Jerry Low

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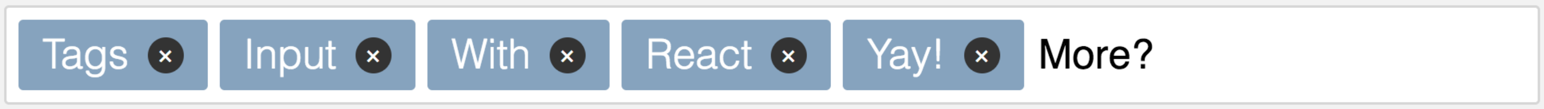
Build a Tags Input React Component from Scratch

Jerry Low Feb 23, 2019 · 6 min read



A walkthrough to build a simple tags input component in React – there's probably a thousand of these tutorial on the internet already but I had to do one of these recently for… something so you will benefit/suffer with one more of these on the web.

Link to final solution: https://codepen.io/jerrylow/pen/mvZZpp

Edit: I've moved the `<input>` into the list of tags to ensure that the input always stays inline with the list of tags when possible. Some of the screenshot might not reflect this.

Edit 2: Since React 16 Hooks has been more widely use and writing reusable code a lot easier. Here's this tutorial written as a **function component** https://codepen.io/jerrylow/pen/RwWbgPx. I won't break it down line by line since most of the code and logic is still the same. I've commented on where the state hook is used.

Getting Started

I'm not going to start from setting up your local, creating a React app and all that I assume that you've setup React before and we're going to start with the component. For the purpose of this example I'm going to render the component directly in ReactDOM:

```jsx
ReactDOM.render(
  <InputTag />,
  document.getElementById('content')
);
```

tags-input--snippet-1.jsx hosted with ❤ by GitHub view raw

What I have setup is on a single file:

```jsx
class InputTag extends React.Component {
  render() {
    return (
      <div className="input-tag" />
    )
  }
}
ReactDOM.render(
  <InputTag />,
  document.getElementById('content')
);
```

tags-input--snippet-2.jsx hosted with ❤ by GitHub view raw

Ideally you'll have `InputTag` in it's own component file and it'll get imported into a part of your application:

Setting Up the DOM

When I start writing a component I usually structure the DOM first since I have a general idea of where elements will be. Create a rough structure and add all of the placeholder content in too so that you can see things are structurally working.

Removing the comments and placing them in the component:

Now there's two things you can do at this point:

1. Style the component to look better or,
2. Add functionality to make things work.

I am a visual person and I usually like to tackle easier tasks first so at this point I would usually style the component, but I know the added functionality could impact the styles; thus, most developers would flush out most of the functionality first — for the sake of this article I will take this route — also because I won't actually cover the styles in this article.

Make the Input Field Work

The first logical functionality to tackle is to add tags from the input field. We will store tags in the component's state so we'll setup the default tag state (an empty array) in the constructor.

This will go in the top of your component:

If you're not familiar with component state check this out https://reactjs.org/docs/faq-state.html

To add tags I'm going to listen for when the user hits `Enter` when they're focused on the input field. To do so we can use either add `onKeyUp` or `onKeyDown` to the field. I'll use `onKeyDown`.

Now I'm calling for a function call `inputKeyDown` that at this point we haven't written yet — let's get to work.

Line by Line Breakdown

```
inputKeyDown = (e) => {
```

Create a function called `inputKeyDown` using the arrow function so it lexically binds this to the function. We only need to do this to access `this` so you don't necessarily need to create all your function as an arrow function. From `onKeyDown` it will pass the event as the first argument to our function which I've just named `e`.

```
const val = e.target.value;
```

I’m assigning the input value to `val`.

```
if (e.key === 'Enter' && val) {
```

Check if the keystroke the user hit was indeed Enter and only add the tag if the user actually inputted a value in the field.

```
this.setState({ tags: [...this.state.tags, val]});
```

Add the value to the component’s state `tags` with `this.setState()`. What I’m doing here is assigning tags with a value of `[...this.state.tags, val]`, this is an array `[]` first spreading the current list of tags that’s already in state `...this.state.tags` then adding the new val at the end. If we had simply assigned tags’ value like `{ tags: val }` we would’ve overwritten all the tags with just a single value.

Check That It’s Working

At this point there’s no output of the tags so you can test that the functionality is working by `console.log` outputting `this.state.tags` or you can use React Devtools to monitor your props and state (recommended).

The component state updating on the bottom right.

Clearing the Input Field

As you see from above, after adding a tag the value remains in the field, which is not ideal. To clear the field we need to set the input's value to `null`. In order to do this we need to be able to reference the input field, we can do this by referencing the DOM. On the input field we add `ref={c => { this.tagInput = c}}`. I'm naming this input as `tagInput`.

Now we can clear the value after it's added to state.

Input field is cleared after a tag is added.

Displaying the Tags

Before we add the functionality to remove tags we should display the tags. We can now replace the placeholder `<li>` tag with real tags. To do this we'll use `.map` to loop through the tags and output them:

Each tag is looped as `tag`. I'm also adding the index (`i`) that'll be used later. Note I'm using the tag as the key for now. If you don't know why you need keys read this, it's partly what makes React awesome — don't use the index as the key. Now keys need to be unique and using the tag as the key could cause duplication error, but this is good since we also don't need/want duplicated tags — we can restrict that. We'll add a check before tags are pushed into state.

Now test again and the tags should be outputted:

Removing Tags

The functionality left is to remove tags. We'll create a function that remove the tags.

Line By Line Breakdown

```
removeTag = (i) => {
```

I won't talk about the arrow function because we did that last time. What I'm going to use to indicate which tag to remove is the index. If you do any sorting or re-ordering of you tags this won't work but for my example it will :P

```
const newTags = [ ...this.state.tags ];
```

We don't want to directly mutate component state so what we do is create a new array spreading the current tags so we can remove tags. Note: this is not the same as setting `const newTags = this.state.tags`.

```
newTags.splice(i, 1);
```

Now we remove the tag from the array.

```
this.setState({ tags: newTags });
```

Store the new list of tags back into state.

Call the Remove Function

Now we can use the function by adding `onClick` to the remove button(s).

Add some tags, click remove and check that they're working.

Adding Backspace Remove

Another method to remove tags is to have the ability to press backspace when the user is focused on the input and there's no value to remove the last tag. We can easily achieve this by adding an else if condition in `inputKeyDown`.

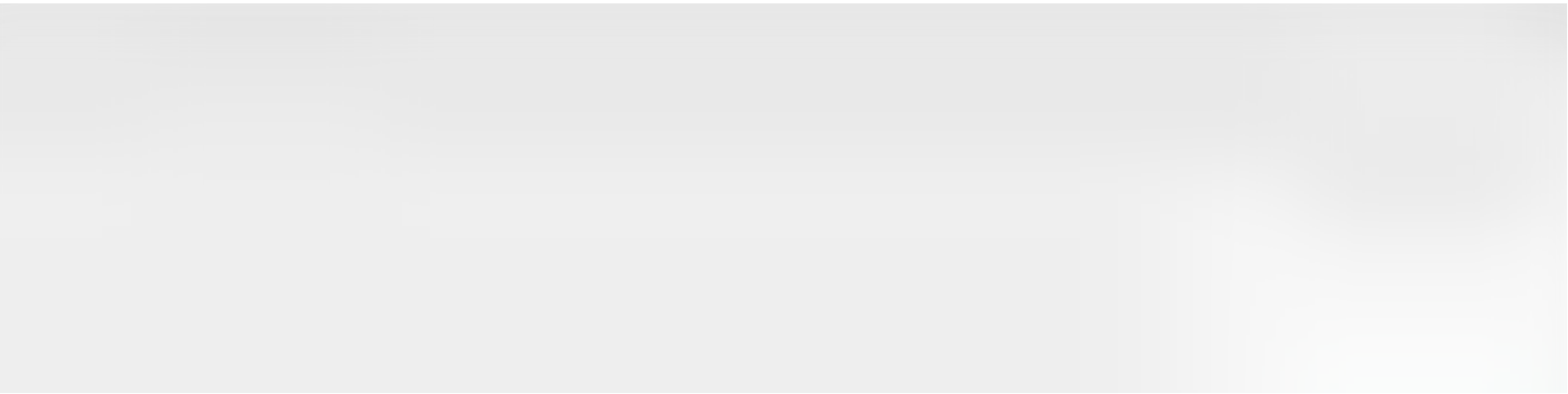
This calls `this.removeTag` and the index will just be the last item in the array. Here it is in the whole function:

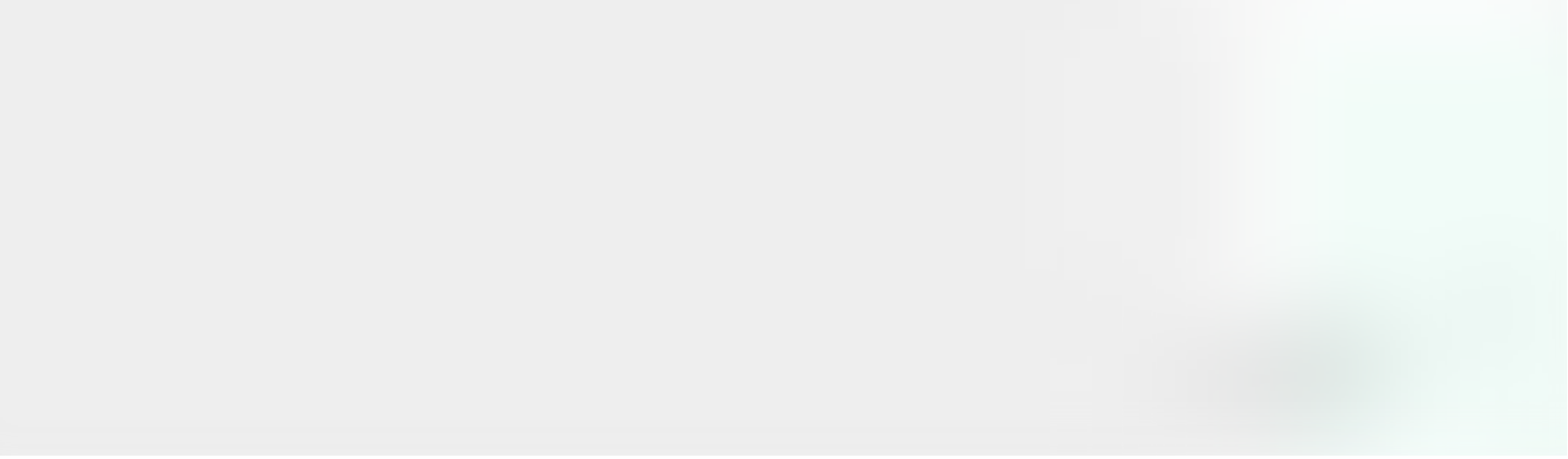
Using backspace to remove tags.

Style It Up!

Now, I don't want to go into the styling part as everybody might might want to make their component look different and really that's not the focus of this article. Take a look at the final code for styling guidance. The recommendation is to use `flex` to display tags and the input inline.

Final Solution




Final solution in action.

Link to final solution: https://codepen.io/jerrylow/pen/mvZZpp

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