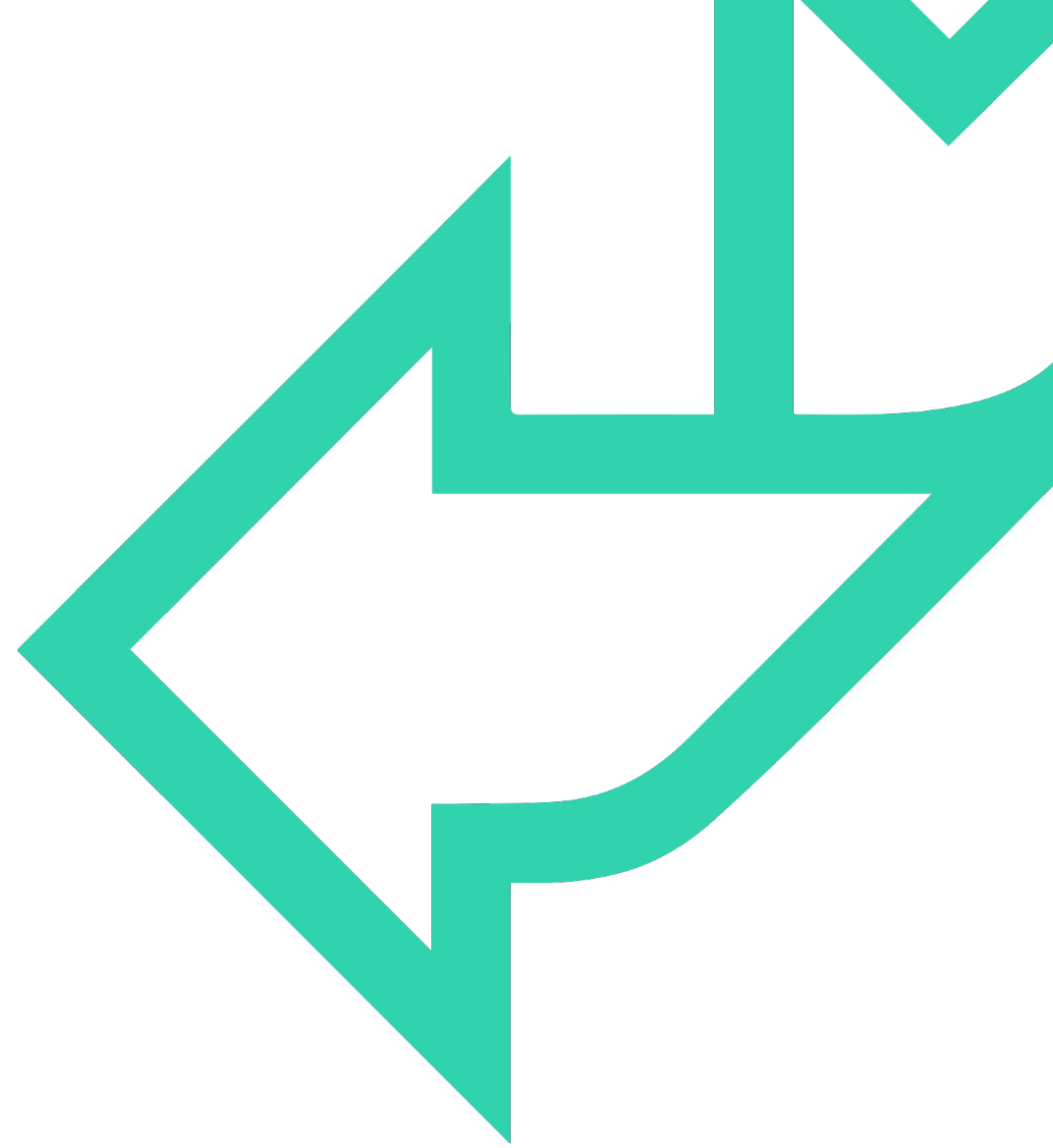




# Modules

JavaScript Fundamentals





# MODULES



- Any serious, sizable JavaScript project will benefit from modularisation
  - Previously implemented using third party libraries such as RequireJS
- ECMAScript 2015 Modules are built upon the export and import keywords
- Automatically "**use strict**"
- Have their own scope
- Can export any top-level **function**, **class**, **var**, **let** or **const**
- **export** and **import** must be used at the top-level, so no conditional loading

# QA Modules



As we are using Native JS – you must tell the browser that it can access JS Modules. Note the change in the `<script>` tag

```
<script type="module" src="index.js"></script>
```

- Export using the export keyword

```
//circle-functions.js
export function area(r) {
  return Math.PI * Math.pow(r, 2)
}
```

- Import using the import keyword

```
//app.js
import {area} from "circle-functions.js";

console.log(area(5)); //78.53981633974483
```

# QA Modules

Import many items

```
//circle-functions.js
export function area(r) {
  return Math.PI * Math.pow(r, 2)
}

export function circumference(r) {
  return 2 * Math.PI * r
}
```

```
//app.js
import {area, circumference} from "circle-functions.js";

console.log(area(5)); //78.53981633974483
console.log(circumference(5)); //31.41592653589793
```

# QA Modules

Import many items

```
//circle-functions.js
export function area(r) {
  return Math.PI * Math.pow(r, 2)
}

export function circumference(r) {
  return 2 * Math.PI * r
}
```

```
//app.js
import * as circle from "circle-functions.js";

console.log(circle.area(5)); //78.53981633974483
console.log(circle.circumference(5)); //31.41592653589793
```

# QA Modules

Export many items

```
//circle-functions.js
export {area, circumference};

function area(r) {
  return Math.PI * Math.pow(r, 2)
}

function circumference(r) {
  return 2 * Math.PI * r
}
```

```
//app.js
import * as circle from "circle-functions.js";

console.log(circle.area(5)); //78.53981633974483
console.log(circle.circumference(5)); //31.41592653589793
```

# QA Modules

- Export and Import default

```
//circle-functions.js
export {area, circumference};

function area(r) {
  return Math.PI * Math.pow(r, 2)
}

function circumference(r) {
  return 2 * Math.PI * r
}

export default {
  radius: 5
  centre: [0,0]
}
```

```
//app.js
import circle from "circle-functions.js";

console.log(circle); //{radius: 5, centre: [0,0]}
```

# QA Modules

- Export and Import default

```
//circle-functions.js
export {area, circumference};

function area(r) {
    return Math.PI * Math.pow(r, 2)
}

function circumference(r) {
    return 2 * Math.PI * r
}

export default {
    radius: 5
    centre: [0,0]
}
```

```
//app.js
import circle, {area, circumference} from "circle-functions.js";

console.log(circle); //{radius: 5, centre: [0,0]}
console.log(area(circle.radius)); //78.53981633974483
```





## QuickLab 13 - Modules

- Create some Modules from monolithic code