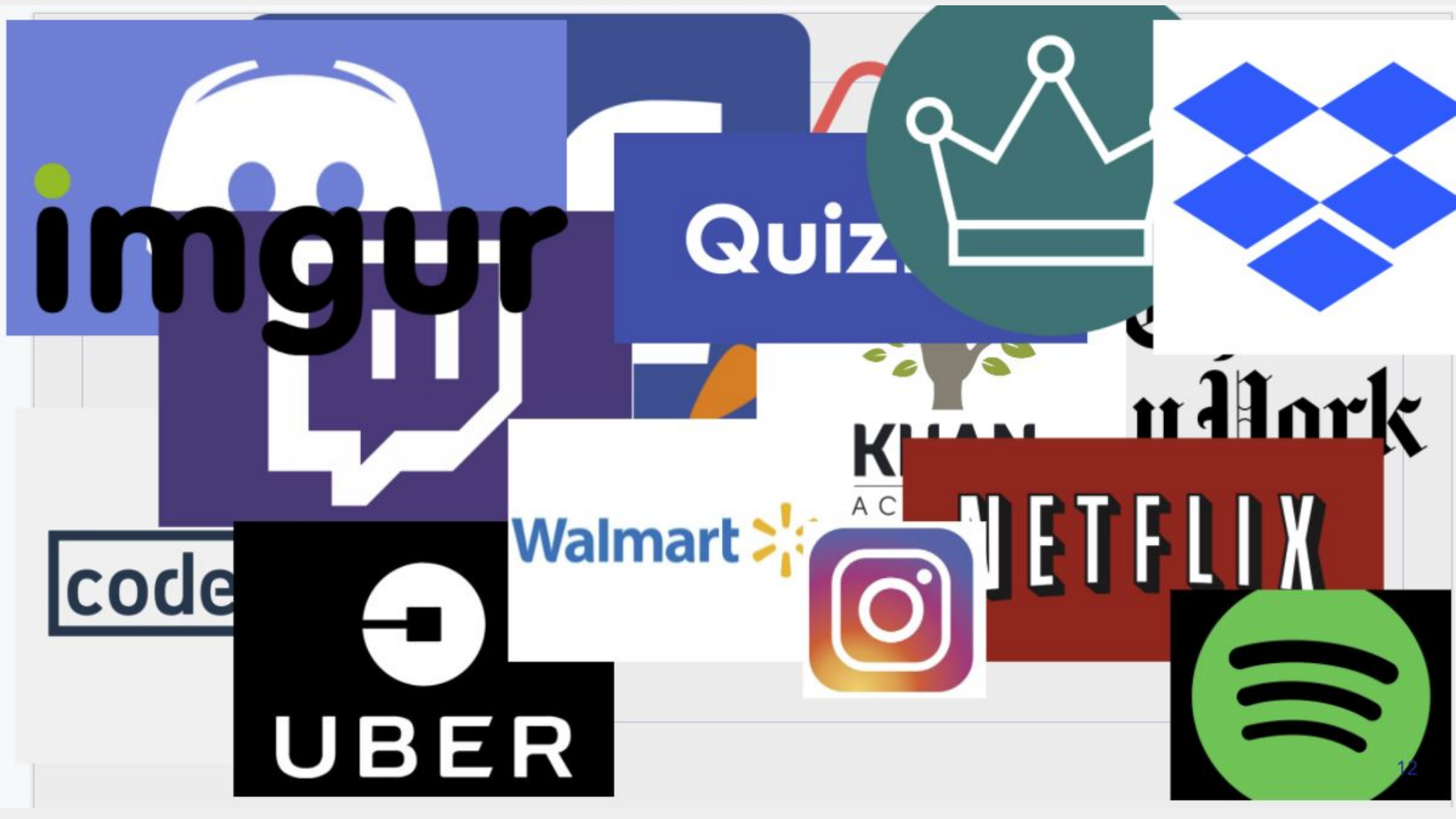
- **( )** allows us to enter an HTML environment
- Inside the HTML environment, **{}** allows us to create a mini JS environment

Recap: Writing Components

- We pass in props with **`<Post text="I love weblab" />`**
- We read in those props with **`props.text`**
- We declare state variables with

  `const [something, setSomething] = useState(initialValue)`
- React uses **className** instead of **class** for css styles

weblab.to/react-guide-1


imgur
Walmart
UBER
NETFLIX