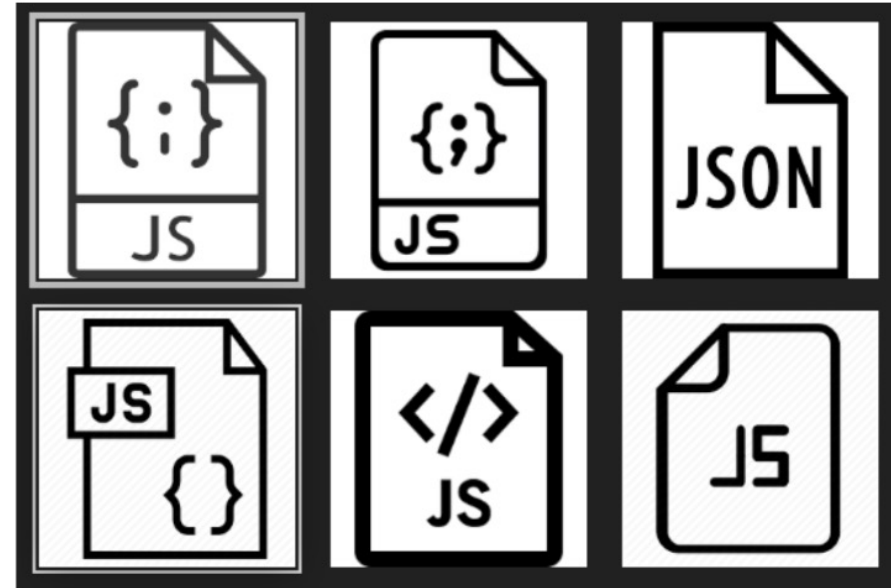


03 — WEBTECHNOLOGIEN
— JAVASCRIPT CONTINUED
— MODULE

PROF. DR. MARKUS HECKNER

Javascript Modules

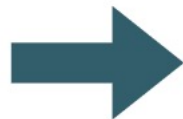
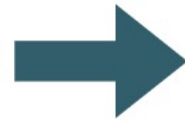
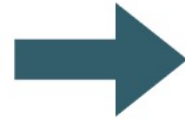
- To structure an application coherently, the backend consists of separate Javascript files.
- Objects declared in these files must be
 - exported by one file
 - imported by another
- In order to keep each module focused on a specific responsibility



Example

standalone.js

- 2 separate object defined in a single file
- Methods called on these objects at the end of the file

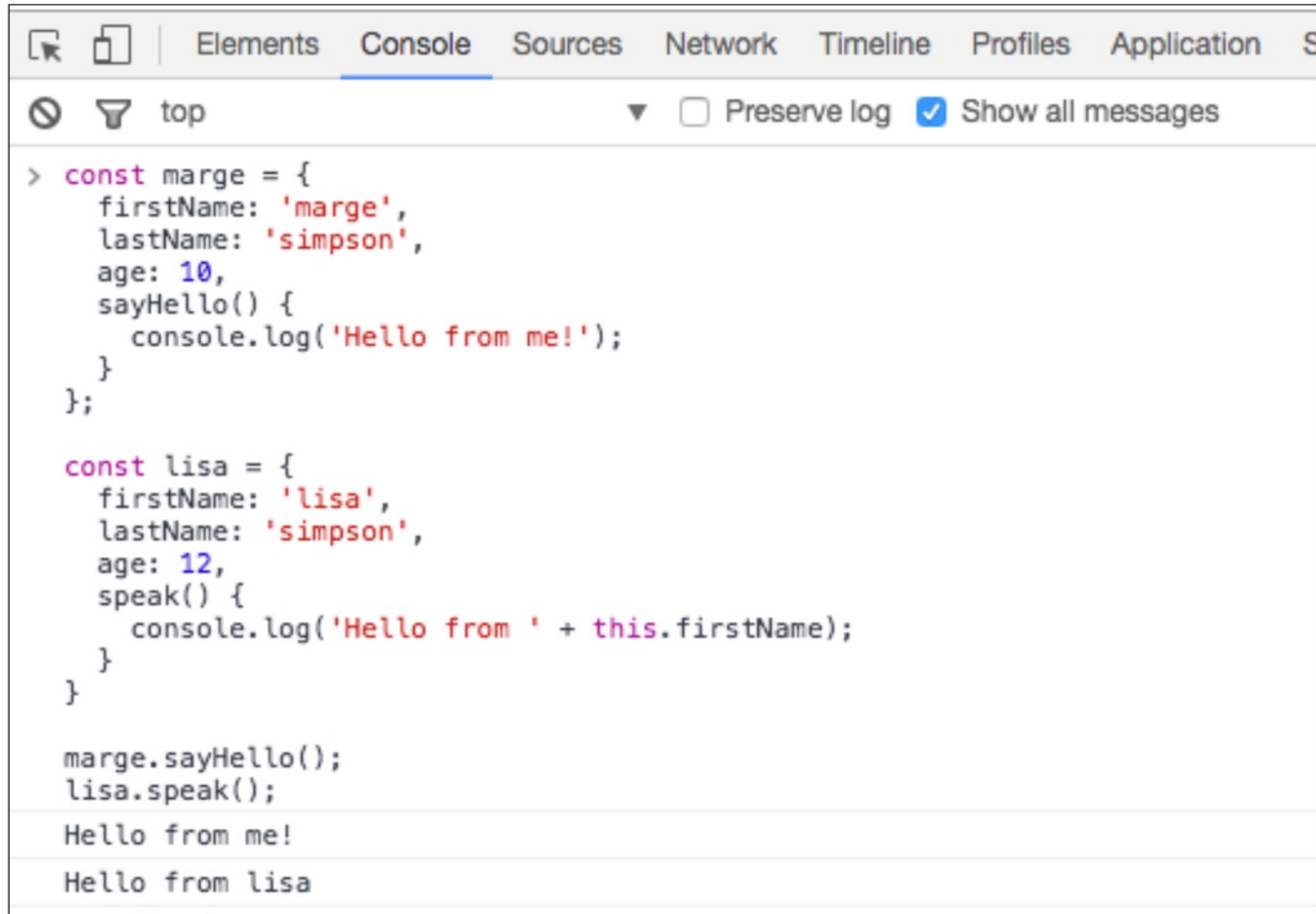


```
const marge = {
  firstName: 'marge',
  lastName: 'simpson',
  age: 10,
  sayHello() {
    console.log('Hello from me!');
  }
};

const lisa = {
  firstName: 'lisa',
  lastName: 'simpson',
  age: 12,
  speak() {
    console.log('Hello from ' + this.firstName);
  }
}

marge.sayHello();
lisa.speak();
```

In Chrome JS Console



The screenshot shows the Chrome DevTools interface with the 'Console' tab selected. The top bar includes icons for navigation and tabs for 'Elements', 'Console', 'Sources', 'Network', 'Timeline', 'Profiles', and 'Application'. Below the tabs, there are controls for filtering (a funnel icon and 'top'), a 'Preserve log' checkbox (unchecked), and a 'Show all messages' checkbox (checked). The main area displays the following JavaScript code:

```
> const marge = {
  firstName: 'marge',
  lastName: 'simpson',
  age: 10,
  sayHello() {
    console.log('Hello from me!');
  }
};

const lisa = {
  firstName: 'lisa',
  lastName: 'simpson',
  age: 12,
  speak() {
    console.log('Hello from ' + this.firstName);
  }
}

marge.sayHello();
lisa.speak();
```

Below the code, the console output shows two lines of text:

```
Hello from me!
Hello from lisa
```

Modularise the Program

JAVASCRIPT CONTINUED

standalone.js

```
const marge = {  
  firstName: 'marge',  
  lastName: 'simpson',  
  age: 10,  
  sayHello() {  
    console.log('Hello from me!');  
  }  
};  
  
const lisa = {  
  firstName: 'lisa',  
  lastName: 'simpson',  
  age: 12,  
  speak() {  
    console.log('Hello from '  
      + this.firstName);  
  }  
}  
  
marge.sayHello();  
lisa.speak();
```

marge.js

```
const marge = {  
  firstName: 'marge',  
  lastName: 'simpson',  
  age: 10,  
  sayHello() {  
    console.log('Hello from me!');  
  }  
};
```

lisa.js

```
const lisa = {  
  firstName: 'lisa',  
  lastName: 'simpson',  
  age: 12,  
  speak() {  
    console.log('Hello from '  
      + this.firstName);  
  }  
}
```

main.js

```
marge.sayHello();  
lisa.speak();
```

<http://requirejs.org/>



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Writing Plugins ⚙

Why Web Modules ?

Why AMD ?

Requirements 📊

History ⌚

```
/* ---
```

RequireJS is a JavaScript file and module loader. It is optimized for in-browser use, but it can be used in other JavaScript environments, like Rhino and Node. Using a modular script loader like RequireJS will improve the speed and quality of your code.

IE 6+	compatible	✓
Firefox 2+	compatible	✓
Safari 3.2+	compatible	✓
Chrome 3+	compatible	✓
Opera 10+	compatible	✓

Get started then check out the API.

```
--- */
```

Modularise the Program

- These three modules:
 - marge.js
 - lisa.js
 - main.js
- Are completely separate.
- main.js cannot use marge or lisa objects

marge.js

```
const marge = {  
  firstName: 'marge',  
  lastName: 'simpson',  
  age: 10,  
  sayHello() {  
    console.log('Hello from me!');  
  }  
};
```

lisa.js

```
const lisa = {  
  firstName: 'lisa',  
  lastName: 'simpson',  
  age: 12,  
  speak() {  
    console.log('Hello from ' + this.firstName);  
  }  
}
```

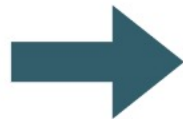
main.js

```
marge.sayHello();  
lisa.speak();
```

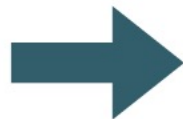


module.exports

module.exports makes
the listed object available
to other modules



```
marge.js
const marge = {
  firstName: 'marge',
  lastName: 'simpson',
  age: 10,
  sayHello() {
    console.log('Hello from me!');
  }
};
module.exports = marge;
```



```
lisa.js
const lisa = {
  firstName: 'lisa',
  lastName: 'simpson',
  age: 12,
  speak() {
    console.log('Hello from ' + this.firstName);
  }
};
module.exports = lisa;
```


require

require identifies and imports objects defined in other modules



marge.js

```
const marge = {
  firstName: 'marge',
  lastName: 'simpson',
  age: 10,
  sayHello() {
    console.log('Hello from me!');
  }
};

module.exports = marge;
```

lisa.js

```
const lisa = {
  firstName: 'lisa',
  lastName: 'simpson',
  age: 12,
  speak() {
    console.log('Hello from ' + this.firstName);
  }
};

module.exports = lisa;
```

main.js

```
const marge = require('./marge.js');
const lisa = require('./lisa.js');

marge.sayHello();
lisa.speak();
```

← → ↻ replit.com/@mheckner/WebDevKIDSlecturesrc#.replit

 Apps  Trello  0 Timer  Schedule a Meeti...  Confluence RSDS  Regensburger Kat

≡   mheckner / WebDev_KIDS_lectur...  ↻



Files




✓  03_JS




✓  modules



>  one_file



>  several_files_not_work...

>  several_files_require

.replit x

```
1 language = "nodejs"
2 run = "node app.js"
```

JAVASCRIPT CONTINUED