/ P Jamming

Jammming

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In this project, you will build a React web application called Language You will use your knowledge of React poperats passing state, and requests with the Spotify API to build a website that allows users to search the Spotify library, create a custom playlist, then save it to their Spotify account.

We've broken the Jammming project into 13 sections, called assessments. Each assessment contains a descriptive header with an introductory step, followed by a set of steps that guide you to the outcome. The first step of each assessment will exploy the assessment's goal and provide a brief overy we'll accomplish it. Before you start the second step, try to plan how you would complete the assessment. As you finish the rest of the steps, reflect on how your solution compares to ours.

Although the project may seem daunting, we'll be with you every step of the way. Whether you're completing assessments without the additional steps or banging your head against the wall trying to understand a hint, always use best practices and reflect on your growth.

Good luck!

Tasks
34/99 Complete
Mark the tasks as complete by checking them off
Create a React Application
1.

By the end of this assessment, you will be ready to start building your website. This section walks you through the process of setting up the directory structure and adding CSS presets.

To achieve this, you will create a boilerplate react app, remove unused files, and add **reset.css**, Google font links, and an updated favicon.

- Google fonts <u>Poppins</u> and <u>Work Sans</u>
- Updated <u>favicon</u>

2.

Create a new React application in a directory called **Jammming**.

Hint

Use create-react-app with the name of the folder you want to create.

3.

In **index.html**, update the <title> value to Jammming.

4.

Remove **App.test.js** and **logo.svg** from the **src/** folder, as you will not use them in this project.

5.

Add <u>reset.css</u> to the **public**/ directory and link to it in **index.html**.

6.

Link to the following Google fonts in **index.html**:

- Poppins
- Work Sans

Stuck? Get a hint

Link the Google fonts using the link> tag.

```
<link href="https://fonts.googleapis.com/css?family=Poppins:600" rel="stylesheet">
<link href="https://fonts.googleapis.com/css?family=Work+Sans:300,500" rel="stylesheet">
```

7.

Update **favicon.ico** with <u>this image</u>.

Create Static Components 8.

In this assessment, you will create a JavaScript file and a CSS file for each of six components in the Jammming app. In the steps below, we will link to the raw HTML and CSS to help you write the JSX for each component.

In the HTML, we use comments to indicate where the JSX for one component renders another component.

The HTML and CSS for each of the six components are listed below:

- $App \underline{HTML}$ and \underline{CSS}
- SearchBar <u>HTML</u> and <u>CSS</u>
- SearchResults <u>HTML</u> and <u>CSS</u>
- Playlist HTML and CSS
- TrackList HTML and CSS
- Track <u>HTML</u> and <u>CSS</u>

9.

Create a **src/Components** directory to hold the components.

10.

Create a directory called **App**/ in the **Components**/ directory.

Add **App.js** and **App.css** to the **App**/ folder and update the path in **index.js** accordingly.

Additionally add <u>this background image</u> to the directory as well — it is used by the CSS file.

11.

Inside of the App.js .render() method, add a return statement with JSX that renders this HTML.

Follow the guidelines below when you write the HTML (linked above) as JSX:

- Change all class attributes to className.
- Do not change the class values, as we will use them in a later step to add style.

12.

Use the comments in the HTML document from the last step to determine the components you need to import into **App.js**.

Note, you will create a folder for each component. The JavaScript file and CSS files for each component will live in the component's folder. The folder, JavaScript file, and CSS file will all have the same name.

The comments indicate you need to import the following three components:

- Playlist
- SearchBar
- SearchResults

13.

Add this CSS to the App.css file.

Import App.css into App.js.

14.

Create a **SearchBar**/ directory in the **Components**/ directory.

Inside of **SearchBar**, add **SearchBar.js** and **SearchBar.css**.

15.

Inside of **SearchBar.js** create a component called SearchBar with a .render() method that returns this HTML.

Follow the guidelines below when you write the HTML (linked above) as JSX:

- Change all class attributes to className.
- Do not change the class values, as we will use them in a later step to add style.

Use the comments in the HTML document to determine if you need to import any components.

Export the SearchBar component.

Stuck? Get a hint

Follow these steps to create the SearchBar component:

- Import React
- Create a SearchBar class that extends React.Component
- Create a render method that returns the HTML linked above
- You do not need to import any other components
- Export SearchBar

16.

Add this CSS to the SearchBar.css file.

Import SearchBar.css into SearchBar.js.

17

Create a **SearchResults**/ directory in the **Components**/ directory.

Inside of SearchResults/, add SearchResults.js and SearchResults.css.

18

Inside of **SearchResults.js** create a component called SearchResults with a <code>.render()</code> method that returns $\underline{this\ HTML}$.

Follow the guidelines below when you write the HTML (linked above) as JSX:

• Change all class attributes to className.

• Do not change the class values, as we will use them in a later step to add style.

Use the comments in the HTML document to determine if you need to import any components.

Export the SearchResults component.

Stuck? Get a hint

Follow these steps to create the SearchResults component:

- Import React
- Create a SearchResults class that extends React.Component
- Create a render method that returns the HTML linked above
- Import TrackList
- Export SearchResults

19.

Add this CSS to the SearchResults.css file.

Import SearchResults.css into SearchResults.js.

20.

Create a **Playlist**/ directory in the **Components**/ directory.

Inside of Playlist/, add Playlist.js and Playlist.css.

21.

Inside of **Playlist.js** create a component called Playlist with a .render() method that returns this HTML.

Follow the guidelines below when you write the HTML (linked above) as JSX:

- Change all class attributes to className.
- Do not change the class values, as we will use them in a later step to add style.
- Change the value property to defaultValue and set it equal to {'New Playlist'}
- Comment out <TrackList /> since it doesn't work without any props.

Use the comments in the HTML document to determine if you need to import any components.

Export the Playlist component.

Stuck? Get a hint

Follow these steps to create the Playlist component:

- Import React
- Create a Playlist class that extends React.Component
- Create a render method that returns the HTML linked above
- Import TrackList
- Export Playlist

22.

Add this CSS to the Playlist.css file.

 $Import \ \textbf{Playlist.css} \ into \ \textbf{Playlist.js}.$

23.

Create a **TrackList**/ directory in the **Components**/ directory.

Inside of **TrackList/**, add **TrackList.js** and **TrackList.css**.

24

Inside of **TrackList.js** create a component called **TrackList** with a .render() method that returns this HTML.

Follow the guidelines below when you write the HTML (linked above) as JSX:

- · Change all class attributes to className.
- Do not modify the class values, as we will use them in a later step to add style.
- For now, you will hard code three tracks. In a later assessment, we will replace the hardcoded values with tracks from Spotify.

Use the comments in the HTML document to determine if you need to import any components.

Export the TrackList component.

Stuck? Get a hint

Follow these steps to create the TrackList component:

- Import React
- Create a TrackList class that extends
 React.Component
- Create a render method that returns the HTML linked above
- Import Track
- Export TrackList

25.

Add this CSS to the TrackList.css file.

Import TrackList.css into TrackList.js.

26.

Create a **Track**/ directory in the **Components**/ directory.

Inside of Track/, add Track.js and Track.css.

27.

Inside of **Track.js** create a component called **Track** with a .render() method that returns this HTML.

Follow the guidelines below when you write the HTML (linked above) as JSX:

- Change all class attributes to className.
- Do not change the class values, as we will use them in a later step to add style.
- Create a method called renderAction that displays a – anchor tag if the isRemoval property is true, and a + anchor tag if the isRemoval property is false. Set the class name to Track-action.

Use the comments in the HTML document to determine if you need to import any components.

Export the Track component.

Stuck? Get a hint

Follow these steps to create the Track component:

• Import React

- Create a Track class that extends React.Component
- Create a render method that returns the HTML linked above
- You do not need to import any other components
- Export Track

28.

Add this CSS to the Track.css file.

Import Track.css into Track.js.

Pass Down Search Result and Render Result List 29.

In this assessment, you will pass the state of a search results parameter through a series of components to render an array of tracks.

When a user requests data from Spotify, the JSON response will include a set of song tracks. Each track will contain a field for name, artist, and album. For each track in the results list, your Jammming web app will display the song name, artist, and album.

In a later assessment, you will build a method that sets the state of the search results parameter to a response from the Spotify API.

30.

Add a constructor function to the App component, and pull in props from the React.Component class.

Stuck? Get a hint

Inside of the App component in **App.js**, create a constructor method.

Pass props to the constructor function and use super() to call the parent constructor.

31.

Inside of the App component, set a hard-coded initial value for this.state.searchResults.

Stuck? Get a hint

Inside of the App constructor, set this.state to an object with a property called searchResults set to an array of objects, each containing name, artist, and album properties.

32.

Pass the state of the App component's searchResults to the SearchResults component.

Stuck? Get a hint

Pass this.state.searchResults to the SearchResults component as an attribute called searchResults.

33.

Pass the search results from the SearchResults component to the TrackList component.

Stuck? Get a hint

Inside the **SearchResults.js** .render() method, pass this.props.searchResults as an attribute called tracks in the TrackList component.

In the TrackList component, use the .map() method to render each track in the tracks property.

Set the key attribute to track.id.

Stuck? Get a hint

Inside the TrackList component's render method, use .map() on this.props.tracks to render each track in the list.

This will require you to pass the current track as an attribute called track to the Track component.

35

Render the track name, artist, and album.

Stuck? Get a hint

Use the following property calls to access the track's name, artist, and album:

- this.props.track.name
- this.props.track.artist
- this.props.track.album

Pass down Playlist to TrackList

In this assessment, you will pass the state of a user's custom playlist title and tracks from the App component down to components that render them.

When a user adds songs from the search results list to their playlist, a method will update the state of a playlist parameter in **App.js**, and Jammming will render the song in the user's playlist.

In a later assessment, you will write methods that add and remove songs from the playlist. You will also write a method that updates the playlist's title.

37.

Add hard-coded values for playlistName and playlistTracks to state in **App.js**.

Stuck? Get a hint

You can set playlistName to any string.

The playlistTracks value should be an array of objects, each containing name, artist, and album properties.

38.

Pass the playlist name and tracks from the App component to the Playlist component.

Stuck? Get a hint

Inside the **App.js** .render() method, pass this.state.playlistName and this.state.playlistTracks as attributes called playlistName and playlistTracks in the Playlist component.

39.

Pass the playlist tracks from the Playlist component to the TrackList component.

Stuck? Get a hint

Inside the **Playlist.js** .render() method, pass this.props.playlistTracks as an attribute called tracks in the TrackList component.

Add Tracks to a Playlist 40.

In this assessment, you will implement a process for adding a song from the search results track list to the user's custom playlist.

You will add a method to App.js called addTrack that adds a song to the playlist state. The application passes the method through a series of components to Track. The user can trigger the .addTrack() method by clicking the + sign from the search results list.

41.

In **App.js** create a method called addTrack with the following functionality:

- Accepts a track argument
- Use the track's id property to check if the current song is in the playlistTracks state.
- If the id is new, add the song to the end of the playlist.
- Set the new state of the playlist

42.

Bind the current value of this to .addTrack().

Pass .addTrack() to the SearchResults component as an onAdd attribute.

43

Pass onAdd from the SearchResults component to the TrackList component.

Stuck? Get a hint

Inside the **SearchResults.js** .render() method, pass this.props.onAdd as an attribute called onAdd to the TrackList component.

44.

Pass onAdd from the ${\tt TrackList}$ component to the ${\tt Track}$ component.

Stuck? Get a hint

Inside the **TrackList.js** .render() method, pass this.props.onAdd as an attribute called onAdd to the Track component.

45.

Create an .addTrack() method in the Track component. Use it to add this.props.track to the playlist.

Stuck? Get a hint

Pass this.props.track to this.props.onAdd.

46

Add a constructor to the Track component. Call super(props) in the constructor method.

Bind this.addTrack() to the current value of this in the constructor method.

17

In the **Track.js** + element, add an onclick property with the value set to this.addTrack.

Remove Tracks from a Playlist 48.

In this assessment, you will implement a process that removes a song from a user's custom playlist when the user selects the – sign inside of a rendered track.

49.

In **App.js** create a method called removeTrack with the following functionality:

- · Accepts a track argument
- Uses the track's id property to filter it out of playlistTracks
- · Sets the new state of the playlist

50.

In the App constructor method, bind the current value of this to .removeTrack().

Pass .removeTrack() to the Playlist component as an onRemove attribute.

51.

Pass on Remove from the Playlist component to the ${\tt TrackList}$ component.

Stuck? Get a hint

Inside the **Playlist.js** .render() method, pass this.props.onRemove as an attribute called onRemove in the TrackList component.

52.

Pass onRemove from the ${\tt TrackList}$ component to the ${\tt Track}$ component.

Stuck? Get a hint

Inside the **TrackList.js** .render() method, pass this.props.onRemove as an attribute called onRemove in the Track component.

53.

Create a .removeTrack() method in the Track component. Use it to remove this.props.track from the playlist.

Stuck? Get a hint

Pass this.props.track to this.props.on Remove.

54.

In **Track.js**, bind this.removeTrack() to the current value of this in the constructor method.

55.

In the **Track.js** - element, add an onclick property with the value set to the this.removeTrack method.

Change the Name of a Playlist 56.

In this assessment, you will implement code that allows a learner to change the name of their playlist, and save the updated value to the App component's state.

57.

In **App.js** create a method called updatePlaylistName with the following functionality:

· Accepts a name argument

• Sets the state of the playlist name to the input argument

58.

In the App constructor method, bind this to .updatePlaylistName().

Pass updatePlaylistName to the Playlist component as an attribute named onNameChange.

In the Playlist component, create a method called handleNameChange.

The method should accept an event that is triggered by an onChange attribute in the Playlist component's <input> element.

Inside the method, call .onNameChange() with the event target's value (from the <input> element).

Add a constructor to the Playlist component. Call super(props) in the constructor method.

Bind the current value of this to .onNameChange().

In the Playlist render method, pass .handleNameChange() to an onChange property.

Create a Method that Saves the Playlist to a User's Account

62.

In this assessment, you will create a method that will save a user's playlist to their Spotify account and resets the state of the playlist name and tracks array.

To accomplish the goal of this assessment, you will need to access a track property named uri. Spotify uses this field to reference tracks in the Spotify library. You will create an array containing the uri of each track in the playlistTracks property.

In a later assessment, you will pass the playlist name and the array of uris to a Spotify-linked method that writes the tracks in playlistTracks to a user's account.

63.

In App.js create a method called savePlaylist with the following functionality:

- Generates an array of uri values called trackURIs from the playlistTracks property.
- In a later step, you will pass the trackURIs array and playlistName to a method that will save the user's playlist to their account.

64.

Bind the current value of this to .savePlaylist().

Pass savePlaylist to the Playlist component as an attribute called onsave.

65.

In the Playlist.js SAVE TO SPOTIFY element, add an onClick property with the value set to this.props.onSave.

Hook up Search Bar to Spotify Search

In this assessment, you will create a method that updates the searchResults parameter in the App component with a user's search results. You will write the logic that allows a user to enter a search parameter, receives a response from the Spotify API, and updates the searchResults state with the results from a Spotify request.

In a later assessment, you will hook the .search() method up to the Spotify API.

67.

In **App.js** create a method called search with the following functionality:

- Accepts a search term
- · Logs the term to the console

In a later assessment, we will hook this method up to the Spotify API.

68.

In the App constructor method, bind this to .search(). In a later assessment, we will use this in .search().

Pass .search() to the SearchBar component as an onSearch attribute.

69.

In **SearchBar.js**, create a method called search that passes the state of the term to this.props.onSearch.

70.

In the SearchBar component, create a contstructor method with a call to super(props).

Inside of the constructor, bind the current value of this to .search().

71.

In **SearchBar.js** create a method called handleTermChange with the following functionality:

- Accepts an event argument
- Sets the state of the search bar's term to the event target's value.

72.

In the **SearchBar.js** constructor method, bind the current value of this to this.handleTermChange.

73.

In the search bar's <input> element, add an onChange attribute and set it equal to this.handleTermChange.

Obtain a Spotify Access Token 74

In the next few assessments, you will write three methods that accomplish the following:

- Get a Spotify user's access token
- · Send a search request to the Spotify API
- Save a user's playlist to their Spotify account.

Before you begin, you will need to create an empty JavaScript module called spotify located in src/util/Spotify.js.

In this assessment, you will register a Spotify application and create a method called getAccessToken in the Spotify module. The method will get a user's access token so that they can make requests to the Spotify API.

Use the <u>Spotify Applications Registration Flow</u> and <u>Spotify Authentication guide</u> to help you write the method.

75.

Create a **src/util** directory and add a file called **Spotify.js**

76.

In **Spotify.js** create a spotify module as an empty object.

At the bottom of **Spotify.js** export Spotify.

77.

Above the empty object, declare an empty variable that will hold the user's access token.

78.

Inside the Spotify module, create a method called getAccessToken.

Check if the user's access token is already set. If it is, return the value saved to access token.

79.

If the access token is not already set, check the URL to see if it has just been obtained.

You will be using the <u>Implicit Grant Flow</u> to setup a user's account and make requests. The implicit grant flow returns a user's access token in the URL.

Use the guide to determine how to parse the URL and set values for your access token and expiration time.

Look at the hint if you help parsing the URL.

Stuck? Get a hint

In the implicit grant flow, values for the access token and expiration time are in the URL parameter after authentication.

Use window.location.href and the .match() method to retrieve the access token and expiration time from the URL.

Example URL from Spotify API:

Use the ${\tt .match()}$ method on the URL string. Provide the regular expressions below as inputs:

```
/access_token=([^&]*)/
/expires_in=([^&]*)/
```

80.

If the access token and expiration time are in the URL, implement the following steps:

- Set the access token value
- · Set a variable for expiration time
- Set the access token to expire at the value for expiration time

 Clear the parameters from the URL, so the app doesn't try grabbing the access token after it has expired

The hint below contains the code that wipes the access token and URL parameters.

Stuck? Get a hint

Use the following code to help you wipe the access token and URL parameters

```
window.setTimeout(() => accessToken = '', expiresIn * 1000);
window.history.pushState('Access Token', null, '/');
```

81.

The third condition is that the access token variable is empty and is not in the URL.

Before you write this conditional code block, you need to register your application using the <u>Spotify application registration flow</u>.

Give your application a relevant name and description. Also, add the following Redirect URI:

http://localhost:3000/

82.

At the top of **Spotify.js** create constant variables for your application's client ID and redirect URI.

Set the client ID variable to the value provided on your application page.

Set the redirect URI to "http://localhost:3000/".

83.

Back in your conditional statement, redirect users to the following URL:

 $\verb|https://accounts.spotify.com/authorize?client_id=CLIENT_ID&response_type=token&scope=playlist-modify-public&redirect_uri=REDIRECT_URI$

Interpolate your client ID and redirect URI variables In place of CLIENT_ID and REDIRECT_URI.

Stuck? Get a hint

To redirect a user, you must set window.location to the URL in the task above.

Implement Spotify Search Request 84

In this assessment, you will create a method in **Spotify.js** that accepts a search term input, passes the search term value to a Spotify request, then returns the response as a list of tracks in JSON format.

You will need the user's access token to make requests to the Spotify API. You will use the request parameters in step four of the implicit grant flow to make requests. In the following steps, we will use fetch() to make our requests, but any method will work.

You should use the /v1/search?type=TRACK endpoint when making your request. Use the <u>Spofity Web API Endpoint Reference</u> to help format your request.

In the Spotify object, add a method called search that accepts a parameter for the user's search term.

.search() returns a promise that will eventually resolve to the list of tracks from the search.

86.

Inside .search(), start the promise chain by returning a GET request (using fetch()) to the following Spotify endpoint:

https://api.spotify.com/v1/search?type=track&q=TERM

Replace the value of TERM with the value saved to the search term argument.

Add an Authorization header to the request containing the access token.

Stuck? Get a hint

You will need to pass a second argument to the fetch method. The second argument is an object with one field called headers. Set headers to an object with one Authorization property with the user's access token. Use the format in step four of the implicit grant flow.

Pass the following object as the second fetch parameter:

```
{
  headers: {Authorization: `Bearer ${accessToken}`}
}
```

87.

Convert the returned response to JSON.

Then, map the converted JSON to an array of tracks. If the JSON does not contain any tracks, return an empty array.

The mapped array should contain a list of track objects with the following properties:

- ullet ID returned as track.id
- Name returned as track.name
- Artist returned as track.artists[0].name
- Album returned as track.album.name
- URI returned as track.uri

88.

In **App.js**, import Spotify and update the .search() method with the Spotify.search() method.

Update the state of searchResults with the value resolved from Spotify.search()'s promise.

Save a User's Playlist

In this assessment, you will create a method called savePlaylist that writes the learner's custom playlist in Jammming to their Spotify account.

The .savePlaylist() method accepts a playlist name and an array of track URIs. It makes the following three requests to the Spotify API:

- GET current user's ID
- POST a new playlist with the input name to the current user's Spotify account. Receive the playlist ID back from the request.

• POST the track URIs to the newly-created playlist, referencing the current user's account (ID) and the new playlist (ID)

You will update the .savePlaylist() method in **App.js** to use the new Spotify.savePlaylist() method.

90.

Create a method in **Spotify.js** that accepts two arguments. The first argument is the name of the playlist. The second is an array of track URIs.

Inside the function, check if there are values saved to the method's two arguments. If not, return.

91.

Create three default variables:

- An access token variable, set to the current user's access token
- A headers variable, set to an object with an Authorization parameter containing the user's access token in the <u>implicit grant flow request</u> <u>format</u>
- An empty variable for the user's ID

92.

Make a request that returns the user's Spotify username.

Convert the response to JSON and save the response id parameter to the user's ID variable.

Stuck? Get a hint

Make the request to the following Spotify endpoint:

https://api.spotify.com/v1/me

You must pass a second argument with an object containing the headers object. See below

{headers: headers}

93.

Use the returned user ID to make a POST request that creates a new playlist in the user's account and returns a playlist ID.

Use the <u>Spotify playlist endpoints</u> to find a request that creates a new playlist.

Set the playlist name to the value passed into the method.

Convert the response to JSON and save the response id parameter to a variable called playlistID.

Stuck? Get a hint

Make a request to the following Spotify endpoint:

/v1/users/{user_id}/playlists

You must pass a second argument that contains an object with parameters for headers, method, and body.

94.

Use the returned user ID to make a POST request that creates a new playlist in the user's account and

returns a playlist ID.

Use the <u>Spotify playlist endpoints</u> to find a request that adds tracks to a playlist.

Set the URIs parameter to an array of track URIs passed into the method.

Convert the response to JSON and save the response id parameter to a variable called playlistID.

Stuck? Get a hint

Make a request to the following Spotify endpoint:

/v1/users/{user_id}/playlists/{playlist_id}/tracks

You must pass a second argument that contains an object with parameters for headers, method, and body.

95.

In **App.js** update the .savePlaylist() method to call Spotify.savePlaylist().

After you call Spotify.savePlaylist(), reset the state of playlistName to 'New Playlist' and searchResults to an empty array.

Deploy (Optional) 96.

In this assessment, you will use <u>surge</u> to deploy your Jammming project.

You will start by installing surge globally.

In your console, run npm install --global surge.

97.

Before you deploy, you need to think of a domain name with the following format:

SOME_NAME.surge.sh

SOME NAME can be replaced with anything you like.

Next, you need to replace or add this URI to two locations in your project.

- In *Spotify.js, set redirectUri to your new domain
- In your <u>Spotify application</u>, add your new domain as a redirect URI

98.

Back in the command line, from the Jammming project's root directory, run:

\$ npm run build

99.

ed into the build directory and run the command

\$ surge

Follow the steps on the screen. Change the domain value to your new URI.

Congrats! You've just deployed a React App that queries the Spotify API!

Report a Bug

If you see a bug or any other issue with this page, please report it <u>here</u> .				

Objective Tasks 34/99 Complete Report a Bug Objective Tasks 34/99 Complete Report a Bug