Module Formats and Loaders

Brice Wilson

@brice_wilson www.BriceWilson.net

Overview

Relationship between module formats and module loaders

Module formats

- Native vs. non-native
- Asynchronous Module Definition (AMD)
- CommonJS

Module loaders

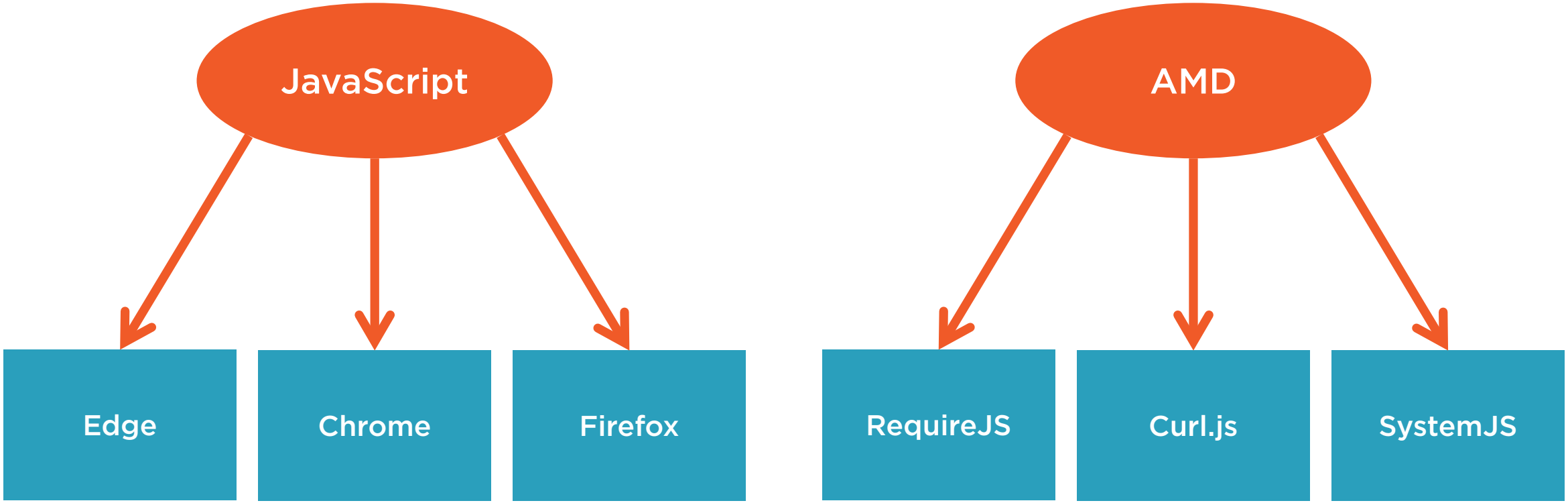
- RequireJS
- SystemJS

Formats Versus Loaders

Module Format ➔ Syntax

Module Loader ➔ Execution

Formats Versus Loaders



Module Formats

Asynchronous Module Definition (AMD)

CommonJS

Universal Module Definition (UMD)

System.register

ES2015

Module Loaders

RequireJS

(AMD)

SystemJS

(AMD, CommonJS, UMD, System.register)

AMD Format

```
// game.js
define(['./player'], function(player) {
```

```
});
```

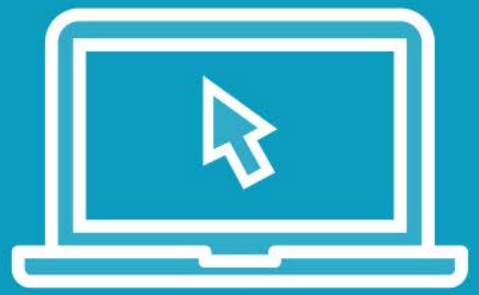
AMD Format

```
// game.js
define(['./player'], function(player) {
    console.log('Starting game for ' + player.getName());
});
```

AMD Format

```
// game.js
define(['./player'], function(player) {
    console.log('Starting game for ' + player.getName());
    function calculateScore() {
        // calculate the score here
    }
    return {
        calculateScore: calculateScore
    };
});
```

Demo



Using the AMD format with RequireJS

CommonJS Format

```
// game.js
var player = require('./player.js');
```

CommonJS Format

```
// game.js
var player = require('./player.js');

function printGame() {
    // print the game here
}

function calculateScore() {
    // calculate the score here
}

exports.printGame = printGame;
```

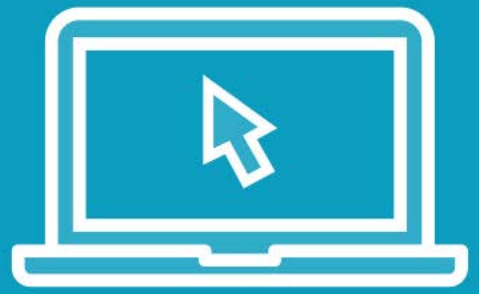
CommonJS Format

```
// game.js
var player = require('./player.js');

function printGame() {
    // print the game here
}

function calculateScore() {
    // calculate the score here
}

exports.printGame = printGame;

exports.calculateScore = calculateScore;
```

Export Syntax

```
// module.exports === exports

exports.calculateScore = calculateScore;

module.exports.calculateScore = calculateScore;

exports = { };

exports = function() { };

module.exports = { };

module.exports = function() { };
```

Demo



Using the CommonJS format with SystemJS

Summary

Module formats versus module loaders

AMD modules with RequireJS

CommonJS modules with SystemJS

Related Courses

- *RequireJS: JavaScript Dependency Injection and Module Loading*
- *Modern, Modular JavaScript with SystemJS and jspm*