

TRANSPILERS AND POLYFILLS

INTERVIEW QUESTION



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How can we make our modern code work on older engines that don't understand recent features yet?

THERE ARE TWO TOOLS FOR THAT:

- **TRANSPILERS.**
- **POLYFILLS.**

TRANSPILERS

- A transpiler is a special piece of software that **translates source code into another source code**. It converts modern JavaScript syntax into a version that older engines can understand.
- By parsing modern code and rewriting it using older syntax constructs, a transpiler ensures compatibility with outdated engines.

EXAMPLE: BABEL

Transpiler converts modern js to

```
// Using ES6 arrow functions and let/const  
const greet = (name) => {  
  let greeting = `Hello, ${name}!`;   
  return greeting;  
};  
  
console.log(greet('World')); // Output: Hello, World!
```



older version

```
// Using ES5 function expressions and var  
var greet = function(name) {  
  var greeting = 'Hello, ' + name + '!';  
  return greeting;  
};  
  
console.log(greet('World')); // Output: Hello, World!
```

POLYFILLS

- New language features not only include syntax constructs and operators, but also built-in functions.
- These **latest built-in functions are converted to older equivalents** with the help of polyfills to work in older browsers.

POLYFILL LIBRARIES

- Core js
- polyfill.io

Polyfills converts modern js built in functions to

```
// Check if an array contains a specific element  
const fruits = ['apple', 'banana', 'mango'];  
console.log(fruits.includes('banana')); // Output: true
```

OLDER VERSION

```
// Polyfill for Array.prototype.includes  
if (!Array.prototype.includes) {  
  Array.prototype.includes = function(element) {  
    return this.indexOf(element) !== -1;  
  };  
}  
  
// Check if an array contains a specific element  
const fruits = ['apple', 'banana', 'mango'];  
console.log(fruits.includes('banana')); // Output: true
```

Transpilers and polyfills are essential tools for ensuring that modern JavaScript code runs smoothly across various environments, including older browsers and JavaScript engines.



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