

# let and const

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## reviewing *var*

### *var*

- We use the **var** keyword to declare variables
- When defined in a function, the **var** keyword scopes a variable to that function
- **var** will hoist to the top of the scope it is defined in
- You can redeclare and reassign values with **var**

```
var instructor = "Colt"; // accessible everywhere!

function greet(){
  var message = "Hello!"; // scoped to the greet function
}
```

## *let*

The **let** keyword creates a **block-scoped** variable: a variable that only exists inside a code block.

### What Is A Code Block?

Essentially any pair of curly braces (outside of object syntax).

```
{
  // this is a code block

  let x = 5;

  var y = 10;
}

console.log(x);
```

```
// ReferenceError: x is not defined

console.log(y);
// 10
```

## Where Are Code Blocks Commonly Used?

You'll mostly use code blocks in **for** loops and **if** statements.

```
if (x > 10) {
  let happy = true; // happy lives ONLY in this code block
}
// can't use it outside the block
console.log(happy); // ReferenceError: happy is not defined
```

## An Example

```
for (var i = 1; i < 4; i++) {
  console.log(i);
}

// 1
// 2
// 3

console.log(i);
// 4
```

```
for (let i = 1; i < 4; i++) {
  console.log(i);
}

// 1
// 2
// 3

console.log(i); // ReferenceError: i is not defined
```

## More About let

It can be reassigned but not redeclared (unlike **var**).

```
let z = 5;
z = 25;
let z = 10;
// SyntaxError: Identifier 'z' has already been declared
```

## const

The **const** keyword prevents a variable from ever being reassigned or redeclared.

```
const PI = 3.14;

PI = 15; // TypeError: Assignment to constant variable

const PI = 5; // SyntaxError
```

**const** is also block-scoped, like **let**.

```
{
  const x = 10;
}

console.log(x); // ReferenceError: x is not defined
```

## Comparison of Variable Declaration Keywords

Keyword	Can Reassign	Can Redeclare	Can Mutate	Scope Rules
<b>var</b>	yes	yes	yes	function scope
<b>let</b>	yes	no	yes	block scope
<b>const</b>	no	no	yes	block scope

## What about var?

- There's really no need to use it
- Just be careful of block scoping with **let**