

Scala workshop

whoami

Agata Przybyszewska

PhD (Mathematics, Computer
Science)

Enterprise Architect

Instructor at Lund&Bendsen, lecturer
at IT University of Copenhagen

Email: agata@lundogbendsen.dk

Specialist in integration architecture,
security, SOA og REST.



About

- Introductory course
 - Scala programming language
 - Functional design patterns
- The participants will learn how to use the Scala language, and how to best benefit from the functional programming style.
- The course is taught **workshop** style, where theory and slides are mixed with lots of practical hands-on exercises.
- Emphasis is put on design thinking and group exercises.
- We challenge the students with games and role playing exercises, to reinforce key concepts.

Course Contents

- Scala language basics - control structures, classes and objects, basic types
- Using the REPL
- Unit testing
- Building (sbt and gradle)
- Interoperability with Java
- Functional objects, Functions and Closures
- Composition and Inheritance, Traits
- Pattern matching, case classes
- Type inference, conversions
- Higher order functions
- Collection API
- OO meets functional programming - patterns and best practices
- Mutable vs immutable
- Pure vs Side Effects

Practicalities

- 2 day course, 09-16
- Lunch break 12-13
- Course content on Github: <https://github.com/LundOgBendsen/LBE2921-Scala>
- USB with course software: Eclipse + Scala plugin, gradle, sbt etc
- Expect interaction - small games, quizzes, team exercises

Let's get started

- Open the Scala REPL
- Type a few expressions - what is 1+1 today?
- :q to quit

```
# open a shell and type
Agatas-MacBook-Pro:learning_scala agatanoair$ scala
Welcome to Scala 2.12.4 (Java HotSpot(TM) 64-Bit Server VM, Java
1.8.0_74).
Type in expressions for evaluation. Or try :help.

scala>
```

Expressions

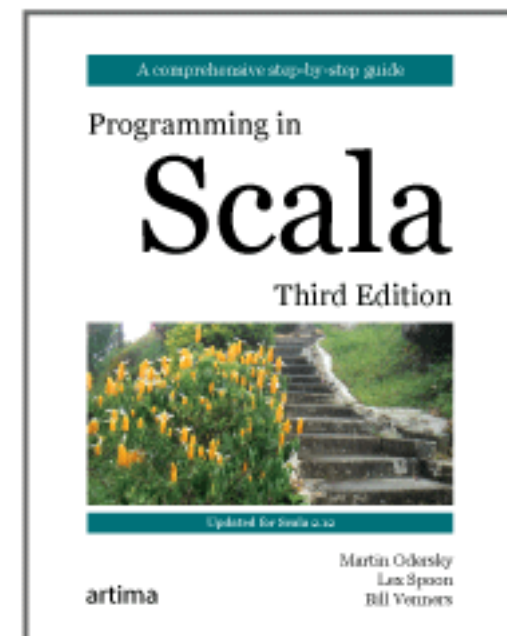
- Primitive: 1, true, “Hello”
- Compound: 1+2
- Evaluation: left -> right

```
scala> "Hello"  
res3: String = Hello
```

```
scala> 1+2  
res0: Int = 3
```

Recommended reading

- Online tutorial: <https://docs.scala-lang.org/tour/tour-of-scala.html>
- Book: [Programming in scala, 3rd edition](#)
- Coursera: <https://www.coursera.org/learn/progfun1/home/welcome>
- Twitter's Scala School: https://twitter.github.io/scala_school/
- Scala koans: <http://www.scalakoans.org/>



Lab 00

Inspect the tools:

- JDK
- Scala
- Eclipse
- REPL
- sbt
- gradle

```
# Check out the course content from the USB  
Lab 00
```