

# Three Goals



## 1. Get familiar with typed FP building blocks

Pure function, Recursion, Lazyness

Side effects, 10

Option, Either

Algebraic Data Type (ADT), Parametricity



## 2. Develop your FP intuition

#### How do you reverse a String?

```
def reverseString(x: String): String = {
  val charArray = x.toCharArray
  val lastIndex = x.length - 1
  val middleIndex = x.length / 2

for (i <- 0 until middleIndex) {
   val tmp = charArray(i)
   charArray(i) = charArray(lastIndex - i)
   charArray(lastIndex - i) = tmp
  }

String.valueOf(charArray)
}</pre>
```



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  }

String.valueOf(charArray)
}</pre>
```

```
def reverseString(x: String): String =
    x.foldLeft("")(
       (accumulator: String, currentChar: Char) =>
        accumulator + currentChar
)
```



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  }

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}</pre>
```

```
def reverseString(x: String): String =
  x.foldLeft("")(_ + _)
```



3. Why FP matters to you, your colleagues and your business



# Out of scope

How to build a complete FP application

Library specific API

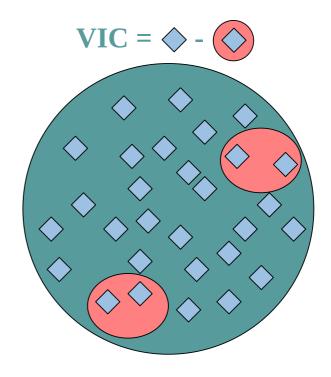
Scala/JVM low level optimisations



## Course main features

### Original diagrams

**Applicative** 





### Course main features

Original diagrams

Lots of exercises (200+) with tests and answers

```
[info] - Id.Traverse.identity
[info] - Id.Traverse.map coherence
[info] - Const.Traverse.compose
[info] - Const.Traverse.foldMap coherence
[info] - Const.Traverse.identity
[info] - Const.Traverse.map coherence
[info] - foldLeft same as List
[info] - traverse_
[info] - foldMapM
[info] - parseNumber
「info] - checkAllUsersAdult
[info] ScalaTest
[info] Run completed in 2 seconds, 312 milliseconds.
[info] Total number of tests run: 313
[info] Suites: completed 8, aborted 0
[info] Tests: succeeded 313, failed 0, canceled 0, ignored 0, pending 0
[info] All tests passed.
[info] Passed: Total 313, Failed 0, Errors 0, Passed 313
[success] Total time: 3 s, completed 14-Jun-2019 14:05:32
sbt:fp-foundation>
```



### Course main features

Original diagrams

Lots of exercises (200+) with tests and answers

Online community ready to answer your questions

chat on gitter



### Contact

Twitter: <a href="https://twitter.com/TheFpTower">https://twitter.com/TheFpTower</a>

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# Module 1: Function

