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Simplifying JavaScript

Writing Modern JavaScript with ES5, ES6, and Beyond

The Pragmatic Bookshelf

Raleigh, North Carolina

The Pragmatic Programmers

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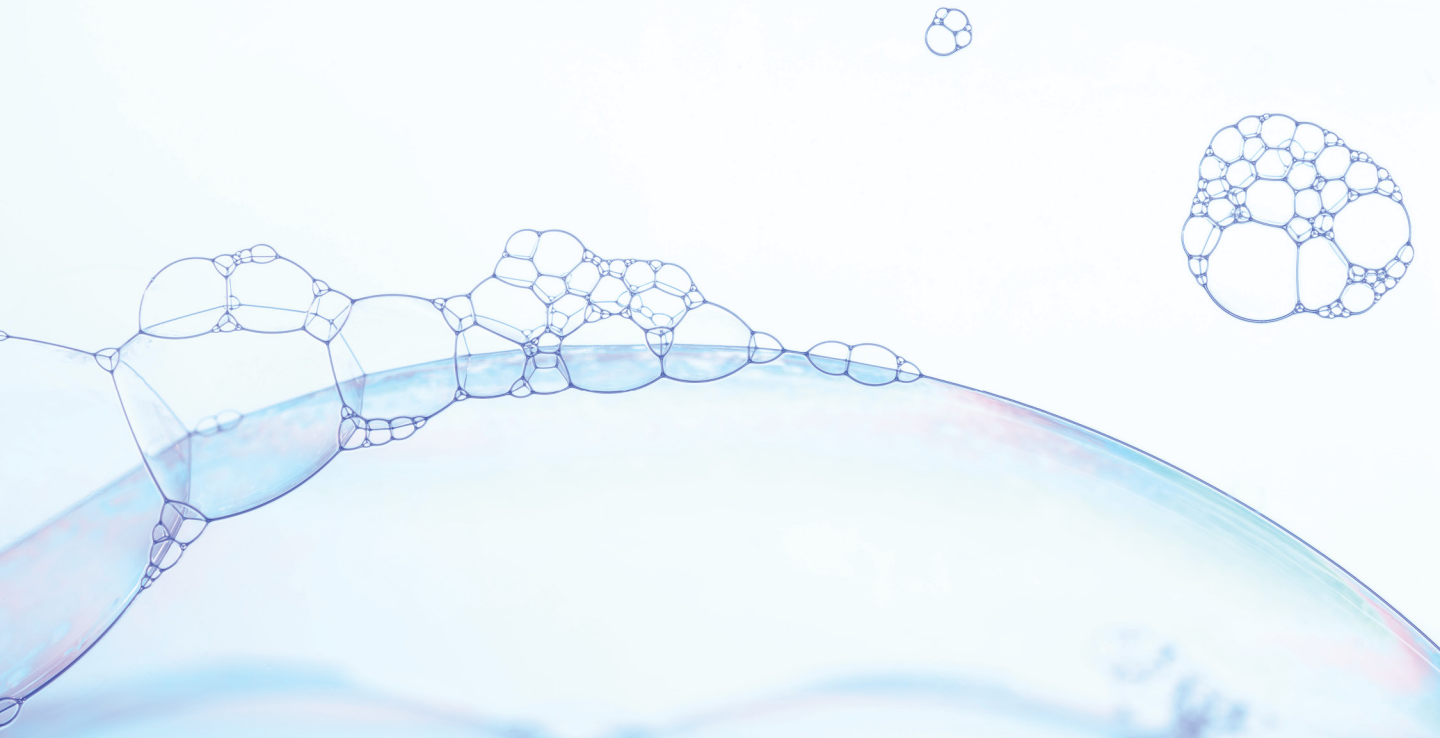

Joe Morgan

edited by Andrea Stewart

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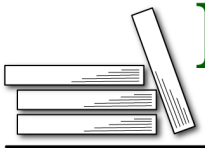

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Tip 12

Update Information with Object Spread

In this tip, you'll learn how the object spread operator gives you all the advantages of Object.assign() with reduced syntax.

You saw in the previous tip how you can use Object.assign() to make copies of objects and how you can overwrite object values with new values from another object. It's a great tool that has a lot of value. But, wow—it's ugly.

The spread operator was such a popular addition in ES6 that similar syntax is being introduced for objects. The object spread operator is not officially part of the spec, but it's so widely used that it will likely be adopted in the future. You can check out the proposal on github.[1]

Using Proposed Syntax

JavaScript developers love new syntax. In fact, they love it so much they often start using it before it's officially adopted. This is the case with the object spread operator and other things such as private methods in classes. You see them in many code bases even though the spec is not official.

Deciding when to use proposed syntax is a matter of preference. I tend to be pretty conservative and only adopt proposed syntax when it's very clear that the community supports the change and the proposal is unlikely to change.

Once you decide to use proposed syntax, you will need to make a few changes to your development environment. If you use Babel for compiling your code in order to be compatible across browsers, all you have to do is add a plugin and everything works fine. If you are on Node.js, it can be a little more difficult. Many features are supported using the --harmony flag when starting Node.js.

Feel free to experiment, but be aware you may need to refactor code if the official proposal changes.

How does the object spread operator work? Well, it's simple. It works like the array spread operator—the key-values are returned as if in a list. You can easily add information by placing it either before or after the spread. And like the array spread, you must spread it out into something.

1. https://github.com/tc39/proposal-object-rest-spread

collections/objectSpread/objectSpread.js

```
const book = {
  title: 'Reasons and Persons',
  author: 'Derek Parfit',
};

const update = { ...book, year: 1984 };

// { title: 'Reasons and Persons', author: 'Derek Parfit', year: 1984}
```

But it's different from the array spread in that if you add a value with the same key, it will use whatever value is declared last.

In this way, it's like Object.assign() with much less typing.

collections/objectSpread/objectSpread.js

```
const book = {
  title: 'Reasons and Persons',
  author: 'Derek Parfit',
};

const update = { ...book, title: 'Reasons & Persons' };

// { title: 'Reasons & Persons', author: 'Derek Parfit' }
```

That's it! It takes the best existing features and combines them. You will not be surprised to learn that the JavaScript community embraces it enthusiastically.

Now that you have some great new syntax, try rewriting the functions from the previous tip. I'll give you the original and then the updated version. But try it yourself. It's very simple.

Here's the way to add or update information with Object.assign():

collections/assign/assign.js

```
const defaults = { author: '',
  title: '',
  year: 2017,
  rating: null,
};

const book = {
  author: 'Joe Morgan',
  title: 'Simplifying JavaScript',
};

const updated = Object.assign({}, defaults, book);
```

And here it is with the object spread operator:

collections/objectSpread/objectSpread.js

```
const defaults = {
  author: '',
  title: '',
  year: 2017,
  rating: null,
};

const book = {
  author: 'Joe Morgan',
  title: 'ES6 Tips',
};

const bookWithDefaults = { ...defaults, ...book };

// {
//   author: 'Joe Morgan',
//   title: 'ES6 Tips',
//   year: 2017,
//   rating: null,
// }
```

You'll have the same deep merge problems that you have with Object.assign(): you don't copy nested objects—you only copy a reference creating a potential problem with mutations.

Fortunately, the fix is less painful on the eyes. Here's the original.

collections/assign/assign.js

```
const employee2 = Object.assign(
  {},
  defaultEmployee,
  {
    name: Object.assign({}, defaultEmployee.name),
  },
);

export { defaults };
```

Now, before you the look at the answer, really try this out. It's straightforward, but still a little more complex. Got it? Okay. Here's the same update with the object spread operator.

collections/objectSpread/objectSpread.js

```
const employee = {
  ...defaultEmployee,
  name: {
    ...defaultEmployee.name,
  },
};
```

The advantages are clear. The code is more readable. You're signaling your intention to create an object in a clear way. You don't have to worry about mutations because you don't need to remember to start with an empty object.

The object spread is fantastic—it's great for your code and gives you an opportunity to integrate experimental features in your code base.

That's all there is for existing collections. In the next tip, you will finally get to try out some completely new collections that should improve your code communication. First up, the Map object.