

The background is a solid blue gradient, transitioning from a darker teal at the top to a lighter blue at the bottom. Overlaid on this are two abstract network diagrams. The top diagram, in a lighter teal, consists of several nodes connected by thin lines, forming a complex web. The bottom diagram, in a lighter blue, is more extensive, with many more nodes and lines, creating a dense, interconnected pattern that resembles a molecular structure or a data network.

# FOUNDATIONS OF FUNCTIONAL PROGRAMMING IN SCALA

# Instructor

Backend developer for 10+ years

Author of Monocle 

Run meetups and in-house Scala training

# 1. Practical concepts of functional programming

# 1. Practical concepts of functional programming

Why FP matters to you, your colleagues and your business?

## 2. Become a Scala expert



# Prerequisites

Basic understanding of the Scala syntax

# Exercises with answers and tests

```
4
5 object ParametricFunctionExercises {
6
7   ////////////////
8   // Exercise 1: Pair
9   ////////////////
10
11   val names: Pair[String] = Pair("John", "Elisabeth")
12   val ages: Pair[Int]     = Pair(32, 46)
13
14   case class Pair[A](first: A, second: A) {
15     // 1a. Implement `swap` which exchanges `first` and `second`
16     // such as Pair("John", "Doe").swap == Pair("Doe", "John")
17     def swap: Pair[A] =
18       ???
19   }
```

```
5
6 object ParametricFunctionAnswers {
7
8   ////////////////
9   // Exercise 1: Pair
10  ////////////////
11
12  val names: Pair[String] = Pair("John", "Elisabeth")
13  val ages: Pair[Int]     = Pair(32, 46)
14
15  case class Pair[A](first: A, second: A) {
16    def swap: Pair[A] =
17      Pair(second, first)
18
19    def map[To](update: A => To): Pair[To] =
20      Pair(update(first), update(second))
21  }
```

```
[info] - Predicate isValidUser
[info] - JsonDecoder UserId
[info] - JsonDecoder UserId int.toString
[info] - JsonDecoder LocalDate
[info] - JsonDecoder LocalDate random
[info] - JsonDecoder Option
[info] ScalaTest
[info] Run completed in 518 milliseconds.
[info] Total number of tests run: 18
[info] Suites: completed 1, aborted 0
[info] Tests: succeeded 18, failed 0, canceled 0, ignored 0, pending 0
[info] All tests passed.
[info] Passed: Total 18, Failed 0, Errors 0, Passed 18
[success] Total time: 1 s, completed 8 May 2020, 17:57:58
[IJ]sbt:foundation>
```

# Personal learning experience

Exercises explained and solved in  
videos



# Personal learning experience

Online community ready to answer  
your questions

November 30th, 2019



**julien** 9:28 AM  
joined #general.



Pinned by you



**julien** 2:35 PM

Github repository: <https://github.com/fp-tower/foundation>



**GitHub**

[fp-tower/foundation](https://github.com/fp-tower/foundation)

Foundation of functional programming course. Contribute to fp-tower/foundation development by creating an account on GitHub.

FOUNDATION

# Chapter 1: Functions

1. Value functions
2. Generic functions
3. Case study: Big data
4. Functional subset

# Chapter 2: Actions

1. How to perform actions in a testable way?
2. Implement toy IO
3. Introduction to concurrency



# WELCOME TO FOUNDATIONS

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