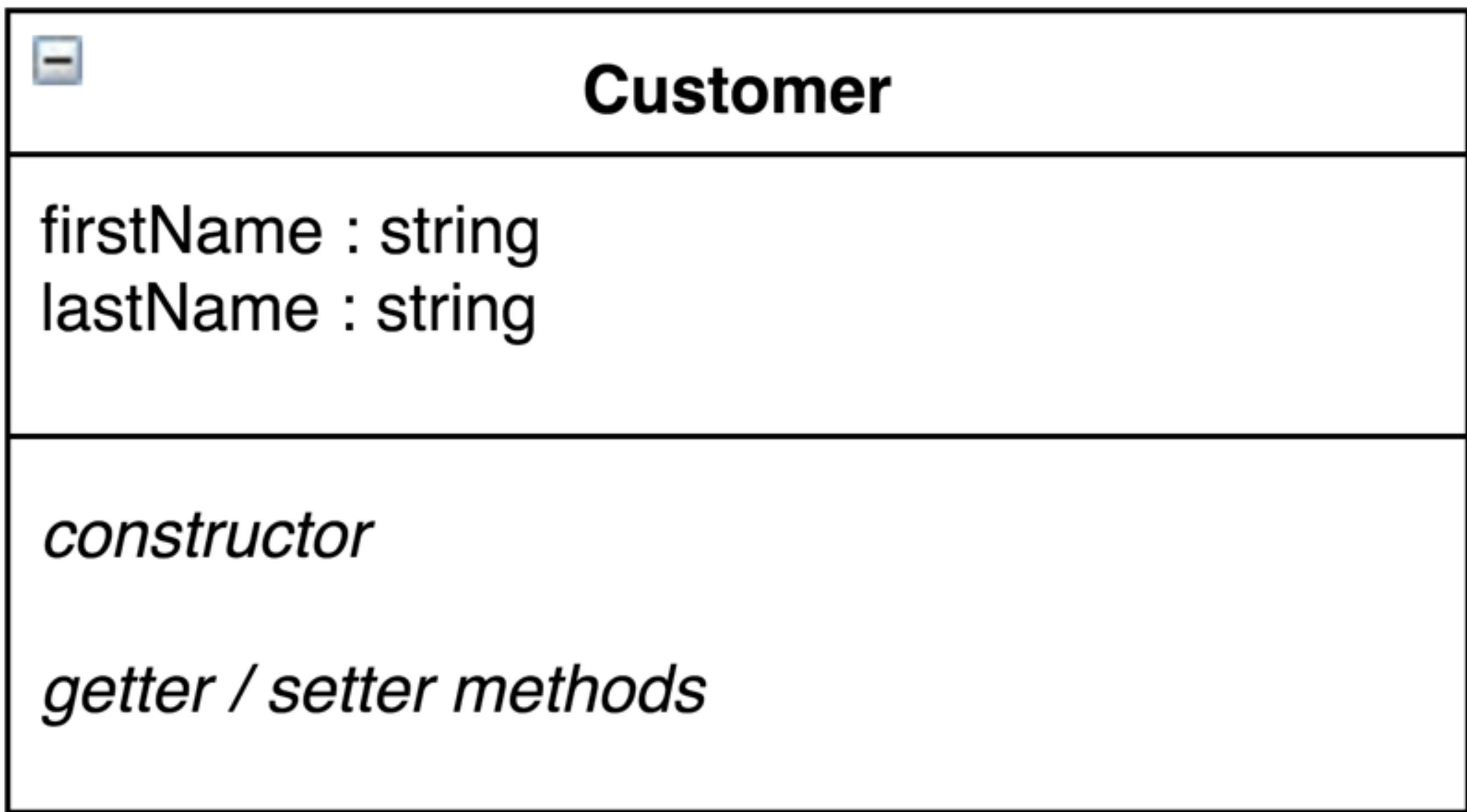


# TypeScript - Creating Classes



# Customer Class



# Basic Structure

File: Customer.ts

```
class Customer {  
    // properties  
  
    // constructors  
  
    // getter / setter methods  
}
```

Can use any file name: \*.ts

mydemo.ts

# Properties

File: Customer.ts

```
class Customer {  
    // properties  
}
```

Properties are  
public by default

We'll cover access  
modifiers shortly

# Construct an Instance

File: Customer.ts

```
class Customer {  
  
    // properties  
    firstName: string;  
    lastName: string;  
  
}  
  
// now let's use it
```

Construct an instance  
using the  
"new" keyword

C:\> tsc Customer.ts

C:\> node Customer.js  
Martin  
Dixon

# Create a Constructor

File: Customer.ts

```
class Customer {  
    firstName: string;  
    lastName: string;  
}
```

Use the  
"constructor"  
keyword

Must use "this"  
to refer to properties defined in this class

# Construct an Instance

File: Customer.ts

```
class Customer {  
    firstName: string;  
    lastName: string;  
  
    constructor(theFirst: string, theLast: string) {  
        this.firstName = theFirst;  
        this.lastName = theLast;  
    }  
  
    // now let's use it  
    let myCustomer = new Customer("Martin", "Dixon");  
  
    console.log(myCustomer.firstName);  
    console.log(myCustomer.lastName);
```

Construct an instance  
using our new  
constructor

```
C:\> tsc Customer.ts  
  
C:\> node Customer.js  
Martin  
Dixon
```

# Access Modifiers

Modifier	Definition
<b>public</b>	Property is accessible to all classes (default modifier)
<b>protected</b>	Property is only accessible in current class and subclasses
<b>private</b>	Property is only accessible in current class

# Mark the properties as "private"

File: Customer.ts

```
class Customer {  
  
    private firstName: string;  
    private lastName: string;  
  
    constructor(theFirst: string, theLast: string) {  
        this.firstName = theFirst;  
        this.lastName = theLast;  
    }  
}  
  
// now let's try to access them  
let myCustomer: Customer = new Customer("Susan", "Public");  
  
myCustomer.firstName = "Susan";  
myCustomer.lastName = "Public";  
  
console.log(myCustomer.firstName);  
console.log(myCustomer.lastName);
```

(property) Customer.firstName: string  
Property 'firstName' is private and only  
accessible within class 'Customer'. ts(2341)

Compilation error

# Compiling the Code

```
C:\> tsc Customer.ts
```

```
Customer.ts:16:12 - error TS2341: Property 'firstName' is private and only  
accessible within class 'Customer'.
```

```
16 myCustomer.firstName = "Susan";  
...  
...  
...
```

```
myCustomer.firstName = "Susan";  
myCustomer.lastName = "Public";
```

```
class Customer {  
    private firstName: string;  
    private lastName: string;
```

# Be Careful!!!!



- Even though there are compilation errors ...
- The TypeScript compiler will STILL generates a .js file! Yikes!!

```
C:\> tsc Customer.ts  
  
Customer.ts:16:12 - error TS2339: Property 'name' is private and only  
accessible within class Customer.  
...  
  
C:\> dir  
Customer.js | Customer.ts
```

What???

The screenshot shows a command-line interface where the `tsc Customer.ts` command was run. It produced an error message indicating that a property named `name` is private and can only be accessed within the `Customer` class. Below the command line, a `dir` command was run, showing that both the `Customer.js` and `Customer.ts` files exist in the directory. A large orange callout bubble points from the error message to the `Customer.ts` file, with the text "What???" inside it, highlighting the unexpected behavior of the TypeScript compiler.

# .... and the code will still run!



```
C:\> tsc Customer.ts
```

```
Customer.ts:16:12 - error TS2341: Property 'firstName' is private and only  
accessible within class 'Customer'.
```

...

```
C:\> dir
```

```
Customer.js
```

```
Customer.ts
```

```
C:\> node Customer.js
```

```
Susan
```

```
Public
```

```
// now let's use it  
let myCustomer = new Customer("Martin", "Dixon");  
  
myCustomer.firstName = "Susan";  
myCustomer.lastName = "Public";  
  
console.log(myCustomer.firstName);  
console.log(myCustomer.lastName);
```

What???

# We Can Prevent This!



Remove previous .js file

```
C:\> del Customer.js
```

```
C:\> tsc --noEmitOnError Customer.ts
```

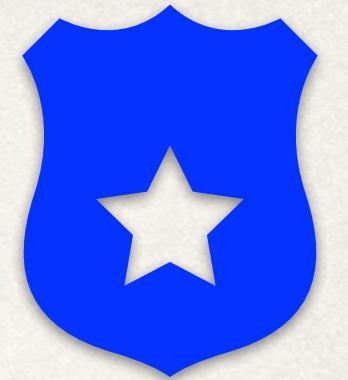
```
Customer.ts:16:12 - error TS2341: Property 'firstName' is private and only  
accessible within class 'Customer'.
```

...

```
C:\> dir
```

```
Customer.ts
```

# We Can Prevent This!



Do not generate .js file  
if there is a compilation error

```
C:\> del Customer.js
```

```
C:\> tsc --noEmitOnError Customer.ts
```

```
Customer.ts:16:12 - error TS2341: Property 'firstName' is private and only  
accessible within class 'Customer'.
```

...

```
C:\> dir
```

```
Customer.ts
```

Yaaay!  
The .js file was NOT generated!