Case Study – Interactive Support Page

Introduction

This case study uses React and also Tailwind CSS, and implements an interactive single page web app.

You are given instructions for scaffolding the project, and the code for all of the components. You do not have to remember the details of tailwind CSS, just that it is a popular resource to use with React.

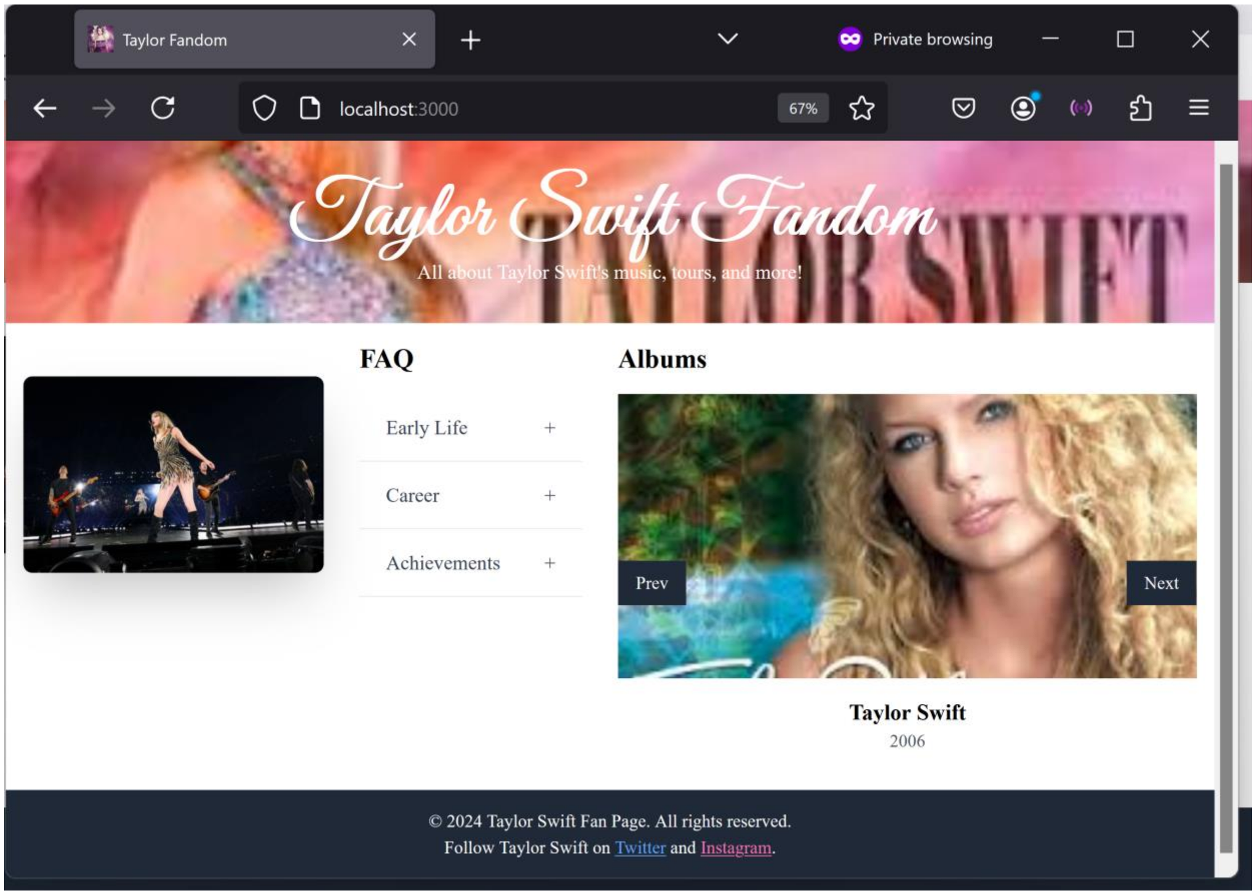
When you are finished re-creating this project, you should create your own React based interactive web app. You will choose your own topic, could be another artist, health, recreation, another course you are taking – up to you.

React is a UI library, based on a component architecture – everything should be a component. When components are designed to be reused, and are as flexible as possible in terms of where they are positioned and what they contain, we build ***performant code*** (code that can be reused and is robust enough to adapt to different requirements). So, where possible, make sure that you abstract and make each component as reuseable as suits the project and the wider scope.

You have likely used Bootstrap before. You can use Bootstrap with React, however here we use another CSS resource, ***Tailwind CSS***. This has become a very popular addendum to React. You should be aware that many institutions with React based web apps will have their own specific CSS rules and frameworks to be used with React.

In this case study, we use

- Tailwind CSS, at https://tailwindcss.com, branding motto is *Tailwind CSS - Rapidly build modern websites without ever leaving your HTML*.
- A React Carousel, built with a specific part of the React library
- An Accordion, buit with React
- A Tooltip, built with React


Taylor Fandom
Private browsing
localhost:3000
67%
Taylor Swift Fandom
All about Taylor Swift's music, tours, and more!
FAQ
Early Life +
Career +
Achievements +
Albums
Prev
Next
Taylor Swift
2006
© 2024 Taylor Swift Fan Page. All rights reserved.
Follow Taylor Swift on Twitter and Instagram.

Tailwind CSS is a resource that is often used to complement React with styling. It is similar to Bootstrap in terms of the application of classes.

Creating The Case Study Framework

The application needs to be bootstrapped with

- npx create-react-app taylorswift

After this, navigate into the project folder, with

- cd taylorswift

Open with VSCode,

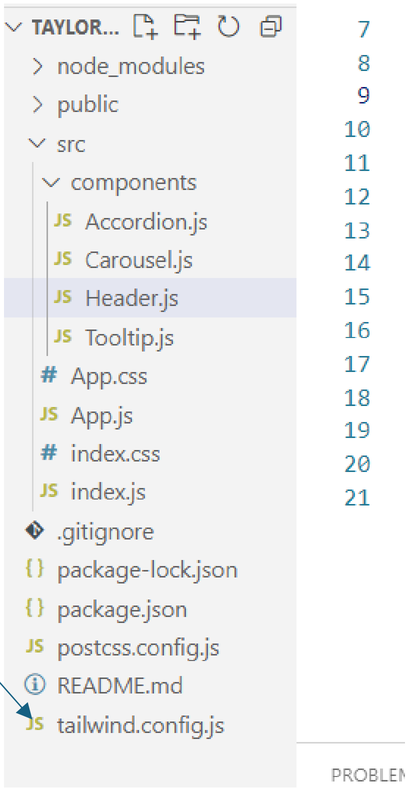
- code .

Now install tailwind CSS.

React Case Study, Interactive UI

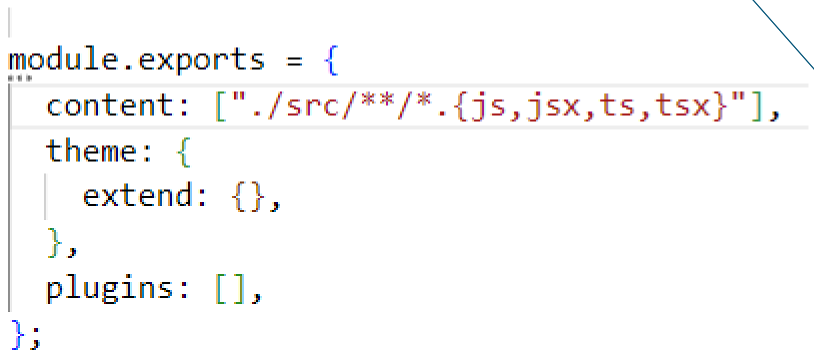
- npm install tailwindcss postcss autoprefixer
- npx tailwind init -p

After you do the tailwind install, a ***tailwind.config.js*** file is created



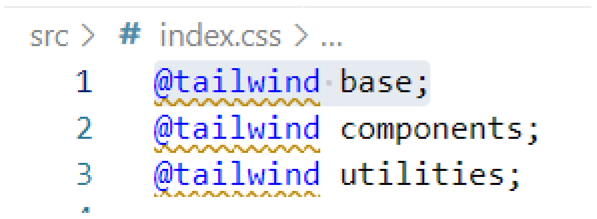
```
TAYLOR...
> node_modules
> public
v src
  v components
    JS Accordion.js
    JS Carousel.js
    JS Header.js
    JS Tooltip.js
  # App.css
  JS App.js
  # index.css
  JS index.js
.gitignore
{} package-lock.json
{} package.json
JS postcss.config.js
README.md
JS tailwind.config.js
```

Open this file and add the following,



```
module.exports = {
  content: ["./src/**/*.{js,jsx,ts,tsx}"],
  theme: {
    extend: {},
  },
  plugins: [],
};
```

In index.css, make sure to add the following at rules,



```
src > # index.css > ...
@tailwind base;
@tailwind components;
@tailwind utilities;
```

```
@tailwind base;
@tailwind components;
@tailwind utilities;

/* Custom styles */

footer a {
  text-decoration: underline;
}

@media (min-width: 640px) {
  .carousel img {
    height: 48rem; /* does this work for your images?? Check! */
  }
}
```

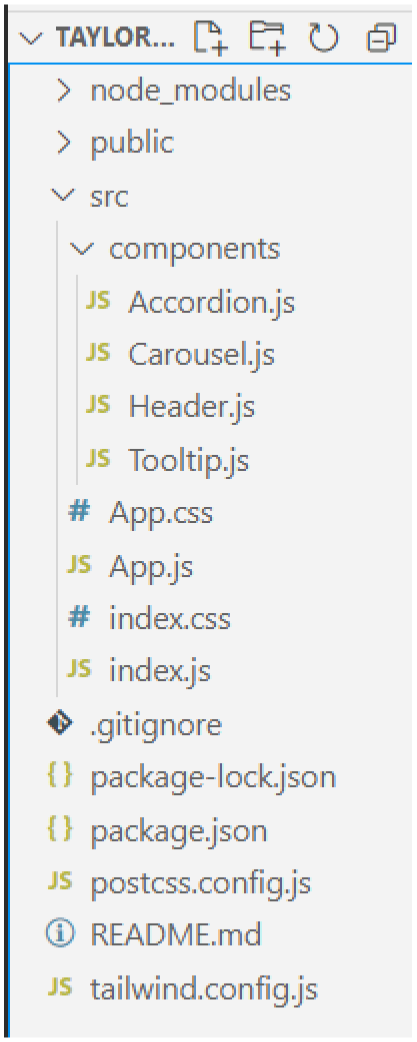
... and modify the media query as suits the application.

Finally, for this case study, install ***react-tooltip***, as we are using a specific part of the React library to create the Tooltip.

- ➢ npm Install react-tooltip

The Components

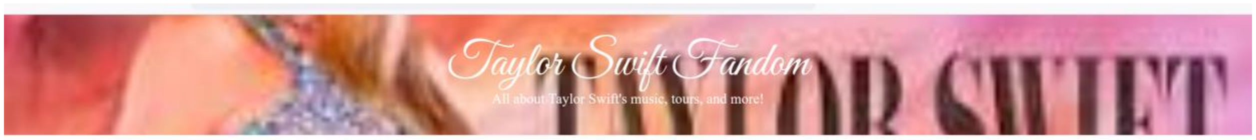
These should all be added to a components folder, within the src folder.

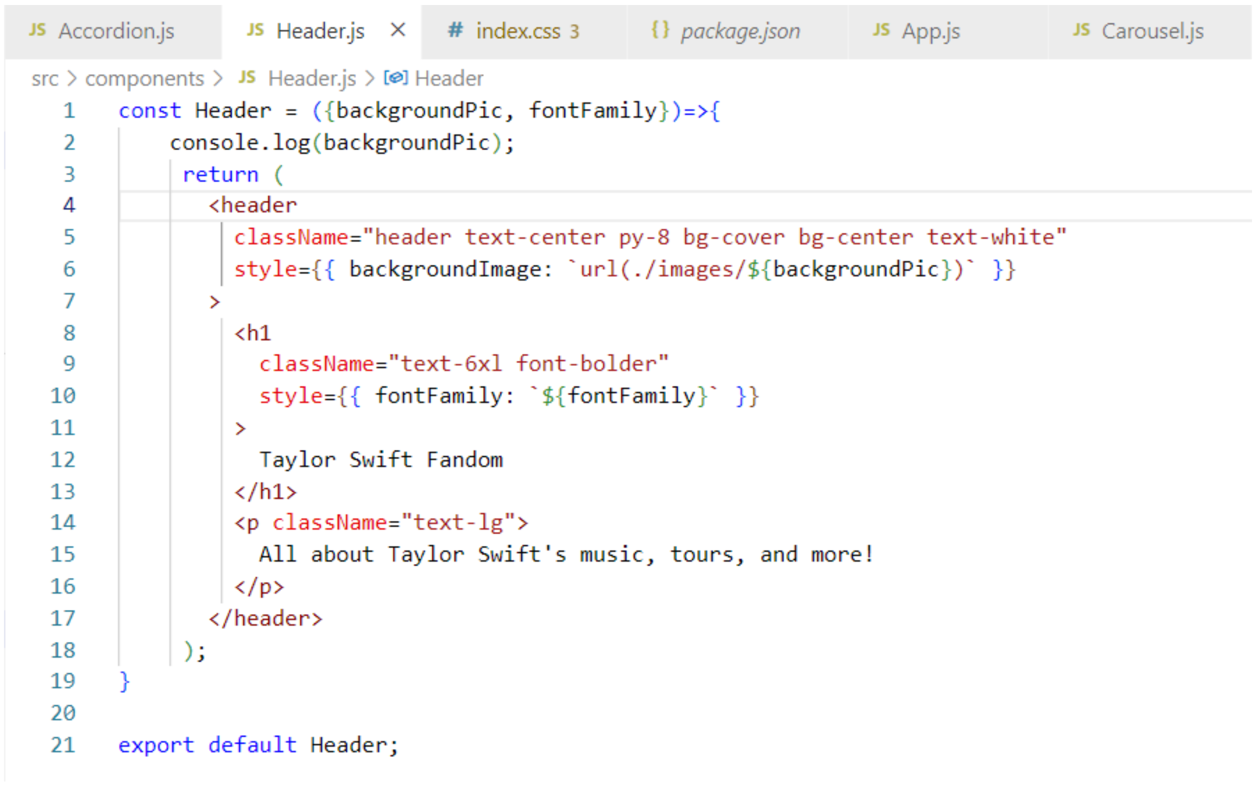


```
TAYLOR...
  node_modules
  public
  src
    components
      Accordion.js
      Carousel.js
      Header.js
      Tooltip.js
    App.css
    App.js
    index.css
    index.js
  .gitignore
  package-lock.json
  package.json
  postcss.config.js
  README.md
  tailwind.config.js
```

You will be adding: Header.js, Accordion.js, Carousel.js and Tooltip.js.

The Header Component, <Header .../>





```
const Header = ({backgroundPic, fontFamily})=>{
    console.log(backgroundPic);
     return (
       <header
         className="header text-center py-8 bg-cover bg-center text-white"
         style={{ backgroundImage: `url(./images/${backgroundPic})` }}
       >
         <h1
           className="text-6xl font-bolder"
           style={{ fontFamily: `${fontFamily}` }}
         >
           Taylor Swift Fandom
         </h1>
         <p className="text-lg">
           All about Taylor Swift's music, tours, and more!
         </p>
       </header>
     );
}

export default Header;
```

Notice how the Tailwind classes are applied to the markup within the JSX.

```
<header
  className="header text-center py-8 bg-cover bg-center text-white"
  style={{ backgroundImage: `url(./images/${backgroundPic})` }}
>
```

... and the background image and font are passed through props,

```
const Header = ({backgroundPic, fontFamily})=>{ ......
```

Here is the code that you can use for the header

```
import React from "react";

const Header = ({backgroundPic, fontFamily})=>{
   console.log(backgroundPic);
    return (
      <header
        className="header text-center py-8 bg-cover bg-center text-white"
        style={{ backgroundImage: `url(./images/${backgroundPic})` }}
      >
        <h1
          className="text-6xl font-bolder"
          style={{ fontFamily: `${fontFamily}` }}
        >
          Taylor Swift Fandom
        </h1>
        <p className="text-lg">
          All about Taylor Swift's music, tours, and more!
        </p>
      </header>
    );
}

export default Header;
```

Let's explore Tailwind CSS, just a little..

In Tailwind CSS, py-8 is a utility class that applies padding to the top and bottom (y-axis) of an element. The 8 refers to a spacing scale defined by Tailwind, where each unit corresponds to a specific value in rem (root em) units.

Specifically, py-8 applies 2rem of padding to both the top and bottom of the element. This is because, by default, Tailwind's spacing scale is based on multiples of 0.25rem. So, 8 * 0.25rem = 2rem.

Here's a quick breakdown:

- p stands for padding.
- y specifies the y-axis (top and bottom).
- 8 is the value from the spacing scale.

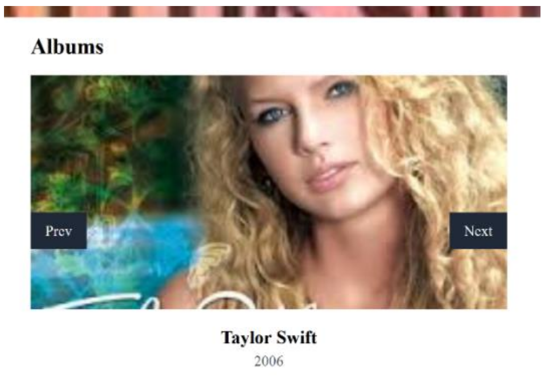
This is very similar to Bootstrap!

What do you think ***text-6xl*** impacts? You would be correct!

The Carousel Component, <Carousel .../>

Now create the Carousel component, and this should be passed the items for the carousel.

```
import React, { useState } from "react";
import "../App.css";

const Carousel = ({ items }) => {
  const [currentIndex, setCurrentIndex] = useState(0);

  const nextSlide = () => {
    setCurrentIndex((prevIndex) => (prevIndex + 1) % items.length);
  };

  const prevSlide = () => {
    setCurrentIndex(
      (prevIndex) => (prevIndex - 1 + items.length) % items.length
    );
  };

  return (
    <div className="relative w-full overflow-hidden">
      <div
        className="flex transition-transform duration-300"
        style={{ transform: `translateX(-${currentIndex * 100}%)` }}
      >
        {items.map((item, index) => (
          <div key={index} className="w-full flex-shrink-0">
            <img
              src={item.image}
              alt={item.title}
              className="w-full h-64 object-cover"
            />
            <div className="p-4 text-center">
              <h2 className="text-xl font-semibold">{item.title}</h2>
              <p className="text-gray-600">{item.description}</p>
            </div>
          </div>
        ))}
      </div>
      <button
        onClick={prevSlide}
        className="absolute top-1/2 left-0 transform -translate-y-1/2 bg-gray-800 text-white px-4 py-2"
      >
        Prev
      </button>
      <button
        onClick={nextSlide}
        className="absolute top-1/2 right-0 transform -translate-y-1/2 bg-gray-800 text-white px-4 py-2"
      >
        Next
      </button>
    </div>
  );
};

export default Carousel;
```

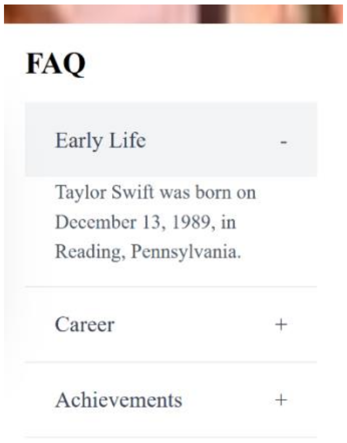


Can you guess what the Tailwind classes impact? In Tailwind CSS, the class ***relative*** is a utility class that sets the position property of an element to relative. This means the element is positioned relative to its normal position in the document flow. Now you can use the top, right, bottom, and left properties to adjust the element’s position relative to where it would normally be in the document flow.

Here is the code for the Carousel component.

```
import React, { useState } from "react";
import "../App.css";

const Carousel = ({ items }) => {
  const [currentIndex, setCurrentIndex] = useState(0);

  const nextSlide = () => {
    setCurrentIndex((prevIndex) => (prevIndex + 1) % items.length);
  };

  const prevSlide = () => {
    setCurrentIndex(
      (prevIndex) => (prevIndex - 1 + items.length) % items.length
    );
  };

  return (
    <div className="relative w-full overflow-hidden">
      <div
        className="flex transition-transform duration-300"
        style={{ transform: `translateX(-${currentIndex * 100}%)` }}
      >
        {items.map((item, index) => (
          <div key={index} className="w-full flex-shrink-0">
            <img
              src={item.image}
              alt={item.title}
              className="w-full h-64 object-cover"
            />
            <div className="p-4 text-center">
              <h2 className="text-xl font-semibold">{item.title}</h2>
              <p className="text-gray-600">{item.description}</p>
            </div>
          </div>
        ))}
      </div>
      <button
        onClick={prevSlide}
        className="absolute top-1/2 left-0 transform -translate-y-1/2 bg-gray-800 text-white px-4
py-2"
      >
        Prev
    </button>
    <button
     onClick={nextSlide}
     className="absolute top-1/2 right-0 transform -translate-y-1/2 bg-gray-800 text-white px-4
py-2"
    >
     Next
    </button>
   </div>
  );
};

export default Carousel;
```

Again, note that the carousel component is passed it’s content.



FAQ

Early Life -

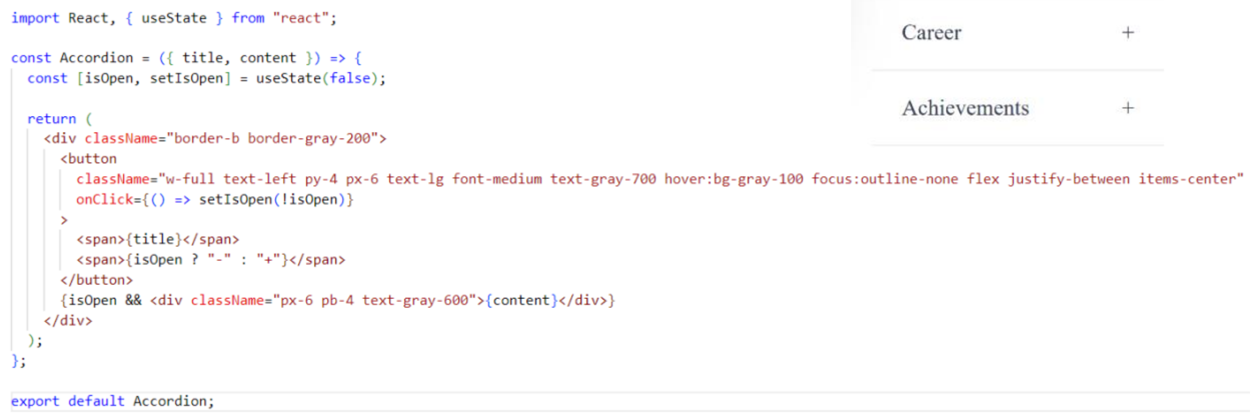
Taylor Swift was born on December 13, 1989, in Reading, Pennsylvania.

Career +

Achievements +

The Accordion Component, <Accordion …/>

The next component is the Accordion.



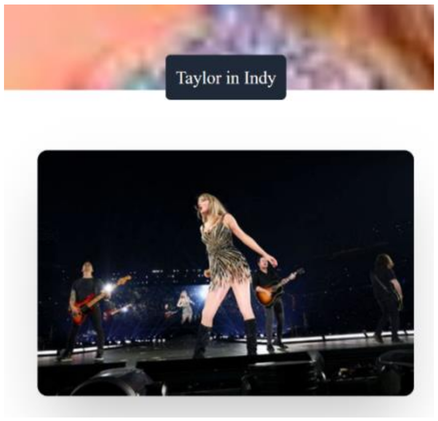
```
import React, { useState } from "react";

const Accordion = ({ title, content }) => {
  const [isOpen, setIsOpen] = useState(false);

  return (
    <div className="border-b border-gray-200">
      <button
        className="w-full text-left py-4 px-6 text-lg font-medium text-gray-700 hover:bg-gray-100 focus:outline-none flex justify-between items-center"
        onClick={() => setIsOpen(!isOpen)}
      >
        <span>{title}</span>
        <span>{isOpen ? "-" : "+"}</span>
      </button>
      {isOpen && <div className="px-6 pb-4 text-gray-600">{content}</div>}
    </div>
  );
};

export default Accordion;
```

Here, many classes are applied to the button. Can you guess how they impact the buttons?

Here is the code for the Accordion component.

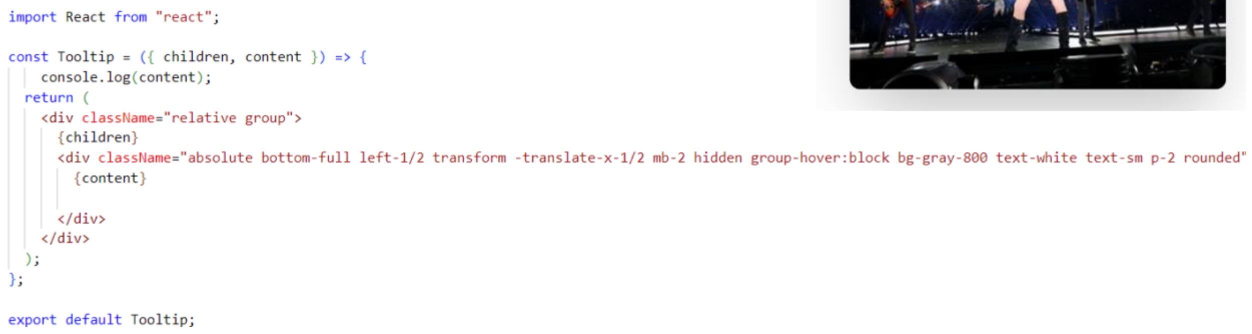
```
const Accordion = ({ title, content }) => {
 const [isOpen, setIsOpen] = useState(false);

 return (
  <div className="border-b border-gray-200">
```

```
    <button
      className="w-full text-left py-4 px-6 text-lg font-medium text-gray-700 hover:bg-gray-100
focus:outline-none flex justify-between items-center"
      onClick={() => setIsOpen(!isOpen)}
    >
      <span>{title}</span>
      <span>{isOpen ? "-" : "+"}</span>
    </button>
    {isOpen && <div className="px-6 pb-4 text-gray-600">{content}</div>}
   </div>
  );
};

export default Accordion;
```



The Tooltip Component, <Tooltip .../>

The last component we have included here is Tooltip.



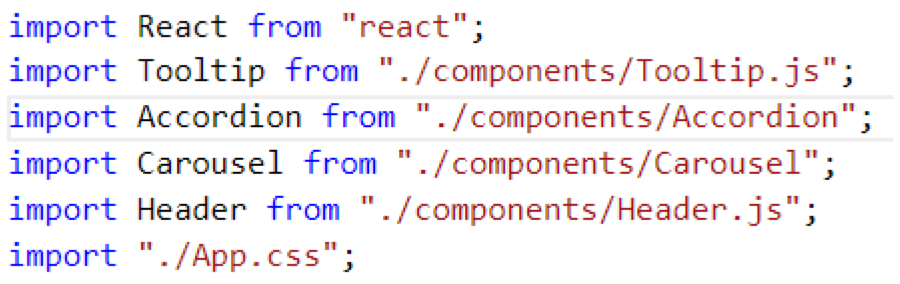
```
import React from "react";

const Tooltip = ({ children, content }) => {
    console.log(content);
  return (
    <div className="relative group">
      {children}
      <div className="absolute bottom-full left-1/2 transform -translate-x-1/2 mb-2 hidden group-hover:block bg-gray-800 text-white text-sm p-2 rounded"
        {content}

      </div>
    </div>
  );
};

export default Tooltip;
```

Again, a lot of Tailwind classes here.

```
import React from "react";

const Tooltip = ({ children, content }) => {
    console.log(content);
  return (
    <div className="relative group">
     {children}
     <div className="absolute bottom-full left-1/2 transform -translate-x-1/2 mb-2 hidden group-
hover:block bg-gray-800 text-white text-sm p-2 rounded">
       {content}
    </div>
  </div>
 );
};

export default Tooltip;
```

Now that you have defined the components, let’s use these components in App.js.

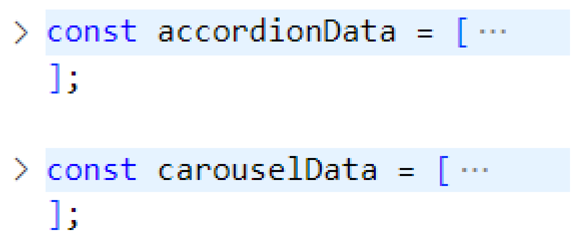
Begin by importing the components,



```
import React from "react";
import Tooltip from "./components/Tooltip.js";
import Accordion from "./components/Accordion";
import Carousel from "./components/Carousel";
import Header from "./components/Header.js";
import "./App.css";
```

```
import React from "react";
import Tooltip from "./components/Tooltip.js";
import Accordion from "./components/Accordion";
import Carousel from "./components/Carousel";
import Header from "./components/Header.js";
import "./App.css";
```

You can define the sample data, for convenience, in the App.js file.



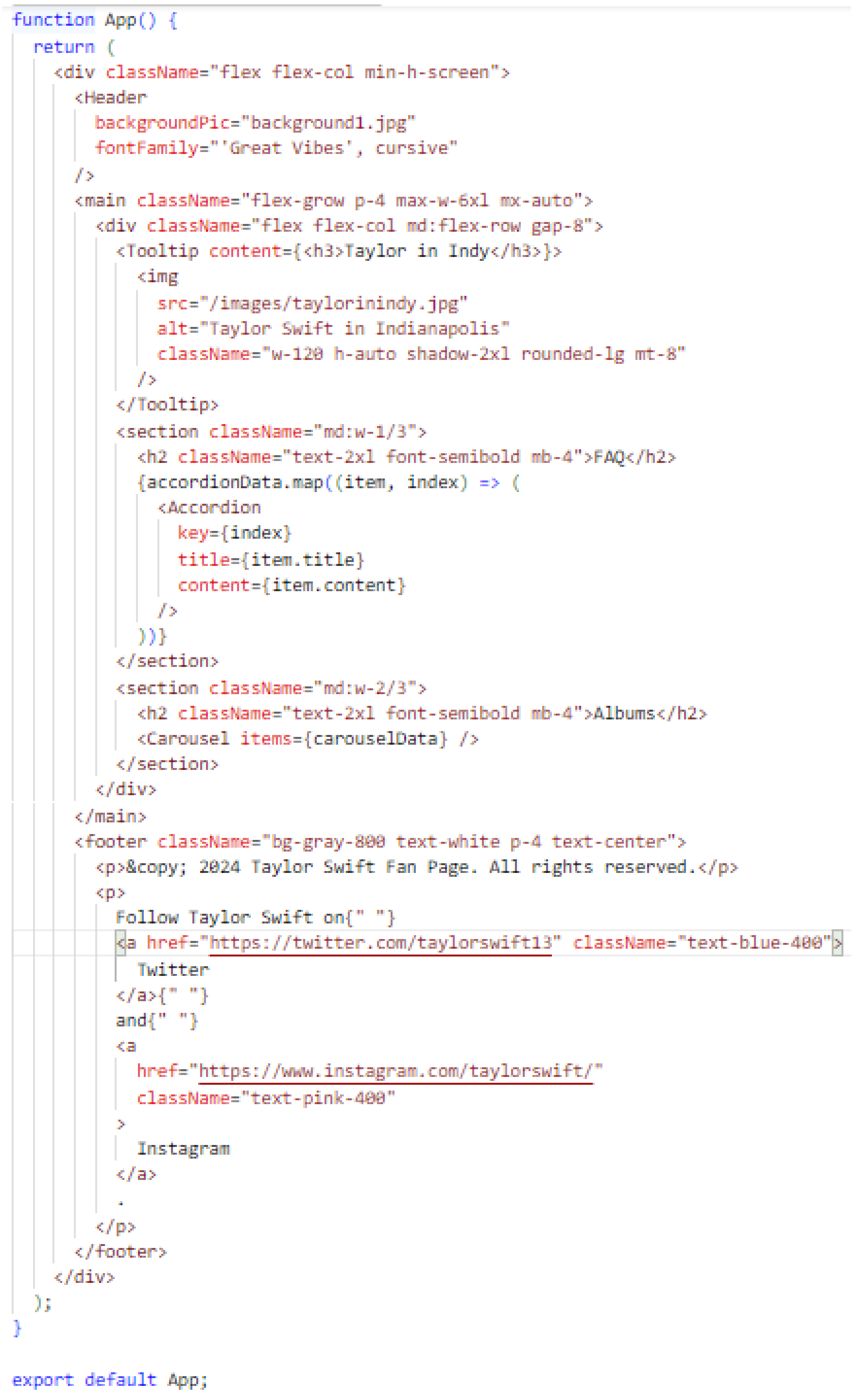
```
> const accordionData = [ ···
  ];

> const carouselData = [ ···
  ];
```

```
const accordionData = [
 {
   title: "Early Life",
   content:
```

```
const carouselData = [
 {
   image: "./images/taylorswift.jpg",
   title: "Taylor Swift",
   description: "2006",
      "Taylor Swift was born on December 13,
1989, in Reading, Pennsylvania.",
  },
  {
    title: "Career",
    content:
      "Taylor Swift is a singer-songwriter known for
her narrative songwriting.",
  },
  {
    title: "Achievements",
    content: "She has won numerous awards,
including 11 Grammy Awards.",
  },
];
```

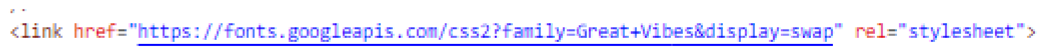
```
  },
  {
    image: "./images/fearless.jpg",
    title: "Fearless",
    description: "2008",
  },
  {
    image: "./images/speaknow.jpg",
    title: "Speak Now",
    description: "2010",
  },
  {
    image: "./images/red.jpg",
    title: "Red",
    description: "2012",
  },
  {
    image: "./images/1989.jpg",
    title: "1989",
    description: "2014",
  },
  {
    image: "./images/torturedpoets.jpg",
    title: "Tortured Poets",
    description: "2010",
  },
];
```

The App function incorporates all of the components,



```
function App() {
  return (
    <div className="flex flex-col min-h-screen">
      <Header
        backgroundPic="background1.jpg"
        fontFamily="'Great Vibes', cursive"
      />
      <main className="flex-grow p-4 max-w-6xl mx-auto">
        <div className="flex flex-col md:flex-row gap-8">
          <Tooltip content={<h3>Taylor in Indy</h3>}>
            <img
              src="/images/taylorinindy.jpg"
              alt="Taylor Swift in Indianapolis"
              className="w-120 h-auto shadow-2xl rounded-lg mt-8"
            />
          </Tooltip>
          <section className="md:w-1/3">
            <h2 className="text-2xl font-semibold mb-4">FAQ</h2>
            {accordionData.map((item, index) => (
              <Accordion
                key={index}
                title={item.title}
                content={item.content}
              />
            ))}
          </section>
          <section className="md:w-2/3">
            <h2 className="text-2xl font-semibold mb-4">Albums</h2>
            <Carousel items={carouselData} />
          </section>
        </div>
      </main>
      <footer className="bg-gray-800 text-white p-4 text-center">
        <p>&copy; 2024 Taylor Swift Fan Page. All rights reserved.</p>
        <p>
          Follow Taylor Swift on{" "}
          <a href="https://twitter.com/taylorswift13" className="text-blue-400">
            Twitter
          </a>{" "}
          and{" "}
          <a
            href="https://www.instagram.com/taylorswift/"
            className="text-pink-400"
          >
            Instagram
          </a>
          .
        </p>
      </footer>
    </div>
  );
}

export default App;
```

The ‘Great Vibes’ font comes from Google Fonts, which you can include,



```
<link href="https://fonts.googleapis.com/css2?family=Great+Vibes&display=swap" rel="stylesheet">
```

<link href="https://fonts.googleapis.com/css2?family=Great+Vibes&display=swap" rel="stylesheet">

```
function App() {
  return (
    <div className="flex flex-col min-h-screen">
      <Header
        backgroundPic="background1.jpg"
        fontFamily="'Great Vibes', cursive"
      />
      <main className="flex-grow p-4 max-w-6xl mx-auto">
        <div className="flex flex-col md:flex-row gap-8">
          <Tooltip content={<h3>Taylor in Indy</h3>}>
            <img
              src="/images/taylorinindy.jpg"
              alt="Taylor Swift in Indianapolis"
              className="w-120 h-auto shadow-2xl rounded-lg mt-8"
            />
          </Tooltip>
          <section className="md:w-1/3">
            <h2 className="text-2xl font-semibold mb-4">FAQ</h2>
            {accordionData.map((item, index) => (
              <Accordion
                key={index}
                title={item.title}
                content={item.content}
              />
            ))}
          </section>
          <section className="md:w-2/3">
            <h2 className="text-2xl font-semibold mb-4">Albums</h2>
            <Carousel items={carouselData} />
          </section>
        </div>
      </main>
      <footer className="bg-gray-800 text-white p-4 text-center">
        <p>&copy; 2024 Taylor Swift Fan Page. All rights reserved.</p>
        <p>
          Follow Taylor Swift on{" "}
          <a href="https://twitter.com/taylorswift13" className="text-blue-400">
            Twitter
          </a>{" "}
          and{" "}
          <a
            href="https://www.instagram.com/taylorswift/"
            className="text-pink-400"
          >
            Instagram
          </a>
        </p>
      </footer>
```

```
   </div>
  );
}

export default App;
```

Does the highlighted portion give an indication as to how responsiveness is implemented?

The footer is non-performant.

Now finish this – what did we say about performant code? Create a Footer component.