

ES6 Modules



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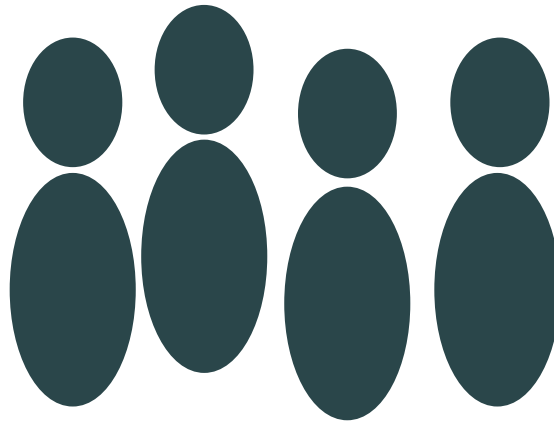
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Modules

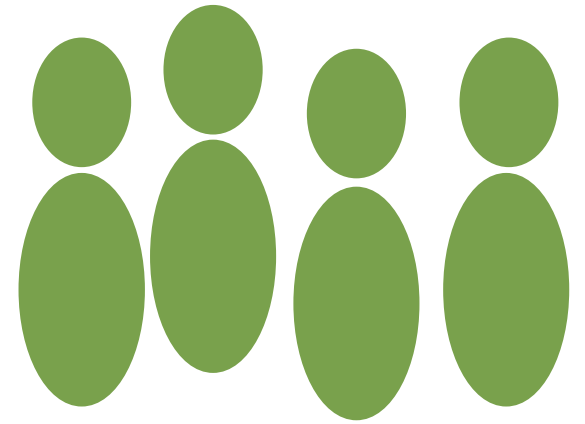
AMD Rules!!!



CommonJS is
the Best!

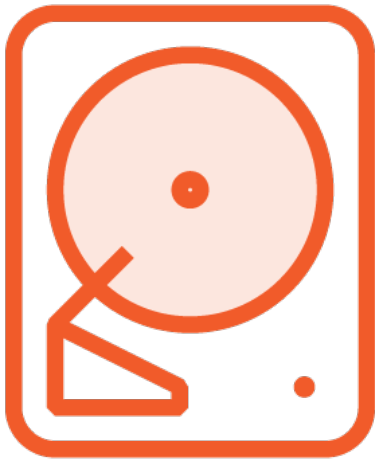


We like [less
popular format]!!



Technical Committee 39

- Develops ECMAScript Standard
- **Included:** Official Syntax for Modules
- **Excluded:** Runtime Module Loader Spec



WHATWG

Web Hypertext Application Technology
Working Group

<https://whatwg.github.io/loader/>



TypeScript as a Transpiler

Write code using ES6 module syntax
Transpile for ES5-era module loaders

TypeScript

CommonJS

AMD

UMD

System

Introduction to ES6 Modules

Without Modules

library.js

```
function doSomething() {  
  
}
```

program.js

```
doSomething();
```



Introduction to ES6 Modules

With Modules

library.js

```
function doSomething() {  
  
}
```

program.js

```
doSomething();
```



Introduction to ES6 Modules

With Modules

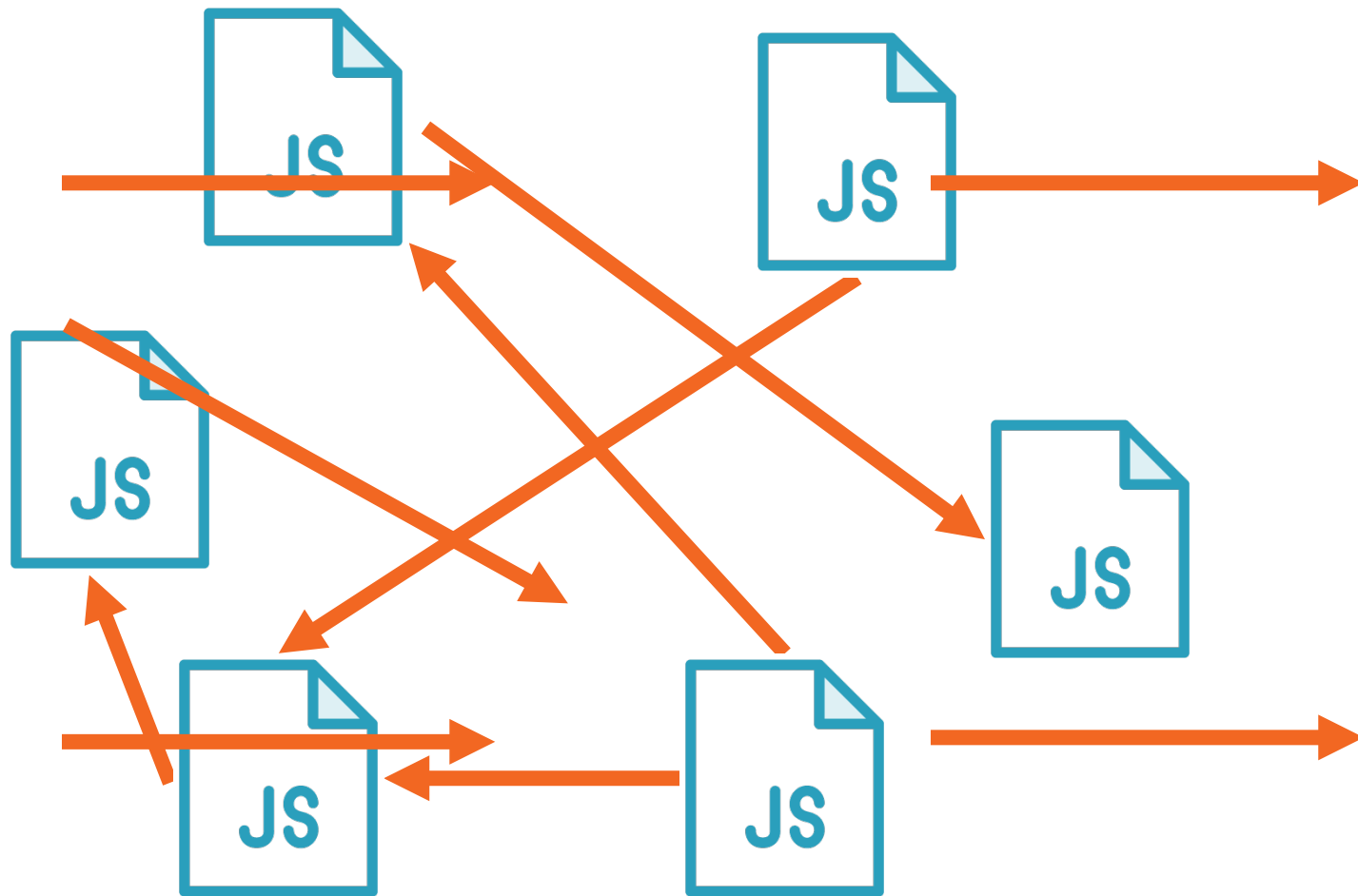
library.js

```
function doSomething() {  
  }  
export doSomething;
```

program.js

```
import {doSomething}  
  from "library";  
  
doSomething();
```





ES6 Module Syntax Review

A JS file becomes a module if it:

- imports something
- exports something

ES6 Module Syntax Review

Can export:

- variable
- class
- function
- TypeScript-specific
 - namespace
 - enum

```
function doStuff() {  
}
```

```
export default function doStuff() {  
}
```

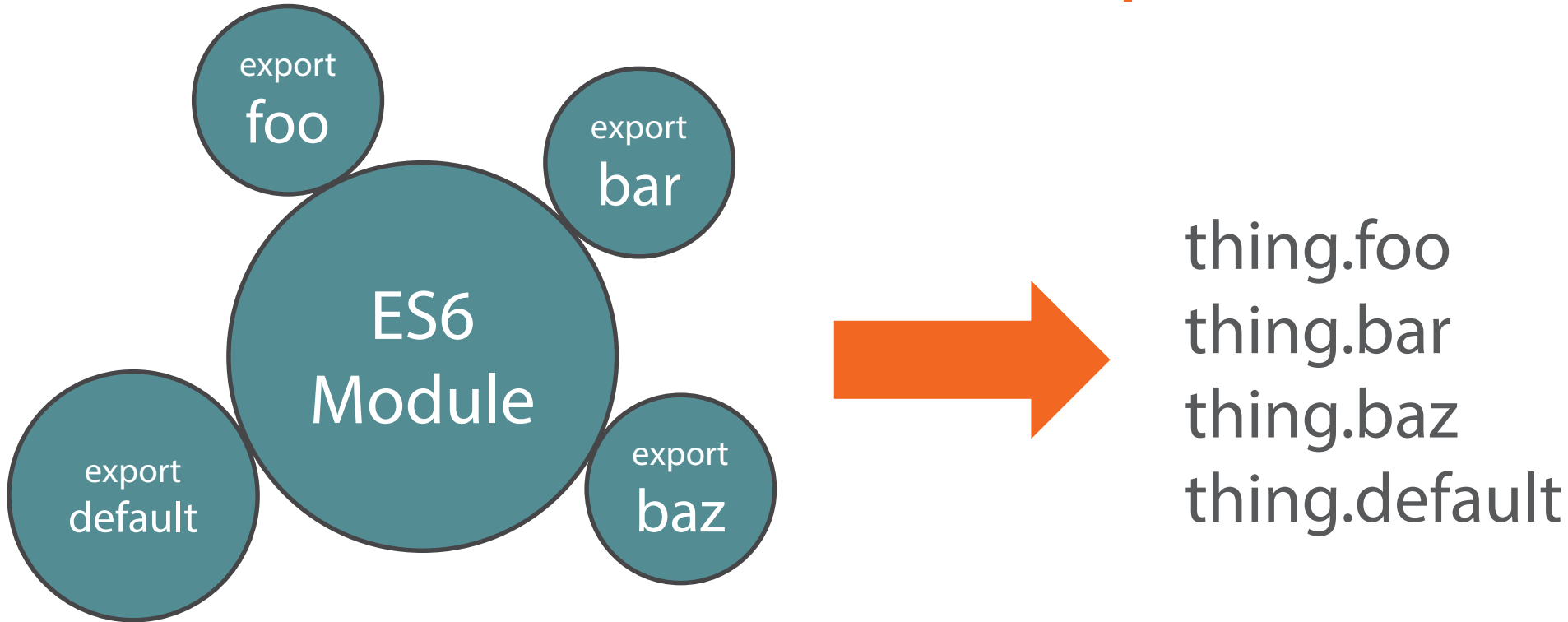
```
export function doStuff() {  
  
}
```

```
const diw = 7;  
const greet = function() {  
    return "Hi!";  
};
```

```
export {diw, greet};
```

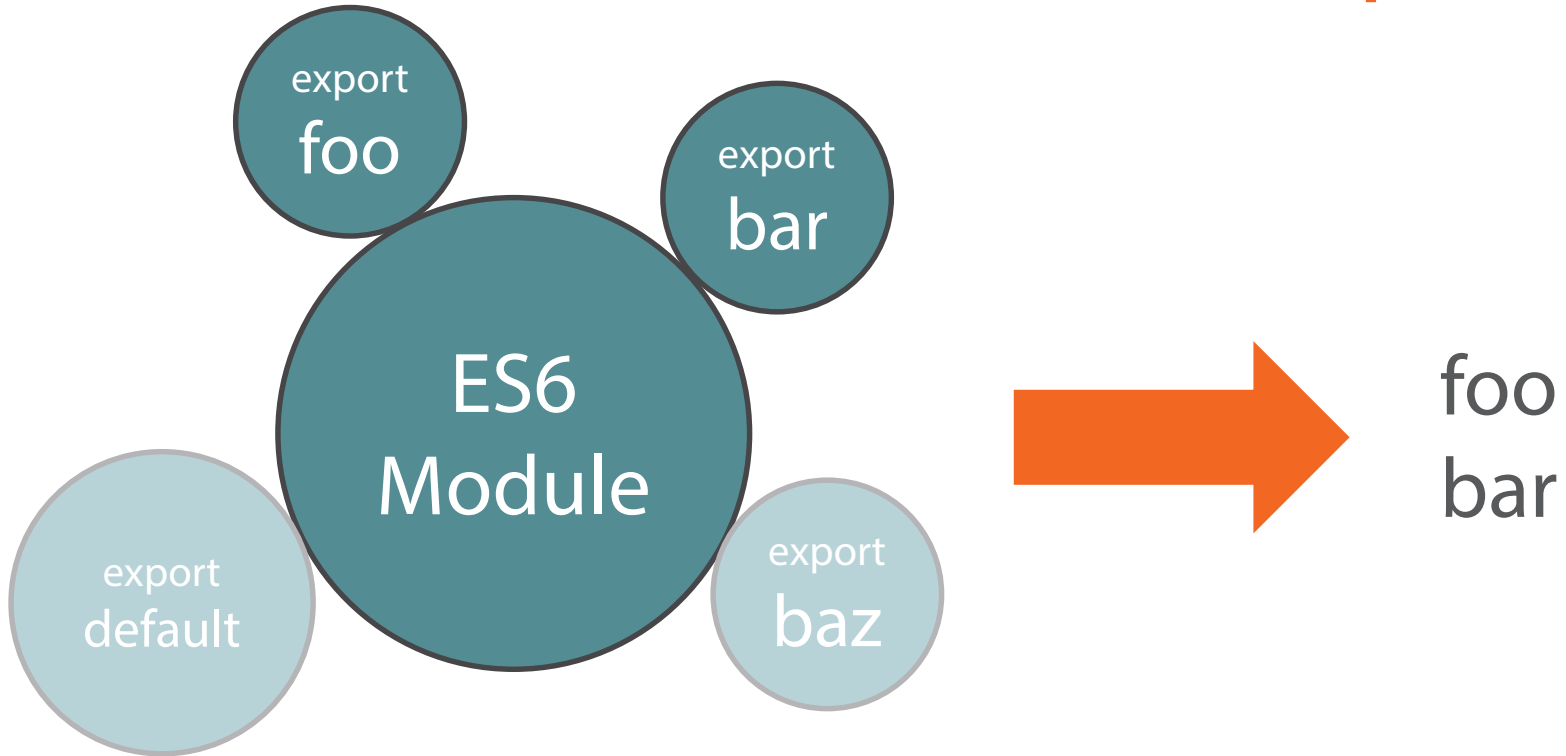
```
export {diw as daysInWeek,  
        greet};
```


ES6 Module Imports



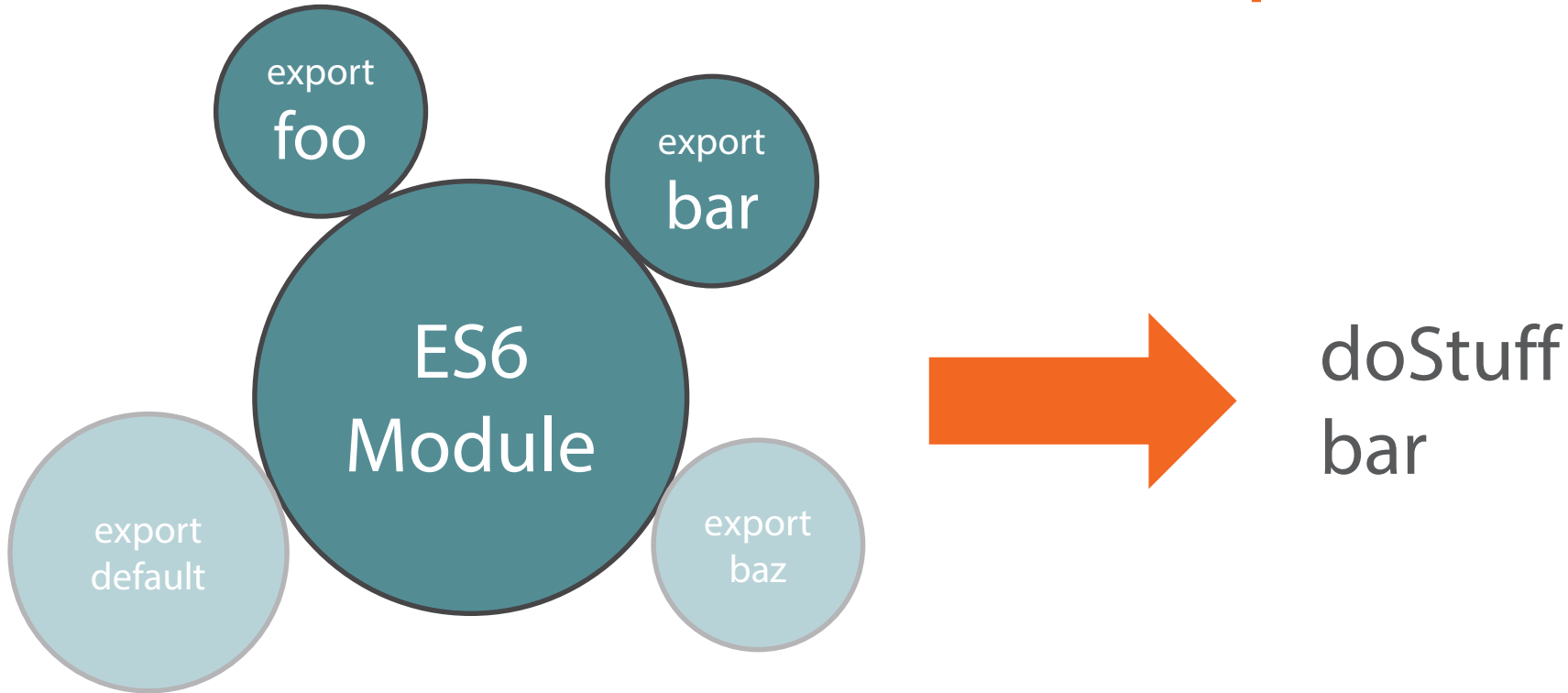
```
import * as thing from "./modulepath";
```

ES6 Module Imports



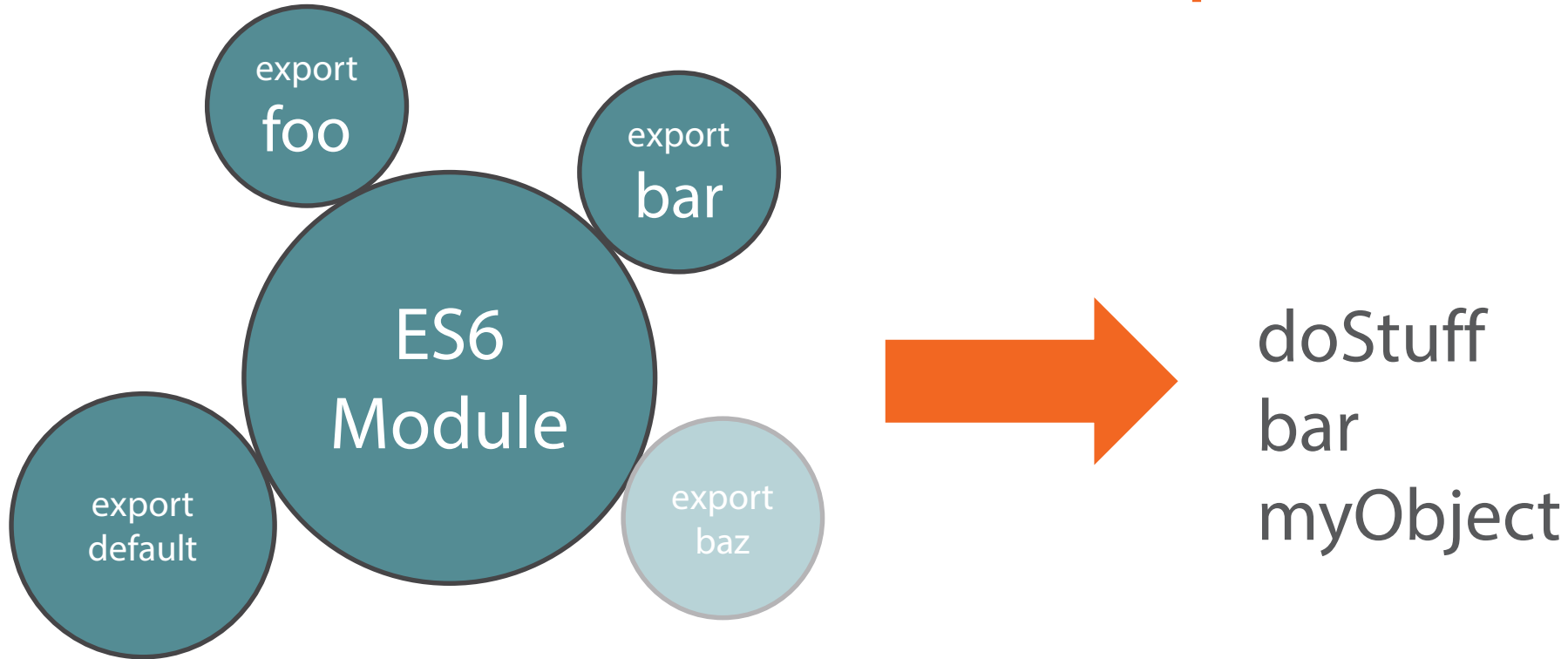
```
import {foo, bar} from "./modulepath";
```

ES6 Module Imports



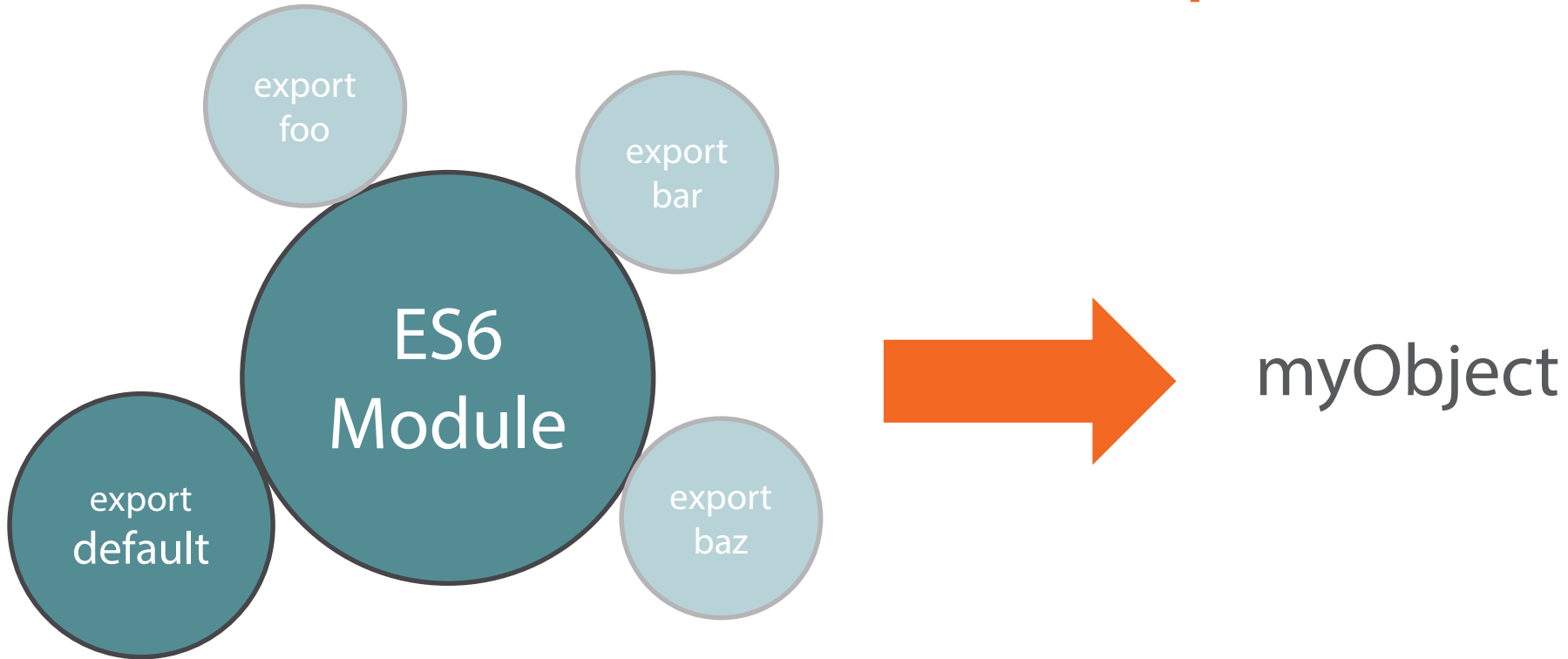
```
import {foo as doStuff, bar} from "./modulepath";
```

ES6 Module Imports



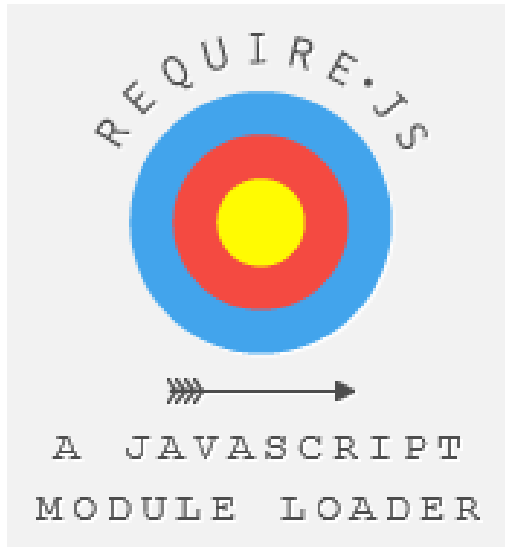
```
import {foo as doStuff, bar,  
       default as myObject} from "./modulepath";
```

ES6 Module Imports



```
import myObject from "./modulepath";
```

Coming up Next



Loading ES6 modules transpiled to AMD format with RequireJS

AMD

Asynchronous Module Definition



<http://requirejs.org>



SystemJS

System.register()

Polyfill for new
System object

AMD

CommonJS

Shim for
“Global” JS

Non-JS
CSS, JSON,
images

SystemJS

Transpile to `System.register()`

Added in TypeScript 1.5

Using SystemJS with TypeScript

TypeScript Loader Plugin

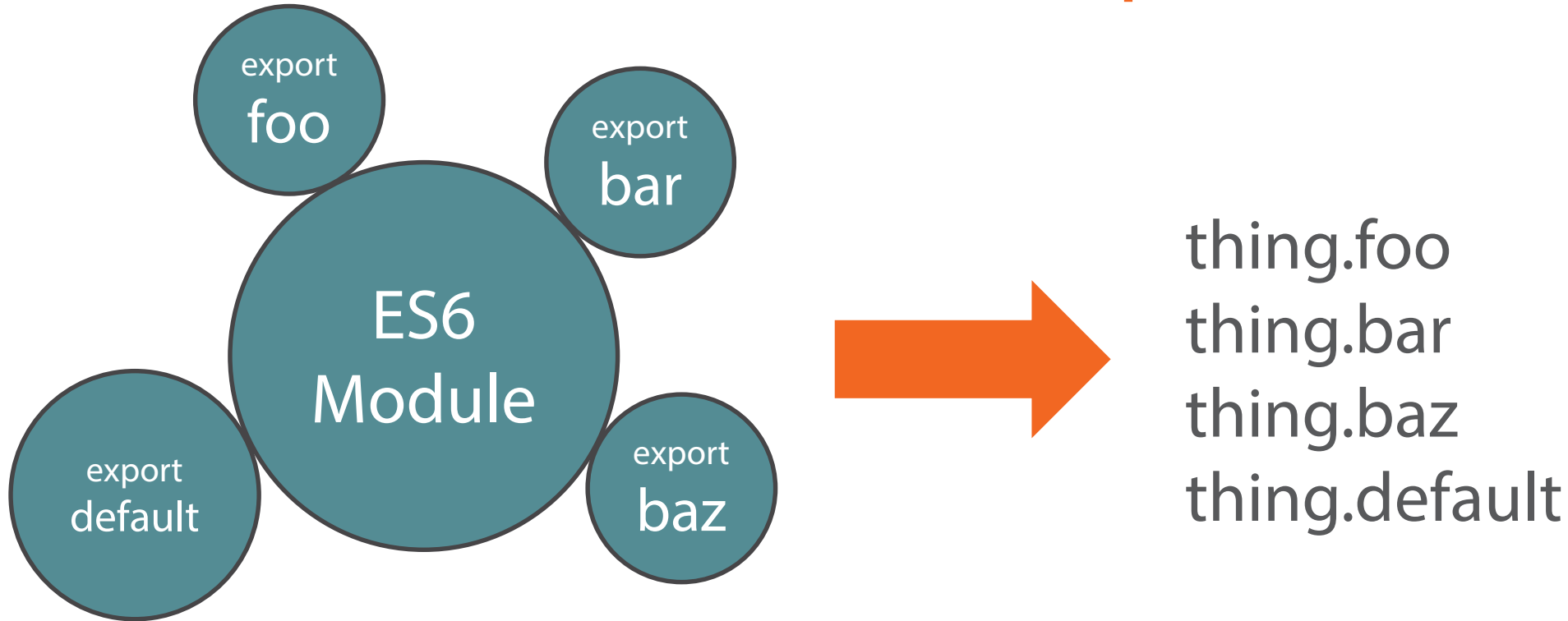
- Serve TypeScript as-is
- Transpile on client

Transpile centrally

- Compile at develop time
- Serve regular JS to clients

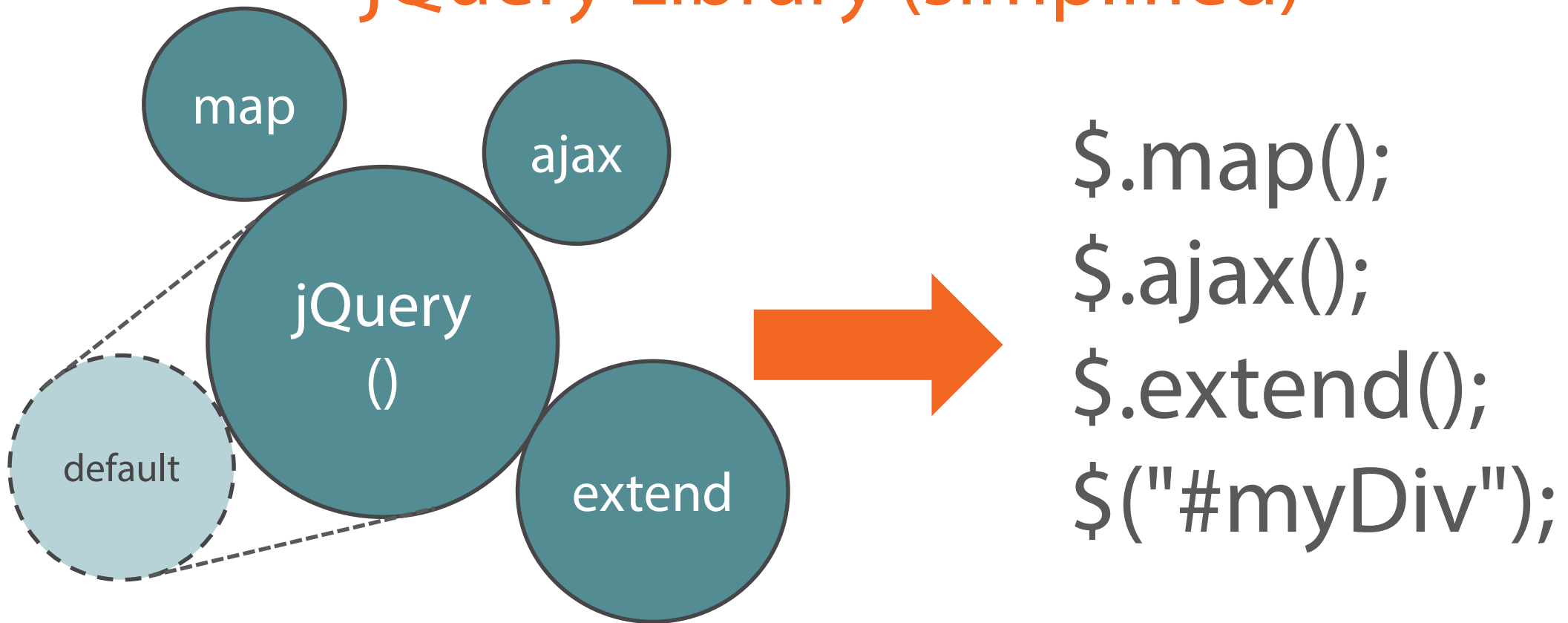
<https://github.com/frankwallis/plugin-typescript>

ES6 Module Imports



```
import * as thing from "./themodulepath";
```

jQuery Library (simplified)



```
import * as $ from "./jQuery";  
import $ from "./jQuery";
```