Strict Property Initialization

This lesson introduces another compiler flag, 'strictPropertyInitialization', which brings more type safety to code that uses classes.

WE'LL COVER THE FOLLOWING ^

- Definition
- Fixing the error
 - Constructor initialization
 - In-place initialization
 - Adjusting the type

Definition

The flag we're talking about is called strictPropertyInitialization. As usual, let's look at the definition from the documentation. I think it's rather selfexplanatory.

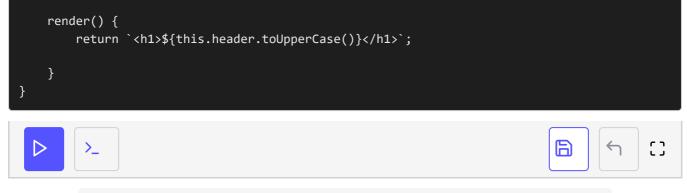
Ensure non-undefined class properties are initialized in the constructor. This option requires – strictNullChecks be enabled in order to take effect.

Enabling the flag will force you to always initialize class properties or make it explicit in the type annotation that the property can be undefined.

Fixing the error

In the piece below, the header property produces an error because it's initialized neither in-place nor in the constructor.





Run the code to see the error caused by enabling 'strictPropertyInitialization'.

There are three ways to get rid of this error. First, you can initialize the property in the constructor.

Constructor initialization

```
class HeaderComponent {
    constructor(private header: string) {}

    render() {
        return `<h1>${this.header.toUpperCase()}</h1>`;
    }
}
```

Run the code to verify that there are no compile errors. 'strictPropertyInitialization' enabled.

In-place initialization

Second, you can initialize header in-place.

```
class HeaderComponent {
   header: string = 'hello';

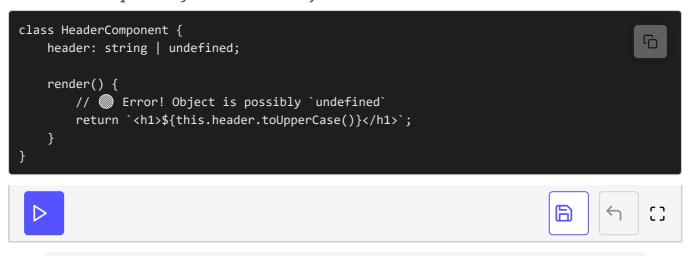
   render() {
      return `<h1>${this.header.toUpperCase()}</h1>`;
   }
}
```

Run the code to verify that there are no compile errors. 'strictPropertyInitialization' enabled.

Adjusting the type

Finally, you can explicitly mark header as possibly undefined. Note that this

will result in an error inside render because now you're trying to call a method on a possibly undefined object.



Run the code to verify that line 6 results in an error. 'strictPropertyInitialization' enabled.

The third option helps understand why this flag is related to strictNullChecks. Leaving a property uninitialized is essentially equal to lying about its type. We say that header is a string, but if we don't initialize it, it is undefined and not a string.

One could argue that this compiler behavior should be part of the strictNullChecks flag. However, strict property initialization checks could lead to cumbersome code. We'll see an example of this in the next lesson.

In the next lesson, we'll talk about an escape hatch for strictNullChecks and strictPropertyInitialization flags.