Scala.js

- https://github.com/oyvindberg/scalajs-workshop

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Who am i?

- Worked professionally with Scala for 4+ years
- Have used Scala.js for a year
- Works for Arktekk

What is Scala.js?

- Write Scala, compile, run in browser
- Full support for the entire Scala language*
- Full javascript interop
- Fast enough (0.9x - 4x times slower than javascript),
- Small enough (hundreds of kilobytes)
- Production-ready February 2015

Scala - A scalable language

- I thought it meant that functional code scales well
- It actually means *a language that grows with you*
- We already used it for backend and builds (Sbt)
- Has now grown to express Html, Css and Ajax calls, with Javascript as the byte code and platform
- Elsewhere it’s also being used for scripting (Ammonite) and soon native applications (Scala-Native)

Html (Scalatags)

```scala
object ScalatagsTest {
  import scalatags.Text.all._

  val content: TypedTag[String] =
    html(
      body(
        h1("Hello, World!")
      )
    )
  //<html><body><h1>Hello, World!</h1></body></html>
}
```

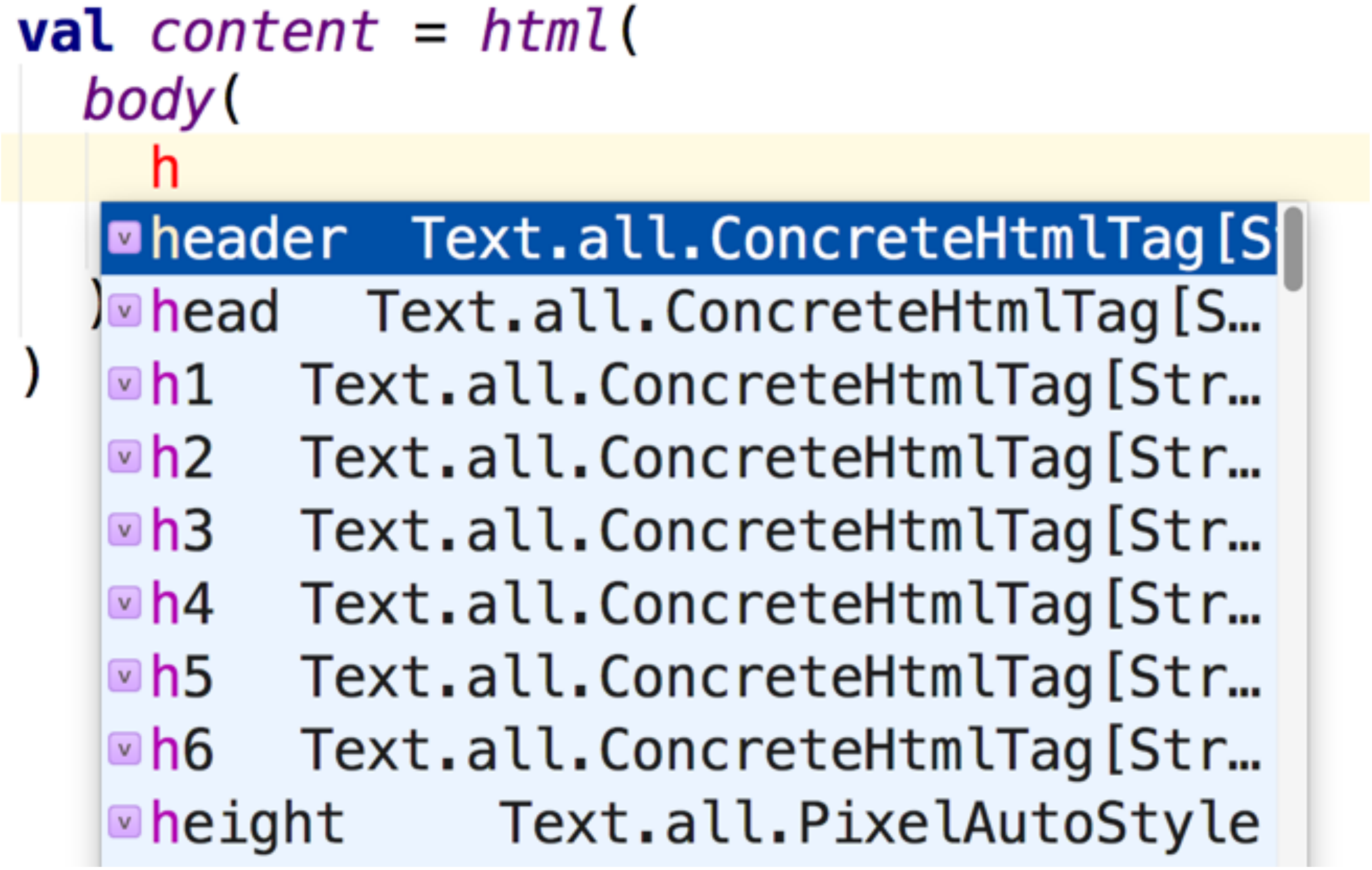
Html (Scalatags)

```
object ScalatagsTest {
  import scalatags.Text.all._

  val content: TypedTag[String] =
    html(
      bodyy(
        h1("Hello, World!")
      )
    )
}
```

Html (Scalatags)

```scala
def scriptTag(s: String) =
  script(`type` := "text/javascript", src := s)

html(
  head(
    Seq("script1.js", "script2.js") map scriptTag
  )
)
```

Html (Scalatags)



```
val content = html(
  body(
    h
  )
)
```

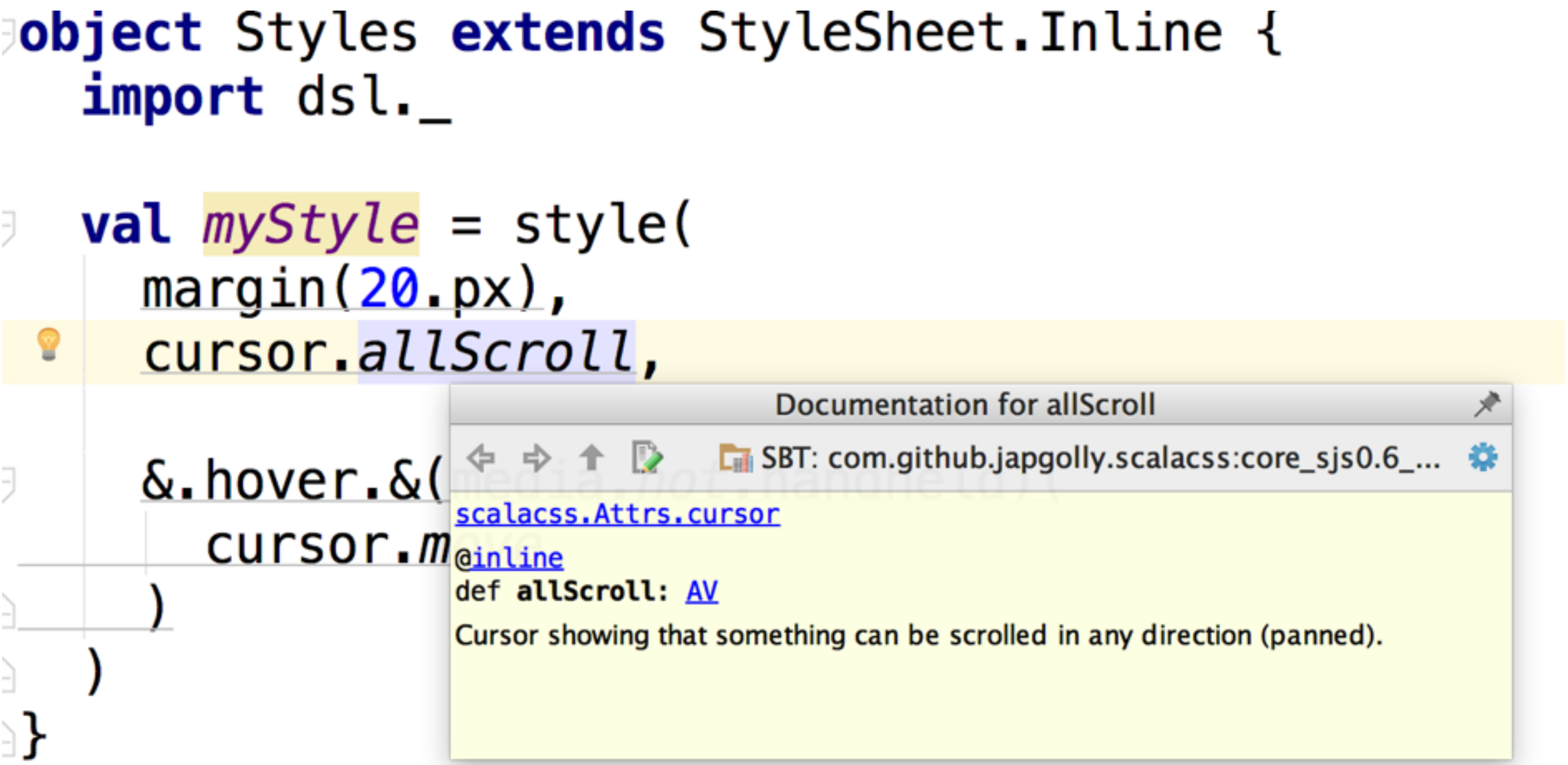
```
header   Text.all.ConcreteHtmlTag[S
head     Text.all.ConcreteHtmlTag[S…
h1       Text.all.ConcreteHtmlTag[Str…
h2       Text.all.ConcreteHtmlTag[Str…
h3       Text.all.ConcreteHtmlTag[Str…
h4       Text.all.ConcreteHtmlTag[Str…
h5       Text.all.ConcreteHtmlTag[Str…
h6       Text.all.ConcreteHtmlTag[Str…
height         Text.all.PixelAutoStyle
```

Css (Scalacss)

```scala
import scalacss.Defaults._

object Styles extends StyleSheet.Inline {
  import dsl._

  val myStyle = style(
    margin(20.px),
    cursor.allScroll,

    &.hover.&(media.not.handheld)(
      cursor.move
    )
  )
}
```

```css
.Styles-myStyle {
  margin: 20px;
  cursor: all-scroll;
}

@media not handheld {
  .Styles-myStyle:hover {
    cursor: move;
  }
}
```

Css (Scalacss)



```
object Styles extends StyleSheet.Inline {
  import dsl._

  val myStyle = style(
    margin(20.px),
    cursor.allScroll,

    &.hover.&(media.not.handheld)(
      cursor.move
    )
  )
}
```

Documentation for allScroll
SBT: com.github.japgolly.scalacss:core_sjs0.6_...

scalacss.Attrs.cursor

```
@inline
def allScroll: AV
```

Cursor showing that something can be scrolled in any direction (panned).

Scalatags/Scalacss

```scala
import scalacss.ScalatagsCss._

val content: TypedTag[String] =
  html(
    head(
      Styles.render[TypedTag[String]]
    ),
    body(
      Styles.myStyle,
      h1("Hello, World!")
    )
  )
```

```html
<html>
    <head>
        <style type="text/css">
       .Styles-myStyle {
            margin: 20px;
            cursor: all-scroll;
        }

        @media not handheld {
            .Styles-myStyle:hover {
                cursor: move;
            }
        }
        </style>
    </head>
    <body class="Styles-myStyle">
        <h1>Hello, World!</h1>
    </body>
</html>
```

Ajax (dom wrapper)

```
val xhr = new XMLHttpRequest
xhr.open("GET", "http://localhost:8080")
xhr.send()
xhr.onload = (e: Event) ⇒ {
  println(xhr.status)
}
```

Ajax (dom facade)

```
val f: Future[XMLHttpRequest] =
  Ajax.get("http://localhost:8080/resource/42")

f.foreach(res ⇒ println(res.status))
```

Ajax (Autowire)

```scala
case class User(id: Int, name: String)

trait Api {
  def lookup(id: Int): Future[User]
}

object ServerImpl extends Api {
  override def lookup(id: Int): Future[User] =
    ???
}

import autowire._

val f: Future[User] =
  AutowireClient[Api].lookup(42).call()

f.foreach(println)
```

Libraries

http://www.scala-js.org/libraries/

My take

- Solves **a lot** of headaches for web dev
- Having access to big parts of the Scala ecosystem is **awesome**
- Young frontend ecosystem, still very influenced by Javascript, no “one, true way”
- Interplay between IDE, sbt, plugins, compilers and dependencies is complex
- Ready to use now

Thanks

- Code, slides, further resources: https://github.com/oyvindberg/scalajs-workshop
- http://www.scala-js.org/