

# Type Inference



# What the compiler knows

```
val message = "Hello, world!"
```

...so this value is also a String !

this is a String...

```
val x = 2  
val y = x + "items"
```

an Int, so x is an Int

Int + String = String

...so y is a String !

```
val message: String = "Hello, world!"
```

The compiler infers the type from the right hand side!

```
val x: Int = 2  
val y: String = x + "items"
```

# What the compiler *also* knows

```
def succ(x: Int) = x + 1
```



```
def succ(x: Int): Int
```

The compiler infers the return type  
from the implementation

But don't try to fool it:

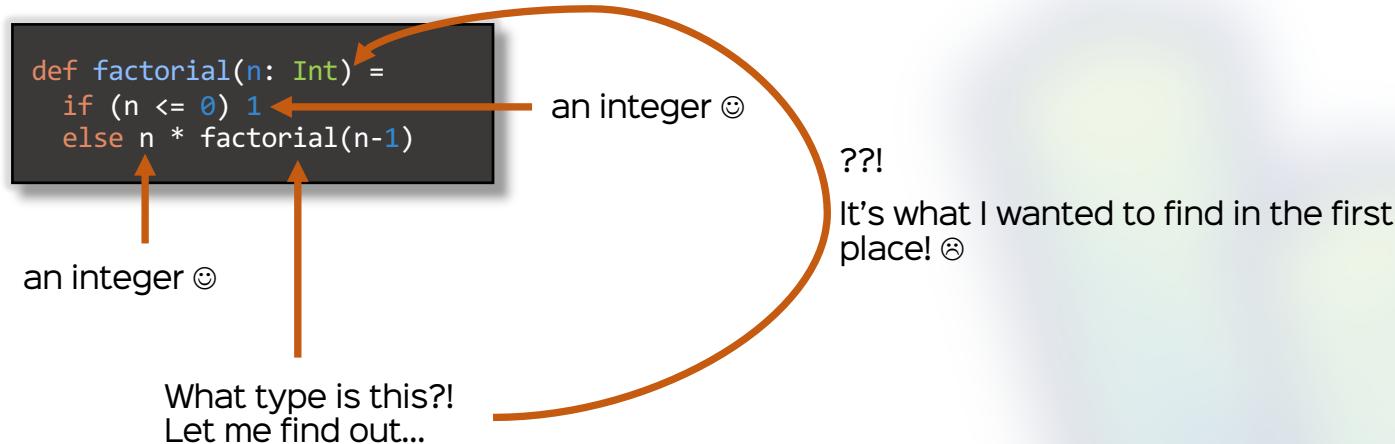
```
val x: Int = "Hello, world!"
```

an `Int`      a `String`

?! ←

type mismatch

# Help the compiler



Takeaway: for recursive functions, always specify the return type!  
(as best practice: always specify the return type regardless)

**Scala rocks**

