

# FOUNDATION



# Three Goals



# 1. Get familiar with typed FP building blocks

Pure function, Recursion, Lazyness

Side effects, IO

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)  
}
```



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  String.valueOf(charArray)  
}
```

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



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}
```

```
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

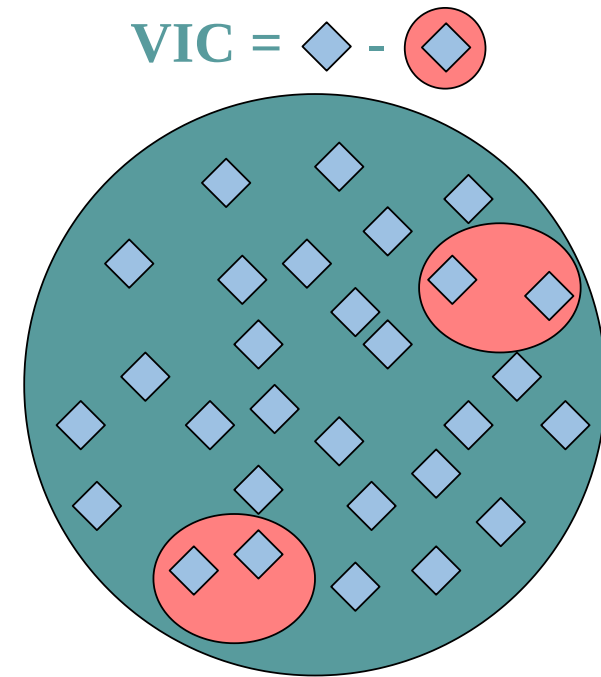




# Course main features

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> █
```



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Original diagrams

Lots of exercises (200+) with tests and answers

Online community ready to answer your questions

chat on gitter



# Contact

Twitter: <https://twitter.com/TheFpTower>

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# Module 1: Function

