The Bang Operator

In this lesson you will see how the bang operator is used in TypeScript.

WE'LL COVER THE FOLLOWING

- Bang Operator Role
- Caveat
- Proper Usage of the Bang Operator

Bang Operator Role

The bang operator is the use of the exclamation point symbol `!`. The operator can be used after a variable and before the dot to access a member.

It is officially called the “non-null assertion operator”. A variable with the value `undefined` or `null` can benefit from using the **bang operator** because it tells TypeScript that you know that even if the value can theoretically be `null` or `undefined`, it’s not possible for that particular usage. In a situation where the value cannot be `undefined`, instead of comparing against `null` or `undefined`, you could use the bang operator to access the value.

Caveat

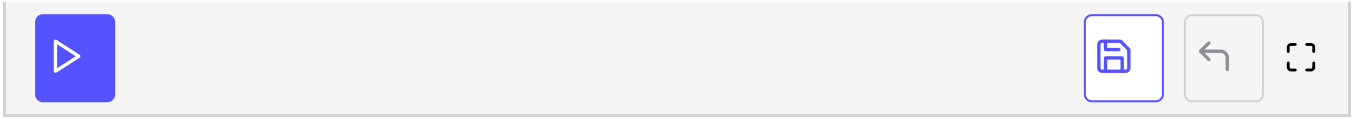
It is important to understand that it can open the door to runtime error and a bang operator is not something will often see in a project. Under the hood, TypeScript removes from the type of the variable the union with `null` and `undefined`.

> Note: the below code throws an error

```
function functionForBang(s: string | undefined): void {
    // console.log("The first letter is ", s.charAt(0)); // Doesn't compile
```

```
    console.log("The first letter is ", s!.charAt(0)); // Crash but compile
    const v1 = s; // v1 type is string | undefined
    const v2 = s!; // v2 type is string

}
functionForBang(undefined);
```



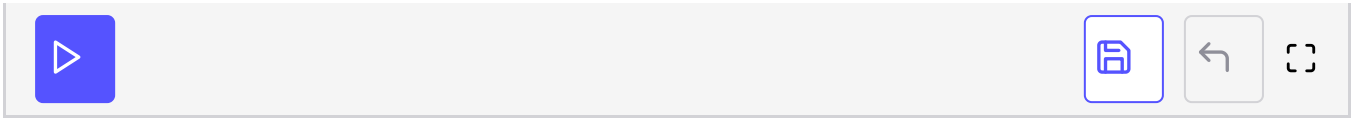
The example above is dangerous because if the parameter receives undefined, the code will try to get the first character of an `undefined` variable.

Proper Usage of the Bang Operator

Proper usage is when TypeScript may not infer that during a particular flow of execution, the value cannot be undefined, even if the variable is defined to accept undefined. This is true in the case of deferred initialization or re-initialization.

```
let deferedInitialezVariable!: number[];
initialize();
deferedInitialezVariable.push(4);

function initialize(): void {
    deferedInitialezVariable = [0, 1, 2, 3];
}
```



The bang operator must be used carefully. Once the operator is introduced to a codebase, it becomes easy to abuse instead of handling undefined variable with type check.