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@angular/universal - SSR
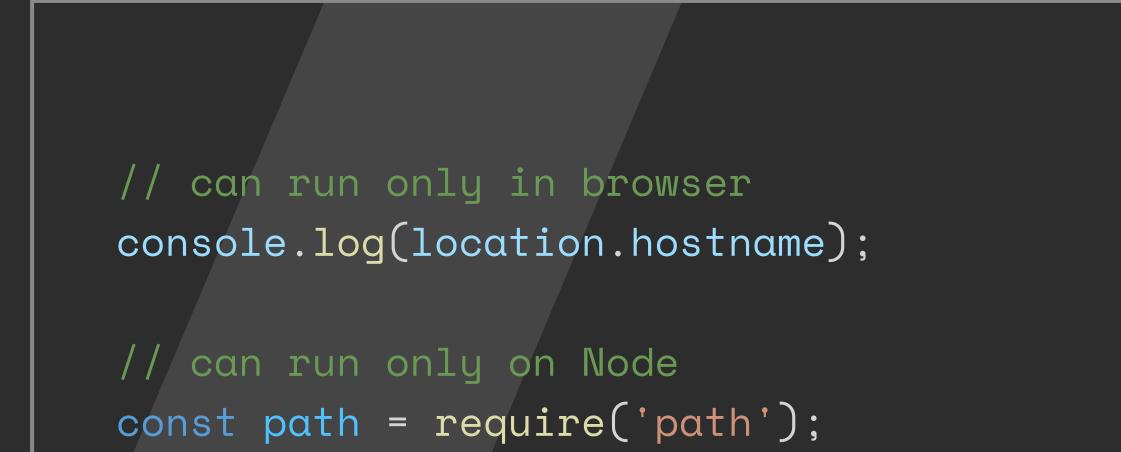
2. Universal/Isomorphic code

What is Universal/Isomorphic code?

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- Universal or Isomorphic javascript code is code that can run on the browser client side, and on the server node.js side

- Consider the following code example

Not Universal

```
// can run only in browser
console.log(location.hostname);


// can run only on Node
const path = require('path');
```

Universal

```
// only browser will execute this
if (typeof location !== 'undefined') {
  console.log(location.hostname);
}


// only node will execute this
if (typeof require !== 'undefined') {
  const path = require('path');
}
```

Writing Isomorphic code is harder

- Writing Isomorphic code is harder

  - You cannot use api that is only available on one platform without using a condition or a shim

    - you cannot use **location** on node but you can create it on the node side (shim) with specific node logic

    - Instead of a shim you can condition your code to only run the specific api on the right platform and skip it on other platforms

  - The same applies to packages and libraries you install the use specific platform api - you will have to condition the use of those libraries on a specific platform or use shim

Thank You

Next Lesson: 3. angular platform agnostic

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